EQB

ENVIRONMENTAL QUALITY BOARD

MN PLANNING

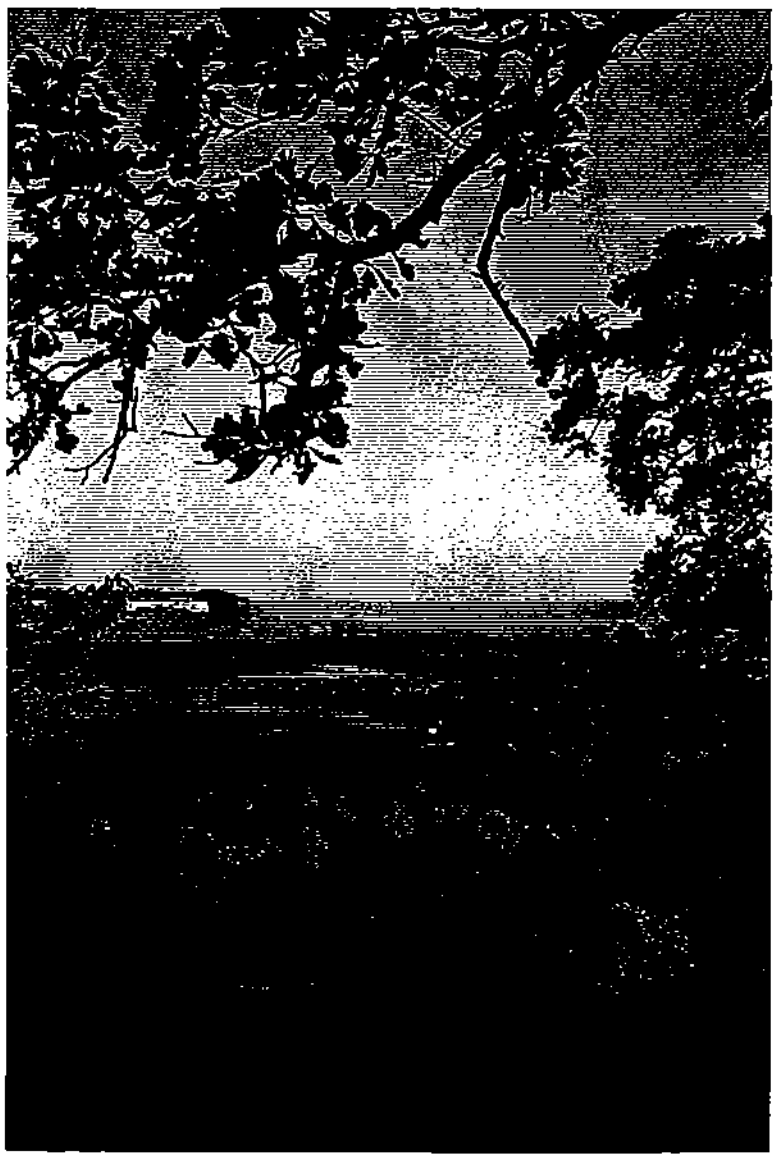
# REPORT OF THE SITE ADVISORY TASK FORCE

**Goodhue County Dry Cask Storage Alternate Site Project**

**to the**

# MINNESOTA ENVIRONMENTAL QUALITY BOARD

January, 1996



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**to the**

## MINNESOTA ENVIRONMENTAL QUALITY BOARD

January, 1996

This report was written and unanimously approved by the citizens' Site Advisory Task Force for the Goodhue County Dry Cask Storage Alternate Site Project, Mr. Bruce Halstead, Chair.

Inquiries about the Minnesota Environmental Quality Board's Procedures for Dry Cask Storage Siting, or requests to be placed on the MEQB's public notice mailing list should be directed to John Hynes, EQB Public Advisor, 300 Centennial Bldg., 658 Cedar Street, St. Paul, MN 55155; phone (612) 296-2871, toll free 800-657-3794, fax (612) 296-3698.

Upon request, this document will be made available in alternate format, such as Braille, large print or audio tape.
For TDD, contact Minnesota Relay Service at (612)297-5353 or 1-800-627-3529 and ask for Minnesota Planning.

Cover Photo: Lake Pepin, Billie Hunt, Photographer, Lake City, Minnesota

**MINNESOTA ENVIRONMENTAL QUALITY BOARD**
**Goodhue County Dry Cask Storage Alternate Site Project**

# EXECUTIVE SUMMARY

## The Charge

- Review NSP's Application for a Certificate of Site Compatibility, and evaluate NSP's preferred and alternate sites and the environmental analysis.
- Determine if any additional sites should be considered, identify such sites, and conduct an environmental review of alternate sites.
- Identify significant environmental issues associated with the project design and site alternatives which will be addressed in the Environmental Impact Assessment.
- Identify a site preferred by the Task Force if a majority of the Task Force considers such a recommendation to be justified by the information in the record of its deliberations.

## The Process

The Task Force, comprised of representatives from impacted communities, met ten times over the course of three months. We created four subcommittees; each addressed a separate element of the charge. Extensive research, field trips, expert testimony, concerned citizen input, and tremendous support from the EQB support staff led to the results contained in the enclosed report. We were extremely careful to stay within the EQB's charge to us.

Despite limited time and resources, the volunteer efforts of Task Force members and all citizens involved with this project are both noteworthy and remarkable. Thousands of hours have been dedicated by scores of citizens to assure that citizen's voices on such a significant local, state, and national issue are effectively and publicly documented.

## The Results

With regard to our charge from the EQB:

- NSP's application details an effort to site a nuclear waste storage facility in Goodhue County, not at Prairie Island. It is clear, however, after a more comprehensive review of public health and safety issues, socioeconomic issues which include demographics and the impact on people and land uses, and environmental issues peculiar to the region, that NSP's sites "O" and "P" are not appropriate for the storage of nuclear waste and should not be further considered by the EQB.
- Based on our environmental review of 16 alternate sites recommended for consideration by concerned citizens, consistent with siting criteria which includes that provided in the charge, there are no additional sites in Goodhue County which could best serve the State, NSP, or the present and future generations of Minnesotans. There are no additional sites which should be further considered by the EQB.

- The report contains discussions of numerous environmental issues associated with the project design and site alternatives which should be included in the environmental impact assessment. These issues range from effects on tourism to karstic conditions of Goodhue County to public perceptions of the impact of nuclear waste storage. Public safety and public health issues are foremost in the minds of the citizenry. The probability of an accident or incident occurring during movement may be small, but the effects would be catastrophic. The farther a potential site is from Prairie Island, the greater the risk. The more populated areas through which to pass, the more bridges and roads to cross, the greater the risk of a catastrophe.

- There are too many uncertainties regarding the public health issues of long-term, low-level exposure to radiation as we expect to find with dry cask loading, movement, maintenance, and storage. Some of the models used by experts may lead to inaccurate and misleading standards which, again, may be catastrophic.

## Complementary Issues

- The failure of the federal government to meet its responsibility to provide a national permanent repository — and the low expectation that it ever will — has forced the Task Force to consider nuclear waste storage in Minnesota for an undetermined duration. The EQB needs to address this issue before it considers environmental impacts. Permanent storage has a much different set of issues associated with it than does a 20-40 year storage term.

- The Minnesota Legislature needs to revise its 1994 laws regarding storage of nuclear waste guidelines set forth in the Minnesota Environmental Policy Act, Minnesota Environmental Rights Act, Electric Energy Task Force, and the Sustainable Development Initiative. First, the legislation puts Minnesota's citizens in harm's way because Minnesota could become the first and only state to allow off-site commercial dry cask storage. This decision could pave the way to a U.S. permanent repository located in Minnesota. Secondly, the legislation has forced the EQB, PUC, and other state agencies to use inappropriate laws, rules, and regulations to site the facility. Normal, more appropriate processes have been by-passed.

- This report contains the results of subcommittee investigations, extensive research, field trips, expert testimony, and concerned citizen input. To ease a reader's review and analysis efforts, we have placed a summary page of sections 3, 4, 5, 6 and 7 both here and at the beginning of those sections.

## 3.0 U.S. Policy on Radioactive Waste Disposal

# SUMMARY

### An Historical Perspective

Passage of the Nuclear Waste Policy Act (NWPA) in 1972 required the Department of Energy (DOE) to construct geologic repositories for radioactive nuclear fuel and high-level nuclear waste. The search for potential sites started in 1976 under the National Waste Terminal Storage Program. From 1976 to 1987 several potential repositories were examined, including sites in Minnesota.

In 1987 Congress amended the NWPA and directed the DOE to:

- construct a temporary storage facility for spent nuclear fuel,
- concentrate efforts for a permanent facility at Yucca Mountain, Nevada, and
- postpone efforts to site a permanent repository in the Midwest or East

However, in 1994 the DOE said it would not construct a temporary storage facility for spent nuclear fuel. With no near-term storage solution, and with storage pools in nuclear plants near capacity, utilities started moving spent fuel into dry storage on-site. NSP built the on-site storage facility at Prairie Island.

Also in 1994, the federal government said it did not have a statutory obligation to accept fuel in 1998 if no site was available. Two lawsuits were filed against the DOE - one by 14 utilities, and one by 27 public agencies in 20 states. Yucca Mountain, should it ever open, essentially will be filled to capacity the day it opens.

Meanwhile, utilities (including Northern States Power Co.) started negotiating with the Mescalero Apache tribe in New Mexico to open a private monitored retrievable storage (MRS) facility on tribal land. The tribe voted in 1995 to proceed, and expects to apply to the Nuclear Regulatory Commission for a license in 1996.

### The Question of Permanency

The Site Advisory Task Force tried to determine how long cask-stored nuclear fuel would remain at an off-site storage facility. NSP's application contains statement of intent, but no assurance of when spent fuel will be moved. Siting considerations for temporary storage, of course, are different than siting considerations for a permanent facility.

The Task Force examined comments from Administrative Law Judge, Allan W. Klein. Judge Klein, regarding NSP's 1991 application for a Certificate of Need for a dry cask facility on Prairie Island, said: "*Unfortunately, the past delays in federal siting efforts raise questions about whether the dry cask storage will be temporary or will end up being permanent.*" Judge Klein also said "*If we knew the casks would be gone in 25 years, then it would be appropriate to grant the Certificate. But the record leads to the opposite conclusion: that the casks will not be gone in 25 years and may never leave...*"

The Minnesota Court of Appeals referencing dry cask storage on Prairie Island said "*..the proposed facility is properly classified as one in which waste is permanently stored...*"

Given these comments and the fact that the federal government has no near-term solution for a permanent storage facility, it seems prudent to treat any proposed alternate site as a permanent facility.

## 4.0 Complementary Activities and a Regulatory Review

# SUMMARY

### The Legislative Outcome

In 1994, the Minnesota House of Representative voted 104 to 30 for a compromise resolution to eliminate the dry cask storage issue and set in motion a transition toward renewable resources. In the Senate Resource Committee, the dry cask storage bill had been defeated. However, lobbying by nuclear energy proponents resulted in the Committee reversing itself and supporting dry cask storage. The compromise resolution was defeated.

The dry cask bill requires NSP to attempt to site a dry cask storage facility in Goodhue County. The facility will be the only site in the U.S. where spent nuclear fuel is stored in dry casks away from the reactor. Many believe this requirement was passed based on the belief that those who benefitted from NSP should cope with the nuclear waste.

### A Web of Laws, Rules and Regulations

The 1994 Legislature mandated the Environmental Quality Board (EQB) to adopt rules from the Power Plant Siting Act to site the off-site dry cask facility.

In July of 1995, NSP filed an Application for Certificate of Site Compatibility with the EQB. NSP's application did not contain a Certificate of Need, which is required by the Public Utilities Commission (PUC) when siting a radioactive waste storage facility. A Certificate of Need provides details about land use, wetlands, historic sites, etc. within five miles of the proposed site. In addition, it details the distribution of people within 50 miles.

The Department of Public Service noted that a Certificate of Need was not included with the application. The PUC responded by saying the Legislature implied that the Prairie Island Certificate should apply to the alternate site.

NSP applied the Prairie Island Certificate of Need (which details land use, historic sites, etc. within five miles of Prairie Island) to the proposed sites in Florence Township 16 miles away. The Prairie Island Certificate of Need also contains site specific information.

The PUC made no formal decision on the Certificate of Need requirement. The EQB accepted NSP's application.

Several other laws, rules and regulations impact this process.

In addition, Minnesota's Sustainable Development Initiative (SDI) offers decision-making principles and recommendations for sustaining Minnesota's economy, ecosystems, communities and future quality of life. While SDI does not provide a template through which off-site nuclear waste storage can be examined, it does provide a framework of principles on which such a template could be constructed.

## 5.0 Issues for the EQB to Address

# SUMMARY

### Charge from the EQB Chair

The EQB Chair charged the Task Force to: *"review NSP's Application for a Certificate of the site Compatibility"* and "identify significant environmental issues, as well as the question of permanency of storage." Of these, the following are most critical:

### Public Safety

- A complete risk assessment should be completed and the results thoroughly analyzed. NSP's Application does not contain a risk analysis to support the conclusion that off-site storage *"has very little, if any, potential for operation or accidental release"* of radiation.

- The EQB's Environmental Impact Assessment should address emergency response capabilities to the fullest degree. It needs to be determined what resources are needed, where they will be located, how they will be managed, how much they will cost, and how they will be phased out. Florence Township (in which both proposed sites are located) has no resident emergency response capabilities.

- The terrorist threat is real and needs to be examined (as evidenced by the train derailment in Arizona and the bombing in Oklahoma City). A worst case scenario should be defined, and the impacts of a successful terrorist attack should be assessed.

- To approve an alternate off-site storage facility without testing dry-casks to failure is fraught with danger.

### Public Health

- The effects of long-term chronic exposure to a relatively small dosage of radiation such as that emitted from a dry cask needs to be thoroughly examined.

- Existing models and methodologies used by public health officials to determine the effects of radiation are not yet proven to be effective indicators of health consequences.

- The risks to public health need to be assessed against any benefit that might be derived.

- An initial health assessment of the surrounding area of an alternate site should be required prior to the construction of any off-site building or transfer of casks.

### Permanency

- Environmental, safety, health and socioeconomic issues related to long-term or permanent storage are different from the issues associated with 20-40 year storage. Permanency impacts not only our generation, but generations far into the future.

- The EIA must address those risks and the many issues related to the more permanent storage of high level radioactive waste in Goodhue County and the state of Minnesota.

- Most importantly, however, are the issues relating to people as opposed to issues relating to economics. The majority of the people of Florence Township perceive off-site storage of nuclear waste as a real threat to their continuing quality of life.

## 6.0 Alternate Site Identification and Analysis

# SUMMARY

### Nomination of 16 Alternate Sites

The chair of the EQB charged the Task Force to: *"Determine if any additional sites should be considered, identify such sites, and conduct an environmental review of alternate sites consistent with the siting criteria provided in Minnesota Rule 4400.3310."*

Advertisements were placed in area newspapers to determine if any sites should be considered besides the two proposed by NSP. As a result, 16 additional sites were proposed in Goodhue County. Sites were located in five townships, including (alphabetically): Florence, Hay Creek, Stanton, Wacouta and Welch. Sites also were proposed that were within Red Wing city limits.

### Siting Criteria Compiled

Before evaluating alternate sites, the Task Force compiled a list of siting criteria from state and federal regulations and from citizen comments. The resulting three pages of criteria were pared down to 10 criteria. The first six criteria are from 4400.3100; the last four are from federal regulations and citizen comments. Adopted siting criteria include:

- effects on human settlement, including permanency
- effects on unique natural resources
- effects on public health and safety
- effects on natural environment
- site location
- site security concerns
- effects on future development
- effects on land based economies
- geologic foundation of the site
- effects on historic/archeological resources

The Task Force calculated a minimum land area requirement. Federal regulations require a 100-meter controlled area around the storage and handling area (which measures 340- by 520-feet in NSP's application). This translates into a minimum land area requirement of 26 acres.

### Site Descriptions, Environmental Data Collected

The Alternate Site Subcommittee traveled to all 16 sites. They compiled data based on their observations, as well as information from state agencies and area residents.

Data collected included land based economies, population centers, hydrology, protected wetlands, soils, flood plains, transportation concerns, excluded lands, etc. Also, aerial photos help show the location of each site and the surrounding area.

### 16 Alternate Sites Evaluated

Using the information available, the Task Force examined and discussed each alternate sites. Task Force members then evaluated each site based on the 10 siting criteria (see above). Evaluations for each site were compiled and presented to the Task Force.

The Task Force then voted on each site. The question: Should this site be sent to the EQB as a potential nuclear waste storage facility. Fifteen sites were eliminated.

Additional information on the NSP Ash Disposal site in Red Wing was requested. The entire Task Force visited the site and examined the additional information. The Task Force then voted not to send the NSP Ash Disposal site to the EQB.

## 7.0 Evaluation of NSP's Proposed Sites

# SUMMARY

### Site Descriptions, Environmental Data Collected

The Chair of the EQB charged the Task Force to *"evaluate NSP's preferred and alternate sites."* To fulfill the charge, the Task Force: (1) compiled data on the two sites from state agencies, nearby residents and other resources; then (2) used its existing siting criteria and evaluation procedure (see section 6.0) to examine NSP's two sites.

Information gathered by the Task Force describes (partial listing):

- nearby homes and businesses
- land based economies
- surface and groundwater resources
- population density
- the area's natural resources
- site security concerns
- site location/proximity to sensitive areas
- recreational resources

### Evaluation of NSP's Alternate Site "O"

The Task Force voted not to recommend site "O" to the EQB as an off-site nuclear waste storage facility.

- NSP's site "O" is an agricultural field over 40 acres in size. The Florence Township Community Center and park abut the site. The site is visible from public roads.
- The nearest population center is Frontenac Station, about one-half mile away. The community includes businesses and approximately 100 homes, plus a fenced play park, church, restaurant, etc. The area has more than 30 year-round businesses.
- The site is in the center of a recreational area; many businesses rely on tourism. The site impacts on the Richard J. Dorer Memorial Hardwood Forest, Lake Pepin, Mount Frontenac, Frontenac State Park, and the scenic Hiawatha Valley along the Mississippi.
- There are no emergency response assets in Florence Township.
- Wells Creek is located along the southern edge and east of the property. Wells Creek has had three floods in the past 25 years.
- The proposed rail spur will cross on or near native American burial grounds.

### Evaluation of NSP's Preferred Site "P"

The Task Force voted not to recommend site "P" to the EQB as an off-site nuclear waste storage facility.

- NSP's site "P" is an agricultural field over 40 acres in size. A large dairy farm business is less than a mile away. The site is visible from public roads.
- The nearest population center is Frontenac Station, about one-half mile away. The community includes businesses and approximately 100 homes, plus a fenced play park, church, restaurant, etc. The area has more than 30 year-round businesses.
- The site is in the center of a recreational area; many businesses rely on tourism. The site impacts on the Richard J. Dorer Memorial Hardwood Forest, Lake Pepin, Mount Frontenac, Frontenac State Park, and the scenic Hiawatha Valley along the Mississippi.
- There are no emergency response assets in Florence Township.
- The site is near Wells Creek, which has had three floods in 25 years.

MINNESOTA GOVERNOR'S COUNCIL ON GEOGRAPHIC INFORMATION

October 29, 2003

Cheri Pierson Yecke, Commissioner
Minnesota Department of Education
1500 Highway 36 West
Roseville, Minnesota 55113-4266

Dear Commissioner Yecke:

Members of the Minnesota Governor's Council on Geographic Information recently had an opportunity to review the current draft of the Social Studies Standard and were pleased to learn that it included a strong geography component. It voted unanimously to endorse the adoption of the standard with its emphasis on geographic education.

Members were especially pleased that the standard emphasized technology, including the provision that high school geography students "use Geographic Information Systems to answer geographic questions at a variety of scales from local to global." Geographic Information Science and Geographic Information Systems, known as GIS, are used by a growing number of organizations within Minnesota and throughout the nation for activities ranging from protecting the environment to responding to emergencies. Students introduced to GIS in high school will be prepared to apply those skills to their postsecondary studies and in productive careers that benefit us all.

The Minnesota Governor's Council on Geographic Information brings together 23 experts from the geographic information community representing government agencies, higher education and the private sector, including 18 appointed annually, to coordinate millions of dollars of annual investments and recommend policies and practices that promote the effective use of GIS. The council considers GIS to be essential to improving the quality of geography education.

Please contact me if you have any questions about our endorsement or about the Council. The Council's web site is www.gis.state.mn.us.

Sincerely,

Larry Charboneau

Larry Charboneau, Chair
MN Governor's Council on Geographic Information
(612) 676-3950
larry@lawrencegroup.com

658 Cedar St.
St. Paul, MN 55155

Telephone:
651-296-1211

Facsimile:
651-296-1212

TTY:
800-627-3529

www.lmic.state.
mn.us/gc/gc.htm

**MINNESOTA ENVIRONMENTAL QUALITY BOARD**
**Site Advisory Task Force**
**Goodhue County Dry Cask Storage Alternate Site Project**

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Q. Radioactive Waste Management Act, Minnesota Statutes §116C.705 through 116C.848.

R. Minnesota Environmental Rights Act (MERA), Minnesota Statute §116B.01 *et seq.*

S. Public Review Draft, Challenges for a Sustainable Minnesota, co-written by the EQB staff at Minnesota Planning, July 1995.

T. Glickman and Golding, *Shipping Nuclear Waste*, Public Utilities Fortnightly, 11, September 15, 1991.

U. Spraggins, *Transporting Spent Nuclear Fuel by Rail: the Issue of Price to the Risk*, Journal of Transportation Law, Logistics and Policy, p. 415.

V. Security Analysis and Index of Potential Terrorist Weapons, Miscellaneous Sources.

W. Sec A.18, page A-19, Implementation Plan for the EIS for a Multi-Purpose Canister System for Management of Civilian and Spent Nuclear Fuel, DOE, August 1995.

X. 10 Code of Federal Regulations (CFR) Part 72, Licensing Requirements for the Independent Storage of Spent Nuclear Fuel and High-Level Radioactive Waste, September 30, 1994.

Y. History, Current Status, and Trends of Radiation Protection Standards, Hendee, W.R., Medical College of Wisconsin, Milwaukee, 1993 (Library Document Identifier).

Z. Prefiled Direct Testimony of Rosalie Bertel, Ph.D. on Behalf of the Prairie Island Mdewakanton Sioux Indian Community, MPUC Docket No. E-002/CN-91-19.

AA. Rebuttal Testimony of Dr. Jacob I. Fabrikant Before the Public Utilities Commission of the State of Minnesota, Docket No. E002/CN-91-19, November 14, 1991.

BB. Second Quarter Environmental Radiation Data Report for the NSP's Prairie Island Nuclear Generating Plant and Independent Spent Fuel Storage Installation, Division of Environmental Health, Minnesota Department of Health, August 1995.

CC. Radiation Health Effects: An Overview, Hanford Health Information Network Fact Sheet, Winter 1993-94.

DD. Genetic Effects and Birth Defects from Radiation Exposure, Hanford Health Information Network Fact Sheet, Fall, 1994.

EE. Southeastern Massachusetts Health Study Final Report: Investigation of Leukemia Incidence In 22 Massachusetts Communities, 1978-1986, Massachusetts Department of Public Health, October, 1990.

FF. Breast Mortality Trends in Minnesota, J.M. Gould and E.J. Sternglass, Radiation and Public Health Project.

GG. *Occurrence of Cancer in Minnesota 1988-1992, Incidence, Mortality, Trends*; A Report to the Minnesota Legislature, March, 1995. Minnesota Cancer Surveillance System, Minnesota Department of Health, St. Paul, MN.

HH. Notes on the History of the "Two" Frontenac Towns, compiled by Alverna E. Miller, November 1995.

II. Letter, Land Use Management Department, Goodhue County Courthouse, September 15, 1995, Subject: New and Replacement Dwellings 1995.

JJ. Ministry Area Profile, Prepared for Christ Church, Frontenac, MN by Church Information and Development Services, July 21, 1992.

KK. Realty Listing for Farm on NSP's Site "O."

LL. Letter, Lake City Federal Savings and Loan, Gary E. Oeltjen, President, August 14, 1995.

MM. DNR 1994 Annual Report, Frontenac State Park. Harry R. Roberts, Manager.

NN. Resolutions of Communities Opposed to NSP's Proposed Alternative Nuclear Waste Storage Sites in Florence Township.

OO. Extract from NSP's April 1991 Application for a Certificate of Need for the Prairie Island Nuclear Waste Storage Facility.

PP. Letter, Goodhue County Office of Emergency Preparedness, signed by Gary A. Fried, Director, November 15, 1995.

QQ. A Partial, Unsorted, and Unannotated List of Indices Regarding the Legal Aspects of Environmental Issues.

RR. Letter from Mrs. Joan Marshman to the Chair, EQB, November 18, 1995.

SS. Draft Agreement Limiting the Period of Storage at a Florence Township Site.

TT. Prefiled Direct Testimony of Marvin Resnikoff, Ph.D. on Behalf of the Prairie Island Mdewakanton Sioux Indian Tribe, MPUC Docket No. E-002/CN-91-19.

UU. Task Force, Alternate Site Subcommittee Paper, Siting Criteria and Site Screening Plan for the Goodhue County Dry Cask Storage Alternate Site Proposal, October 25, 1995.

VV. Minnesota Statute §116C.76, Nuclear Waste Depository Release into Groundwater.

WW. Minnesota Rules part 4410.7900, Exploratory Drilling for the Disposal of High-Level Radioactive Waste.

XX. Minnesota Statute § 414.0325, Incorporation, Detachment, and Annexation.

YY. Mapping of Proposed Alternate Sites.

ZZ. Aerial Photographs of Proposed Alternate Sites.

AAA. Alternative Site Evaluation and Analysis.

Appendices A, C, D and E are included at the back of this report. The remaining appendices are voluminous, and are available for review as a separate set of volumes at the central public libraries in Red Wing, Lake City, Rochester, and Minneapolis, and also at the offices of the MEQB at 300 Centennial Building, 658 Cedar Street, St. Paul and at the Legislative Reference Library, 600 State Office Building, 100 Constitution Ave., St. Paul.

## Abbreviations and Definitions Used in This Report

| | |
|---|---|
| ALARA | As low as reasonably achievable — This is a requirement that the radiation levels from the facility be as low as reasonably achievable given the state of technology and the economics with respect to public health and societal interests. |
| ALJ | Administrative law judge — An independent official who conducts the public hearings required in the siting process and makes recommendations to the MEQB. |
| CFR | Code of Federal Regulations |
| DOE | U.S. Department of Energy |
| DPS | Minnesota Department of Public Service |
| DOT | U.S. Department of Transportation |
| EIA/EIS | Environmental impact assessment/statement — the environmental review document that will be prepared by the EQB for the dry cask storage project. |
| ENO | Extraordinary nuclear occurrence — A nuclear accident or release as defined by the Nuclear Regulatory Commission . |
| EQB/MEQB | Minnesota Environmental Quality Board |
| ICC | U.S. Interstate Commerce Commission |
| ISFSI | Independent Spent Fuel Storage Installation |
| MDH | Minnesota Department of Health |
| MEPA | Minnesota Environmental Policy Act — Minnesota Statute § 116D |
| MERA | Minnesota Environmental Rights Act — Minnesota Statute § 116B |
| mrem | millirem — 1/1000 of a rem |
| MRS | Monitored Retrievable Storage system — An interim storage complex proposed by the U.S. DOE until a high-level waste repository is operational. |
| NRC | U.S. Nuclear Regulatory Commission |
| NSP | Northern States Power Company |
| NWPA | Nuclear Waste Policy Act (U.S. Congress, 1972 and 1987) |
| PI | Prairie Island |
| PPSA | Power Plant Siting Act — Minnesota Statute § 116C.51- 116C.69 |
| PUC | Minnesota Public Utilities |
| rem | Roentgen equivalent man — A unit of biological radiation dosage for all forms of ionizing radiation that takes into account the amount and type of radiation absorbed. |
| RWM | Radioactive Waste Management Act — Minnesota Statute § 116C.705-116C.848 |
| TN40 | The specific type of storage cask being used at the Prairie Island Independent Spent Fuel Storage Installation. The supplier is Transnuclear, Inc. (TN) and the casks hold 40 spent fuel assemblies. |
| Weeping | When contaminants in the storage pool adsorb onto the hydrous metal oxide surface of the passivated stainless steel (casks) and are subsequently released during transportation, due to varying environmental factors, such as humidity, road salt, dirt, and acid rain. |

# MINNESOTA ENVIRONMENTAL QUALITY BOARD
## Site Advisory Task Force
## Goodhue County Dry Cask Storage Alternate Site Project

### 1.0 BACKGROUND

The Minnesota Environmental Quality Board (EQB) was required by the 1994 Legislature to adopt procedures, based on the existing Power Plant Siting Process, necessary to designate a site for an off-site dry cask storage facility. After public review of draft procedures, the EQB approved the Procedures for Dry Cask Storage Siting.

Adopted portions of the Power Plant Siting Process provided for public participation through a citizen's Site Advisory Task Force. This was the primary forum for public discussion of possible additional alternate sites and of the scope of an Environmental Impact Assessment, which would be prepared by the EQB later in the siting process.

On July 20, 1995, Northern States Power Company (NSP) filed with the EQB an Application for Certificate of Site Compatibility for the proposed Goodhue County Dry Cask Storage Facility. On August 17, 1995, the EQB accepted that application. At that time, the EQB began the siting process by conducting public information meetings and appointing a Site Advisory Task Force.

The EQB solicited nominations for the Task Force from the public through published notices and direct correspondence to every township, city, tribal, and county jurisdiction in Goodhue County. Twenty-three nominations were received by the EQB. From these nominations, 15 citizens were appointed to the Site Advisory Task Force. As additional sites were proposed in communities not represented on the Task Force, additional members were appointed by the EQB Chair.

In the order appointing the Site Advisory Task Force, the Chair of the EQB also provided a charge, discussed in the next section of this report. The order subsequently was amended to reflect the membership changes. In addition, at the request of the Task Force, the charge was amended to require the identification of a preferred site only if a majority of Task Force members consider such a recommendation to be justified by the information in the record of its deliberations.

The Task Force serves as voluntary advisors to the EQB, with staff support provided by the EQB staff.

## 2.0 TASK FORCE PURPOSE AND ORGANIZATION

### 2.1 THE CHARGE

On September 29, 1995, the Chair of the EQB charged (see Appendix A) the Site Advisory Task Force to:

- Review NSP's Application for a Certificate of Site Compatibility (Appendix B) and evaluate NSP's preferred and alternate sites and the environmental analysis.

- Determine if any additional sites should be considered, identify such sites, and conduct an environmental review of alternate sites consistent with the siting criteria provided in Minnesota Rule 4400.3310 (Appendix C, page 13).

- Identify significant environmental issues associated with the project design and site alternatives which will be addressed in the Environmental Impact Assessment (to be prepared by the EQB), guided by the "scoping" procedure provided in Minnesota Rule 4410.2100 (Appendix D).

- Identify a site preferred by the Task Force if a majority of the Task Force considers such a recommendation to be justified by the information in the record of its deliberations.

- Prepare a report of the Task Force, to be submitted to the Board and Administrative Law Judge during the public hearing by January 15, 1996.

The Task Force was reminded by the EQB Chair, to recognize its advisory role and the established policy of the state to locate nuclear waste storage facilities in an orderly manner compatible with environmental preservation and the efficient use of resources.

In addition, the Task Force recognizes its obligation to the communities it represents to articulate community values and perceptions which may not be an explicit part of the charge from the state of Minnesota.

In the conduct of its work, the Task Force was directed to encourage public and governmental participation at open meetings. Further direction was given to establish reasonable attendance expectations for its membership and to use the EQB staff to support the work of the Task Force.

### 2.2 Definition of the Term "Environment"

In accomplishing the work needed to satisfy this charge, the Task Force accepts the following Webster's Dictionary definitions of the term "environment":

*The aggregate of social and cultural conditions that influence the life of an individual or the community;*

*The circumstances or conditions by which one is surrounded;*

*The complex of climatic, edaphic, and biotic factors that act upon an organism or an ecological community and ultimately determine its form or survival.*

## 2.3 Task Force Organization

### 2.3.1 Membership

Initially, 15 citizens from the impacted communities were nominated and agreed to serve on the Task Force. Red Wing, Lake City, Frontenac, rural Florence Township, and the Prairie Island Mdewakanton Dakota Community are represented. As concerned citizens proposed alternate sites in other areas of Goodhue County, representation on the Task Force was offered to Welch, Stanton, and Hay Creek Townships. Members' names and communities represented are at Appendix A.

### 2.3.2 Subcommittee Structure

Initially, four subcommittees were established to provide proper focus on the charge to the Task Force (Appendix E) and to facilitate appropriate management:

- Regulatory Review Subcommittee
- Application Review Subcommittee
- Alternate Site Subcommittee
- Environmental Review Subcommittee

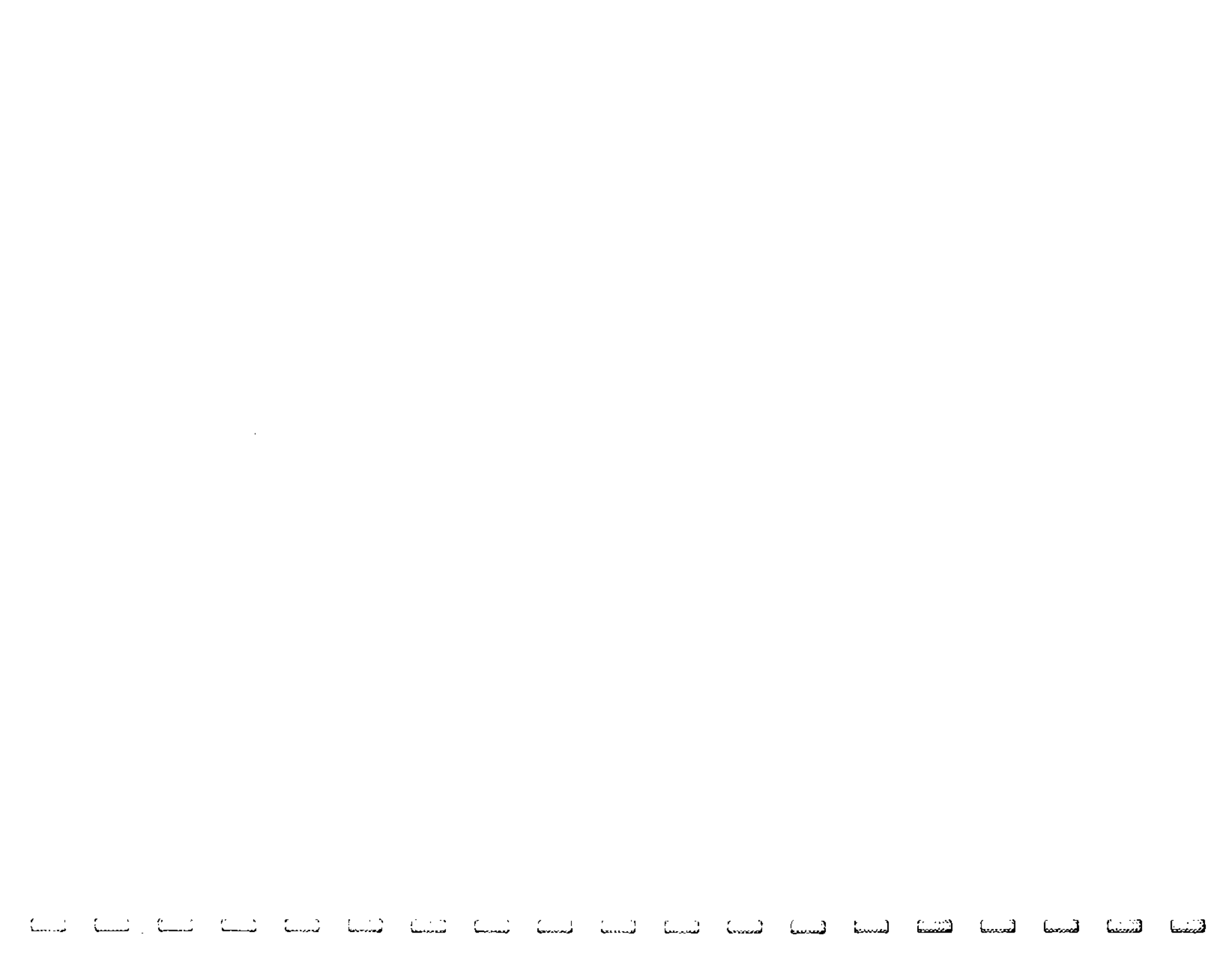
On October 28, 1995, the Application Review and Environmental Review Subcommittees were merged to facilitate further analyses of the issues to be presented to the EQB.

### 2.3.3 Operating Procedures

The operating procedures at Appendix E were presented to the public for comment at the first meeting of the Task Force on September 14, 1995 and, with modification, were approved by unanimous vote of the Task Force. The Task Force operating procedures were mirrored after those of the EQB. They were amended and approved by the Task Force on November 11, 1995, to accommodate additional members to the Task Force and to add procedures for review of the Task Force report.

**Task Force Meeting, Prairie Island Tribal Community Center, October 28, 1995.**

**Public Attending October 28, 1995 Task Force Meeting at Prairie Island Tribal Community Center**



## 3.0 U.S. Policy on Radioactive Waste Disposal

# SUMMARY

### An Historical Perspective

Passage of the Nuclear Waste Policy Act (NWPA) in 1972 required the Department of Energy (DOE) to construct geologic repositories for radioactive nuclear fuel and high-level nuclear waste. The search for potential sites started in 1976 under the National Waste Terminal Storage Program. From 1976 to 1987 several potential repositories were examined, including sites in Minnesota.

In 1987 Congress amended the NWPA and directed the DOE to:

- construct a temporary storage facility for spent nuclear fuel,
- concentrate efforts for a permanent facility at Yucca Mountain, Nevada, and
- postpone efforts to site a permanent repository in the Midwest or East

However, in 1994 the DOE said it would not construct a temporary storage facility for spent nuclear fuel. With no near-term storage solution, and with storage pools in nuclear plants near capacity, utilities started moving spent fuel into dry storage on-site. NSP built the on-site storage facility at Prairie Island.

Also in 1994, the federal government said it did not have a statutory obligation to accept fuel in 1998 if no site was available. Two lawsuits were filed against the DOE - one by 14 utilities, and one by 27 public agencies in 20 states. Yucca Mountain, should it ever open, essentially will be filled to capacity the day it opens.

Meanwhile, utilities (including Northern States Power Co.) started negotiating with the Mescalero Apache tribe in New Mexico to open a private monitored retrievable storage (MRS) facility on tribal land. The tribe voted in 1995 to proceed, and expects to apply to the Nuclear Regulatory Commission for a license in 1996.

### The Question of Permanency

The Site Advisory Task Force tried to determine how long cask-stored nuclear fuel would remain at an off-site storage facility. NSP's application contains statement of intent, but no assurance of when spent fuel will be moved. Siting considerations for temporary storage, of course, are different than siting considerations for a permanent facility.

The Task Force examined comments from Administrative Law Judge, Allan W. Klein. Judge Klein, regarding NSP's 1991 application for a Certificate of Need for a dry cask facility on Prairie Island, said: "*Unfortunately, the past delays in federal siting efforts raise questions about whether the dry cask storage will be temporary or will end up being permanent.*" Judge Klein also said "*If we knew the casks would be gone in 25 years, then it would be appropriate to grant the Certificate. But the record leads to the opposite conclusion: that the casks will not be gone in 25 years and may never leave...*"

The Minnesota Court of Appeals referencing dry cask storage on Prairie Island said "*...the proposed facility is properly classified as one in which waste is permanently stored...*"

Given these comments and the fact that the federal government has no near-term solution for a permanent storage facility, it seems prudent to treat any proposed alternate site as a permanent facility.

## 3.1 BACKGROUND

A brief discussion of U.S. policy regarding nuclear waste disposal is necessary to put the analysis of the current problem of nuclear waste disposal in Minnesota into proper perspective.

The federal government's official role in the non-military use of nuclear power began in 1946 with the passage of the Atomic Energy Act. The act established the Atomic Energy Commission (AEC) to regulate the application of nuclear technologies for both military and commercial purposes. The 1954 revisions of the act encouraged commercial development of nuclear power.

In 1974, Congress dissolved the AEC and created two separate agencies to take over the commission's responsibilities. Regulation of the nuclear industry was turned over to the U.S. Nuclear Regulatory Commission (NRC). The Energy Research and Development Administration was charged with promoting the development of the nuclear industry. In 1976, the two agencies split the responsibility for developing the technology for a geologic repository under the National Waste Terminal Storage Program. The search started for potential repository sites.

## 3.2 Nuclear Waste Policy in the 1980s and 1990s

The Nuclear Waste Policy Act (NWPA) of 1982 required the Department of Energy (DOE) to site, construct, and operate geologic repositories for the disposal of radioactive nuclear fuel and high-level nuclear waste in the United States. (The October 1995 draft Handbook of High-Level Radioactive Waste Transportation prepared by the Council of State Governments (Appendix F) lists major provisions of the act and provides an excellent explanation of the background leading up to current nuclear waste disposal problems in the United States.)

In 1987, the NWPA was amended. Congress directed the DOE to concentrate its site characterization activities at Yucca Mountain in Nevada and moved the scheduled date for opening a repository from 1998 to 2003. (A 1989 reassessment of the Civilian Radioactive Waste Management Program pushed the opening date to 2010.) Further, after preliminary surveys of many sites (including sites in Minnesota), consideration of a second repository in the Midwest or East was postponed. Lastly, the DOE was authorized to site, construct, and operate a temporary storage facility for nuclear fuel, called a monitored retrievable storage (MRS) facility. The amendment also created a Nuclear Waste Negotiator independent of the DOE to expedite the siting process. This person was charged with identifying a voluntary host community for a MRS facility. The Negotiator's Office closed in January 1995 without having identified a suitable storage site for nuclear waste.

In early 1994, the DOE decided not to pursue off-site temporary storage as an integral component of their waste management system. Instead, they began to examine options for integrating multi-purpose canisters for storage, transportation, and disposal into the Civilian Radioactive Waste Management System.

NSP was impacted by the DOE's decision not to develop an interim storage site: the company undoubtedly had relied on the federal government to remove high-level radioactive nuclear fuel from its storage pool. Five utilities had begun to store spent nuclear fuel on-site in

dry storage facilities. NSP built the on-site storage facility at Prairie Island and became the sixth utility.

In May 1994, the federal government declared that it did not have a statutory obligation to accept fuel in 1998 in the absence of an operating repository or storage facility. The DOE asked for public comment on this issue. Ninety percent of public responses argued that the DOE had the responsibility to accept spent nuclear fuel for storage beginning in 1998. Despite this public declaration, the DOE confirmed the federal government's preliminary view on May 3, 1995. The DOE was hit immediately by two lawsuits - one from 14 utilities, including NSP, and the other by 27 public agencies responsible for overseeing commercial nuclear power in 20 states.

Meanwhile, in late 1993, NSP and the Mescalero Apache tribe in New Mexico began discussing the possibility of constructing and operating a private interim MRS facility on tribal lands. The tribe expects to apply to the NRC for a license in 1996 and begin operating the facility in 2002. As a sovereign nation, the tribe has the right to construct and operate the facility. New Mexico state legislators and members of the congressional delegation have voiced their strong opposition to siting a high-level radioactive nuclear waste storage site anywhere in the state. In addition, state officials also have raised strong objections about the transportation of such waste through their state.

### 3.3 Yucca Mountain

The status of the Yucca Mountain Project is contained in a 1994 U.S. Government Accounting Office Report to Congressional Requesters entitled "Nuclear Waste Operation of Monitored Retrievable Storage Facility (MRS) is unlikely by 1998." (Appendix G.)

The Task Force finds that it is inconceivable that the Yucca Mountain Project will be a near-term solution to waste storage problems. As such, the issue of permanency is raised. Additionally, as time passes, nuclear waste continues to accumulate. Yucca Mountain, should it ever open, essentially will be filled to its capacity the day it opens. The interim facility has the same uncertain guarantee of being temporary as the guarantee that a permanent repository will be built. There are other solutions to this problem that should be studied before off-site storage should be considered.

The search for these solutions is funded under the Federal Nuclear Waste Policy Act of 1982. This act requires all nuclear utilities to contribute 0.1 cents for every Kilowatt-hour of nuclear-generated electricity produced into a national trust fund to pay for the disposal of nuclear waste. This fund pays for Yucca Mountain work and any other work that may lead to a solution to the nuclear waste problem. Nuclear utilities, of course, pass this expense on to their ratepayers.

Approximately $11 billion has been paid into the fund. It is anticipated that approximately $22 billion will be accrued during the life of the fund. A draft report under review by DOE concludes that the total life-cycle cost of commercial waste disposal will be at least $34.6 billion, which leaves a shortfall of $12.6 billion. A 1995 independent management and financial review of the Yucca Mountain project concluded that the "nuclear waste fund, as currently defined, is inadequate." If so, such an inadequacy leaves no funding for other solutions, and Yucca Mountain becomes by default the only option being pursued by the federal government.

## 3.4 The Permanency Issue

The lack of progress by the federal government together with the uncertainties associated with the Mescalero project and interstate transportation of high-level nuclear waste raise questions of how long an interim off-site nuclear waste storage facility will be needed. Siting considerations for storage operations for 20 years is an entirely different problem than that of scoping siting issues for an indefinite period.

### 3.4.1 The Common Sense Approach

The permanency issue is defined simply as how long the cask-stored, high-level radioactive nuclear waste will remain in Minnesota. NSP's application provides **statements of intent, not assurances,** that the dry casks will be moved to a federal repository or a private interim storage facility by the year 2014. Indeed, based on the federal government's past performance, NSP is unable to give any such assurance. There is an unacceptable risk that the federal government may never find a national repository. There is also an unacceptable risk that the federal government may "buy out" NSP and establish a national repository in Minnesota — the only state to permit, and in fact legislate, off-site storage. Thus, the Task Force is forced to attempt to scope the issues associated with off-site storage of nuclear waste of an unknown duration.

### 3.4.2 The Legal Interpretation

3.4.2.1 On April 10, 1992, the Administrative Law Judge, Allan W. Klein, reached 12 conclusions regarding NSP's 1991 application for a Certificate of Need for the construction of a nuclear waste storage facility at Prairie Island. Conclusions pertinent to the Task Force's charge from the EQB are as follows:

4. ***It is unknown when, if ever, the DOE may remove PI's spent fuel.***

*The proposed ISFSI constitutes a 'radioactive waste management facility' with the meaning of Minn. Stat. §116C.72, thus requiring the authorization of the Minnesota Legislature prior to its construction...* [emphasis added]

7. *Dry cask storage does not result in pollution, impairment or destruction, of natural resources, nor does it otherwise materially adversely affect the environment so as to trigger Minn. Stat. §116B.09.*

8. *Dry cask storage using TN-40 casks appears to be a reasonable, safe, and cost-effective means of storing high-level radioactive waste* ***on a temporary basis***... [emphasis added]

10. *The need for dry cask storage cannot be immediately and totally replaced by conservation or by generating facilities using renewable resources. However, using a combination of alternatives, including a 'stretch-out' of PI's operating life, the state's energy needs can be reasonably met, but at a cost higher than a* ***temporary*** *ISFSI.* [emphasis added]

Judge Klein offered three recommendations. The two which apply to the charge faced by the Task Force are:

1. *That the [Public Utilities] Commission DENY or NOT GRANT the Application for a Certificate of Need until either a) the Legislature authorizes the project, or b) until there is a reasonable certainty that the spent fuel proposed to be stored in the dry casks will be removed from the state within a reasonable period of time.*

2. *That if either of the two previously listed events occur, the Commission should GRANT the Certificate."*

In a memorandum of his findings, Judge Klein made the following comments, *inter alia*, to his findings and conclusions:

1. *If we knew that the dry cask storage would be temporary, then it is a reasonably safe and cost effective way to deal with the storage problem.... In particular, the radiation from the casks would be negligible, and would not pose a health risk to any person.*

2. *Unfortunately, the past delays in federal siting efforts raise questions about whether the dry cask storage will be temporary or will end up being permanent*

3. *There has not been any substantial attempt to evaluate the Prairie Island storage site as a permanent location, nor has there been any comparison of this site with other sites in the state to determine which would be the preferable location for a permanent storage facility. The same is true for the method of storage dry cask storage has not been evaluated as a permanent method.*

4. ***The likelihood that the dry cask storage would become permanent is so great that it is appropriate to require legislative authorization** if the project must go forward immediately.... Once the casks are in place, the path of least resistance is to leave them there indefinitely.* [emphasis added]

In his memorandum, Judge Klein also stated: *II....If we knew the casks would be gone in 25 years, then it would be appropriate to grant the Certificate. But the record leads to the opposite conclusion: that **the casks will not be gone in 25 years and may never leave Prairie Island.** Under those circumstances, the casks can not be used until the circumstances change or until the Legislature authorizes them.* [emphasis added]

3.4.4.2 The Minnesota Public Utilities Commission rejected the Administrative Law Judge's recommendations. The case went before the Minnesota Court of Appeals in 1992. The following decision is contained in the State of Minnesota Court of Appeals Rulings, C1-92-2314/2315/ 2321:

*The commission erred in determining that NSP need not obtain express legislative authorization for its proposed facility. The commission properly determined that the proposed storage facility is in the public interest. In light of our determination that **the proposed facility is properly classified as one in which waste is permanently stored**, a supplemental EIS may be necessary. The commission should determine the appropriate standards under the Minnesota Environmental Rights Act and the Minnesota Environmental Policy Act and apply those standards to the proposed facility.* [emphasis added]

**Under the laws of the State of Minnesota, the proposed alternate site in Goodhue County is a permanent site.** In July 1993, the Minnesota Supreme Court affirmed the State Court of Appeals decision that the Prairie Island Storage Site is permanent. The federal government, as of this date, has no solution for a permanent storage facility. There are only "plans in the making" for an interim storage facility of the federal government and private industry. There is no known date when any waste will move anywhere and the possibility is getting more remote with the passage of time.

**Therefore, it seems prudent, for both legal and political, reasons to treat a proposed alternate site in Goodhue County as a permanent site.**

## 4.0 Complementary Activities and a Regulatory Review

# SUMMARY

### The Legislative Outcome

In 1994, the Minnesota House of Representative voted 104 to 30 for a compromise resolution to eliminate the dry cask storage issue and set in motion a transition toward renewable resources. In the Senate Resource Committee, the dry cask storage bill had been defeated. However, lobbying by nuclear energy proponents resulted in the Committee reversing itself and supporting dry cask storage. The compromise resolution was defeated.

The dry cask bill requires NSP to attempt to site a dry cask storage facility in Goodhue County. The facility will be the only site in the U.S. where spent nuclear fuel is stored in dry casks away from the reactor. Many believe this requirement was passed based on the belief that those who benefitted from NSP should cope with the nuclear waste.

### A Web of Laws, Rules and Regulations

The 1994 Legislature mandated the Environmental Quality Board (EQB) to adopt rules from the Power Plant Siting Act to site the off-site dry cask facility.

In July of 1995, NSP filed an Application for Certificate of Site Compatibility with the EQB. NSP's application did not contain a Certificate of Need, which is required by the Public Utilities Commission (PUC) when siting a radioactive waste storage facility. A Certificate of Need provides details about land use, wetlands, historic sites, etc. within five miles of the proposed site. In addition, it details the distribution of people within 50 miles.

The Department of Public Service noted that a Certificate of Need was not included with the application. The PUC responded by saying the Legislature implied that the Prairie Island Certificate should apply to the alternate site.

NSP applied the Prairie Island Certificate of Need (which details land use, historic sites, etc. within five miles of Prairie Island) to the proposed sites in Florence Township 16 miles away. The Prairie Island Certificate of Need also contains site specific information.

The PUC made no formal decision on the Certificate of Need requirement. The EQB accepted NSP's application.

Several other laws, rules and regulations impact this process.

In addition, Minnesota's Sustainable Development Initiative (SDI) offers decision-making principles and recommendations for sustaining Minnesota's economy, ecosystems, communities and future quality of life. While SDI does not provide a template through which off-site nuclear waste storage can be examined, it does provide a framework of principles on which such a template could be constructed.

## 4.1 INTRODUCTION

While the federal government was pinned to the floor by the problem of a national permanent repository, the Minnesota Legislature was forced to address the issue of how to solve NSP's nuclear waste storage requirements. The Task Force reviewed the political and regulatory activities leading to the legislation that directed a proposed interim nuclear waste storage facility be sited in Goodhue County. The purpose of this review was to determine the statutory and technical background that led to the decision. With this knowledge, the Task Force more easily could identify and analyze the issues, concerns, and possible violations of statutes, regulations and rules relating to the proposed siting of nuclear waste in Goodhue County or elsewhere in Minnesota (see Task Force Regulatory Review Subcommittee final report at Appendix H).

## 4.2 A Short Version of the Legislative Outcome

The Minnesota House of Representatives voted 104 to 30 for a compromise resolution offered by Representative Willard Munger to eliminate the storage site issue and set in motion an orderly transition toward the efficient use of Minnesota's renewable energy resources. At that time, the dry cask storage bill, championed by NSP, had been killed in the Senate Resource Committee. After very effective lobbying by NSP and other proponents of nuclear energy, this committee reversed itself and supported the dry cask bill. Representative Munger's compromise was then defeated. With hindsight, many now believe that the bill requiring dry cask storage in Goodhue County was passed because of the belief that those who benefitted — monetarily or otherwise from NSP's nuclear power plant — also should cope with the nuclear waste problem the plant generated. (Ref: *inter alia,* Alden McCutchan letter dated September 19, 1995, to the Chair, Site Advisory Task Force; Appendix I, Citizen Comments to the Task Force.)

## 4.3 Review of Minnesota Laws, Rules and Regulations Applicable to the Proposed Siting of Nuclear Waste in Goodhue County

### 4.3.1 Siting Rules and Regulations and the Certificate of Need

The siting rules and regulations used to site this facility and the Certificate of Need issue are very complicated. A web of statutes and regulations are used to determine the necessity of a power generating facility, which require:

- establishing need and weighing alternatives;
- establishing requirements for an application under these statutes; and
- finding a site for a facility in an orderly process that allows for public participation and a balance of environmental and economic concerns.

We critically examined the intent and procedures developed for this particular siting process. We found there have been many actions by the Legislature, Public Utilities Commission, and EQB that are unprecedented, seemingly procedurally irregular, and subject to challenge.

4.3.1.1 Power Plant Siting Act: Minnesota Statute §116C.51-54; 56-69 (Appendix C, pages 1-8). The Legislature specified that the Power Plant Siting Act (PPSA) would be used to site the dry cask storage facility. The Legislature further mandated that the EQB was to review the PPSA and the rules adopted under that act and to adopt the rules that it determined necessary to site the facility, and expressly mandated that opportunity for public participation be provided.

4.3.1.2 Rules Adopted from the Power Plant Siting Act. The rules adopted directly under the PPSA are Minnesota Rules 4400 (Appendix C, pages 9-19). In October 1994, the EQB established that the facility was to be sited using only these rules. The purpose of these rules, as that of the PPSA, is specified in Minnesota Rule 4400.0300: that is, to site facilities "in an orderly manner compatible with environmental preservation and the efficient use of resources." (An analytical review by the Task Force of the development of siting rules and a record of the rules adoption by the EQB are at Appendix J.)

The Legislature further required the EQB to issue a Certificate of Site Comparability [sic]. The EQB must take action on NSP's application for such within 18 months of its acceptance on August 17, 1995.

Minnesota Rules 4400.2600, Subp. 1, (I) (Appendix C, page 11) requires that all applications contain "the Certificate of Need if available, or an acknowledgment of the receipt of a substantially complete Certificate of Need application by the Public Utilities Commission...."

The Certificate of Need statute is Minnesota Statute §216B.243 (Appendix K). The rules governing the contents of applications for certificates of need for a Radioactive Waste Facility are found under the PUC's Large Energy Facilities process, Minnesota Rule 7855 (Appendix L).

The Task Force found that NSP's application does not contain a Certificate of Need for an away-from-the-reactor alternate site in Goodhue County, nor is there any acknowledgment by the PUC that a substantially complete application has been received from NSP. This was noted by the Department of Public Service (DPS) in its initial comments as rendering NSP's application incomplete. The DPS comment regarding EQB acceptance of NSP's application noted that a Certificate of Need was required, that there was no Certificate of Need, and that NSP's application should not be accepted.

The PUC responded to this deficiency by saying that the legislation implied that the Certificate of Need for Prairie Island (Appendix M) should apply to an alternate site in Goodhue County. The PUC Executive Secretary also declared that because the full board could not address this issue prior to the EQB meeting, the application should be accepted on the above basis. Although there was **no formal decision** as to the Certificate of Need requirement, NSP's application was accepted when NSP applied the Certificate of Need for Prairie Island, as ratified and modified by the 1994 law, to the off-site storage proposal (Ch 641, S.F. No. 1706, Article 1, Section 1 (Appendix N)).

Had NSP been required to apply for a Certificate of Need under PUC's Chapter 7855, the application would have included details regarding issues such as land use; impacted lakes, streams, wetlands, etc.; trunk highways, airports, and air traffic corridors; state owned areas, national historic sites and landmarks (including sites listed on the National Register of Historic Places); and recreational, cultural, historical, or scientific areas, all within five miles of alternate sites. Additionally, NSP

would have had to estimate the total population within 50 miles of its sites and produce a map showing the distribution of population within 50 miles of its sites. This information is reasonably available to NSP and certainly applicable to the siting of proposed nuclear waste storage facilities.

4.3.1.3 Certificate of Need, Minnesota Statute §216B.243 (Appendix K). The statute mandates that no large energy facility (read "nuclear waste storage site") shall be sited or constructed in Minnesota without the issuance of a Certificate of Need. The Certificate of Need also requires hearings and public notice.

The siting of a large energy facility is described in the statute as a dual-tracked process. On one track, an initial detailed application is made to the PUC to determine the need for the facility (hence, "Certificate of Need"), and to balance that need against environmental concerns and possible alternatives. The Certificate of Need process has a six-month timetable from the time an application is received until the time a decision is made.

On a parallel track, the EQB is directed to review the environmental issues associated with the proposed facility. Those statutes require development of criteria and standards for site selection through public participation. These criteria and standards are used to compile an inventory of potential sites. An environmental assessment worksheet (EAW) or an environmental impact statement (EIS) is developed by this review process. The EQB bases its review on a second, less detailed, application by the concerned public utility.

These two processes may be completed on varying timetables, but both the Certificate of Need and the EAW/EIS must be completed prior to the EQB's issuance of a site compatibility.

**The Task Force finds that no Certificate of Need application has been completed for the proposed Goodhue County alternate site.** The Certificate of Need application for Prairie Island contained specific information pertaining only to that site. For example, the original Certificate of Need had many areas that are dependent on the use of TN-40 casks which NSP has stated will not be used at the Goodhue County off-site facility. The Certificate of Need also contained many sections that are dependent on the physical characteristics of the Prairie Island site, which are different from NSP's proposed away from the reactor alternate sites. These sections are not transferrable. Notice was provided and hearings were held based on the application for a site at Prairie Island. In that application, alternate sites were specifically rejected and it was unforeseeable that any other site would be affected. An option, therefore, is to require NSP to submit a totally new Certificate of Need application for the proposed site in Goodhue County in addition to the one in effect for Prairie Island. We believe that the intent of the Legislature was not to circumvent standard procedures for siting high-level radioactive nuclear waste in Minnesota.

4.3.1.4 Discussion of the purpose of the criteria for assessment of need contained in Chapter 7855, Section 7855.0100, states that "[i]n the case of an application for a Certificate of Need for an expansion of a nuclear waste storage or disposal facility serving an existing large electric generating facility, the commission shall not make a decision that could reasonably be expected to result in a forced shutdown of the generating facility."

This rule, however, is preempted by the Minnesota Environmental Policy Act (MEPA) (Appendix O), Minnesota Statute §116D *et seq* (discussed on pp. 15-16). *Two cases — No Power Line, Inc v. Minnesota Environmental Quality Council*, 262 N.W. 2d 312 (Minn

1977); and *People for Environmental Enlightenment and Responsibility (PEER) v. Minnesota Environmental Quality Council*, 266 N.W. 2d 858 (Minn 1978) — hold that environmental issues are primary and that MERA provides the right of each citizen to bring a suit "to force an administrative agency...to consider environmental values that it might have overlooked." NSP's application to the EQB does not include information required by Chapter 7855: in the end, the EQB will not be able to assert that all environmental factors were considered in their evaluation of NSP's application. Hence, the possibility exists of a lawsuit under MERA that might delay NSP's attempts to rectify their high-level radioactive spent nuclear fuel storage crisis.

The Task Force recognizes that (1) NSP cannot provide the information required by Minnesota Rule 7855 regarding cask technology because the casks do not exist, (2) the specifications of the cask to be used by NSP do not exist, and (3) at this time, there is no vendor. NSP expects to identify a vendor in 1996. The Nuclear Regulatory Commission (NRC) approved the first dual-purpose cask, developed by NAC Services, in August 1995. The NRC states that this cask is suitable for storing and transporting high-level radioactive spent nuclear fuel. Further, the NRC has received two applications for dual-purpose canister designs. Review of one application may be completed by March 1996. The other application review is targeted for completion in March 1997 (see Appendix P). The EIA should address at what point NSP should be required to provide information regarding the cask they intend to use.

4.3.2 Radioactive Waste Management Act, §116C.705 through 116C.848 (Appendix Q)

In the early 1980s, the federal government surveyed numerous sites in Minnesota that would be candidates for a national repository similar to the one now proposed at Yucca Mountain in Nevada. This may have prompted the Minnesota Legislature to enact the Radioactive Waste Management Act. The proposed sites in Goodhue County also fall under this statute; therefore, NSP's application, the EIA, and the Certificate of Need should also meet these provisions.

4.3.3 MERA, Minnesota Statute §116B.01 *et seq., and* MEPA, Minnesota Statute §116D.01 *et seq.*

MERA and MEPA also apply to NSP's application. The Minnesota Environmental Rights Act (MERA) (Appendix R) provides in part:

In any such administrative, licensing, or other similar proceedings, the agency shall consider the alleged impairment, pollution, or destruction of the air, water, land, or other natural resources located within the state and no conduct shall be authorized or approved which does, or is likely to have such effect so long as there is a feasible and prudent alternative consistent with the reasonable requirements of the public health, safety, and welfare and the state's paramount concern for the protection of its air, water, land, and other natural resources from pollution, impairment, or destruction. Economic considerations alone shall not justify such conduct."

In similar language, the Minnesota Environmental Policy Act (MEPA) (Appendix O) provides:

*No state action significantly affecting the quality of the environment shall be allowed, nor shall any permit for natural resources management and development be granted, where such action or permit has caused or is likely to cause pollution, impairment, or destruction of the air, water, land or other*

*natural resources located within the state, so long as there is a feasible and prudent alternative consistent with the reasonable requirements of the public health, safety, and welfare and the state's paramount concern for the protection of its air, water, land, and other natural resources from pollution, impairment, or destruction. Economic considerations alone shall not justify such conduct.*

Minnesota Statute §116B.02, subd. 5 defines "pollution, impairment or destruction" as conduct *[w]hich violates, or is likely to violate, any environmental quality standard, limitation, rule, order, license, stipulation agreement, or permit of the state... or any conduct which materially adversely affects or is likely to materially adversely affect the environment.*

The 1994 legislation limited NSP's nuclear waste siting alternatives to "Goodhue County." NSP further limited its alternatives to sites within one mile of existing railroad lines and its site selection process in this regard was "arbitrarily designated." Given MEPA and MERA requirements and the constraints imposed by the Legislature, the EQB's EIA must determine if all reasonable alternatives have been properly investigated. Further, the EQB should make its determinations within MERA and MEPA provisions, and determine if the EQB, other agencies or NSP actions thus far have violated the provisions of MEPA and MERA statutes.

4.3.4 Citizen Concerns

4.3.4.1 Citizens express a high degree of concern about NSP's application. They perceive potential dangers to Minnesota, regardless of the community or county in which the proposed nuclear waste storage facility may be placed. They cannot understand why their representatives in the Legislature mandated the placement within Minnesota's borders of the first commercial off-site high-level radioactive waste storage facility in the nation.

4.3.4.2 With regard to the use of the Power Plant Siting Act, concerned citizens make a strong argument that the goal of the PPSA is to site power plants with ready access to the natural and human resources necessary for the production of energy. These resources include water, air, and, in some cases, lands located in areas adjacent to population centers. Nuclear waste storage facilities, they argue, should be isolated from these same resources in order to protect the health and safety of humans and the ecosystem upon which they depend.

Thus, many citizens do not believe that the PPSA is the proper siting authority.

## 4.4 The Sustainable Development Initiative (SDI)

In 1993, the Governor of Minnesota asked 105 citizens to redefine how we protect the environment and encourage economic development. They believed then, and still do, that we can no longer afford the contentious battles that have sprung up out of these often competing interests. Guided by citizen concerns and suggestions, the EQB developed a strategic plan for sustainable development, *Challenges for a Sustainable Minnesota* (Appendix S). This document offers a vision, decision-making principles, and recommendations for achieving SDI's goals of sustaining Minnesota's economy, ecosystems, communities, and future quality of life.

SDI has developed a set of sustainable development principles which relate directly to the problem of creating off-site nuclear waste storage facilities in Minnesota. SDI states that *"to be truly sustainable over the long-term, development activities must:*

- *Create no more pollution and waste than the environment can recycle or render harmless.*

- *Use renewable sources, such as water, timber and fish, no faster than they can regenerate.*

- *Use finite resources, such as oil and minerals, no faster than renewable substitutes can be developed.*

- *Increase the number and quality of jobs to improve the quality of life.*

- *Use land -- a finite resource that has no substitute -- in ways that meet people's diverse needs, conserve financial and natural resources, and preserve its ability to meet future needs.*

- *Take into account the impact of today's decisions on future generations.*

The Task Force believes that the outcome of the nuclear waste storage facility issue must contribute to the principles of sustainable development by maintaining and enhancing economic opportunity and community well-being while protecting and restoring the natural environment upon which quality of life depends. The vision of the Minnesota Sustainable Development Initiative as shown in Figure 1 is enthusiastically supported.

**Figure 1. Vision of the Minnesota Sustainable Development Initiative**

We Minnesotans make commitments and choices to preserve the options future generations will need to secure the quality of life we now enjoy.

• We see sustainable development as a positive, fundamental change in the way we define social progress, do business and protect the environment.

• We view the health of our natural environment, the strength of our community and our economic security as interdependent.

• We maintain our quality of life through sustainable use of energy and natural resources, recognizing that population growth, resource consumption and lifestyle choices determine the options we leave for future generations.

• Our communities are places where all citizens enjoy rich opportunities in education, employment, involvement in community and appreciation of the environment.

• Our economy is healthy, diversified, globally competitive and in harmony with Minnesota's ecosystems; it provides all citizens ample opportunity for a fulfilling life.

• Our natural environment is biologically and ecologically diverse and able to provide the resource benefits, products and services needed for the indefinite future.

• We continually work to change our political and economic systems so that they consistently reward economically efficient, socially beneficial and environmentally sustainable behavior.

## 4.5 Scoping Tools -- Criteria Grid and Timeline

### 4.5.1 The Criteria Grid

The Task Force has developed a matrix tool to facilitate the scoping of the issues associated with the complexity of regulations and criteria that should be considered by the EQB. When completed, the matrix will match the rules and regulations of the multitude of agencies involved in the storage of nuclear waste with the explicit characteristics of the sites proposed by the Task Force and NSP. (See Figure 2: note that the left-hand side lists the criteria or characteristics of a given proposed site that should be considered by an approval authority. Across the top are listed the agencies that have rules and laws governing dry cask storage. The agencies are listed twice: once for short-term storage limits, once for long-term storage limits. If a characteristic such as proximity to residences would drop a site from consideration in the short-term by one of the agencies, an "x" would be placed in the intersection of the agency and characteristic. When completed, the matrix would enable an analyst to focus on the real issues and lead to the formation of viable conclusions and recommendations.)

### 4.5.2 Timeline

The Task Force recommends the development of a timeline along which items of "impact" such as cost, transportation, and health and safety issues may be evaluated creatively and constructively. The length of the timeline for measuring economic, human, and natural consequences should be at least 150 years. The Task Force believes such a tool will make a real contribution to concerns about nuclear waste storage in Minnesota.

**Figure 2. The Criteria Grid**

| Candidate Site | Temporary Storage (Safe to 40 Years) | Permanent Storage (Safe to 1,000 Years) |
|---|---|---|
| *("X" = consider the site unsuitable)* | PUC NRC MEQB RMWA MEPA | PUC NRC MEQB RMWA MEPA |
| **Characteristics that eliminate the site:** | | |
| Floodplain | | |
| Karst/Other Unstable Bedrock | | |
| Aquifers/Surface Water Movement | | |
| Steep Slopes/Other Topography | | |
| Soil Texture | | |
| Proximity to: Residences | | |
| Streams | | |
| Endangered Species | | |
| Wilderness/Wildlife | | |
| Parks and Trails | | |
| Burial Grounds | | |
| Archeological Site | | |
| **Characteristics that are absent or inadequate:** | | |
| Railroad Access | | |
| Highway Access | | |
| Security Buffer Zone | | |
| Cask Life-Span versus Duration of Storage | | |
| Emergency Response Capabilities | | |

## 5.0 Issues for the EQB to Address

# SUMMARY

### Charge from the EQB Chair

The EQB Chair charged the Task Force to: *"review NSP's Application for a Certificate of the site Compatibility"* and "identify significant environmental issues, as well as the question of permanency of storage." Of these, the following are most critical:

### Public Safety

- A complete risk assessment should be completed and the results thoroughly analyzed. NSP's Application does not contain a risk analysis to support the conclusion that off-site storage *"has very little, if any, potential for operation or accidental release"* of radiation.
- The EQB's Environmental Impact Assessment should address emergency response capabilities to the fullest degree. It needs to be determined what resources are needed, where they will be located, how they will be managed, how much they will cost, and how they will be phased out. Florence Township (in which both proposed sites are located) has no resident emergency response capabilities.
- The terrorist threat is real and needs to be examined (as evidenced by the train derailment in Arizona and the bombing in Oklahoma City). A worst case scenario should be defined, and the impacts of a successful terrorist attack should be assessed.
- To approve an alternate off-site storage facility without testing dry-casks to failure is fraught with danger.

### Public Health

- The effects of long-term chronic exposure to a relatively small dosage of radiation such as that emitted from a dry cask needs to be thoroughly examined.
- Existing models and methodologies used by public health officials to determine the effects of radiation are not yet proven to be effective indicators of health consequences.
- The risks to public health need to be assessed against any benefit that might be derived.
- An initial health assessment of the surrounding area of an alternate site should be required prior to the construction of any off-site building or transfer of casks.

### Permanency

- Environmental, safety, health and socioeconomic issues related to long-term or permanent storage are different from the issues associated with 20-40 year storage. Permanency impacts not only our generation, but generations far into the future.
- The EIA must address those risks and the many issues related to the more permanent storage of high level radioactive waste in Goodhue County and the state of Minnesota.
- Most importantly, however, are the issues relating to people as opposed to issues relating to economics. The majority of the people of Florence Township perceive off-site storage of nuclear waste as a real threat to their continuing quality of life.

## 5.1 INTRODUCTION

The Task Force has been charged to review NSP's application, evaluate its preferred and alternate sites, and evaluate its environmental analysis. Additionally, we have been tasked to identify significant environmental issues associated with NSP's project design and site alternatives which should be addressed in EQB's environmental impact assessment. This section identifies the general categories of issues that need to be addressed, whether evaluating NSP's proposed sites or developing an EIA. Within each category, we have included the results of our analysis of NSP's application with respect to the category and the rationale for consideration of the category in the EIA.

## 5.2 Public Safety

5.2.1 Public Safety Issues Associated with the NSP Application

5.2.1.1 The application states: "...Except when spent fuel canisters are being installed or removed from the site, the ISFSI is an entirely passive storage operation. It has very little, if any, potential for operational or accidental release."

This statement represents a conclusion. No risk analysis has been made as a basis for this conclusion. The EIA to be prepared by the EQB should require such an analysis. NSP should fully describe the potential for accidental or malicious release when the fuel canisters are being installed or removed. Human error and mechanical/operational factors should be fully and completely considered. The probability that the factors considered are all-inclusive should be established and the risks for each quantified by an independent risk assessment analysis.

5.2.1.2 The application describes security and demands on the local infrastructure in NSP's application Paragraphs 4.4-4.5 and 6.1.5. The Task Force finds the emergency plans disturbingly vague, especially in conjunction with claims for minimal impact on local infrastructure. The fact that any emergency response to an accident or incident at the proposed site would involve resources from both Goodhue and Wabasha Counties argues the case for maximum impact on the local infrastructure.

Florence Township has no fire department, police department, or other emergency response capabilities. Contractual arrangements are in effect with the Lake City *volunteer* Fire Department approximately seven miles away for emergency fire response. Florence Township pays Lake City approximately $20,000 per year for this service. The impact of the proposed nuclear waste storage site in Florence Township may increase those costs beyond the township's current annual operating budget.

5.2.1.3 By 1999, all 17 authorized casks may be at the existing Prairie Island facility. NSP's application needs to provide detailed information regarding transportation of these casks to the proposed facility in Goodhue County. For example, the time required to complete the process needs to be addressed along with the safety precautions that will be taken to minimize any problems such as cask weeping (see "Definitions" page following Table of Contents) that may occur along the transportation route. In the EIA, NSP must provide the EQB with information as to when the casks will leave the off-site storage facility and the transportation method by which this

will be accomplished as required in Minnesota Rules 7855.0600(C)(3) (Appendix L, p. 840). All transportation processes should include dates of shipment, routes, interstate clearances, railway clearances, training, safety precautions, security, emergency management, community notification, and proof of liability insurance coverage for damages not covered by Price-Anderson.

5.2.1.4 The NSP application states on page 2-6 that the "overpack provides a complete containment barrier capable of withstanding any credible accident that might occur." Any discussion of "incidents" is missing. Conventional shaped charge munitions may be capable of penetrating the canister system and exposing the highly radioactive spent nuclear rod assemblies. The 1995 incident in Arizona involving an intentional train derailment provides positive proof that the possibility of terrorist incidents must be addressed.

5.2.1.5 Dry Casks. NSP's application states that the company will use a dual-purpose canister which can be used for both transportation and storage. The first dual-purpose cask was permitted by the NRC in August 1995. Two more casks are in the pipeline, neither of which are intended for use by NSP. NSP is basing its application on the assumption that it will have a cask and vendor selected in 1996. At that time, NSP plans to provide details and specifications. But the EQB requires that NSP provide specific and detailed information on the cask prior to the pre-hearing conference which should occur long before October 1996. The EQB should require NSP to provide information on efforts NSP has taken to design, develop, procure, and license a dual-purpose cask. In the absence of this information, the safety study conclusions have been based primarily on computer models. In addition, no cask used today has been tested to failure.

As discussed above, NSP's application omits discussions of the mitigating actions to prevent, and the potential risks and effects of, a terrorist attack or an accident or incident caused by human error or equipment malfunction. For example, the Task Force understands that a cask full of fuel rods at Michigan's Palisades plant has an improper weld. The utility plans to remove the fuel from the faulty cask and place it into another cask. This transfer is expected to occur in 1996. A fix has still not been determined. The emergency management plan for the off-site storage facility must address these scenarios to include an on-site pool to unload the fuel. NSP's application lacks essential information regarding emergency management of irradiated fuel in the event of cask containment failure.

5.2.2 Public Safety Issues Associated with the Project Design and Alternate Sites

5.2.2.1 Transportation Issues. NRC regulations do not require full-scale tests for licensing casks. The NRC allows cask designers to substitute scale-model tests and computer simulations for full-scale testing. Detailed case studies of recent rail and truck accidents have raised serious doubts about how well the NRC standards reflect real-world accident conditions. The tests were not intended to simulate worst-case accidents or to prove the overall safety of nuclear waste shipments (and storage operations). How the casks will perform in real-world accident situations is uncertain. Nothing less than actual testing of proposed casks against real ordnance and explosives is acceptable, given the risks of miscalculation.

NSP prefers rail as a method of transporting the casks from the Prairie Island plant to any off-site location. Rail shipments to many of the proposed sites will be routed through the city of Red Wing, through the downtown area, to an off-site facility.

Generally, railroad common carriers and the nuclear power industry clash over the necessity of "dedicated" trains (i.e. exclusive use of a train for a nuclear waste shipment), traveling at slower-than-usual speeds and the advisability of shipping a combination of nuclear and other less hazardous freight on one train. Railroad companies also are concerned about cask design and "are skeptical of the crash tests intended to demonstrate the casks' integrity." (Appendix T, Glickman and Golding, *Shipping Nuclear Waste*, Public Utilities Fortnightly, 11, Sept. 15, 1991.)

Railroad companies have (1) initiated dedicated trains and speed limits, (2) required additional insurance and (3) charged the customer for these initiatives. The utilities have challenged the railroad companies through the Interstate Commerce Commission (ICC). The ICC consistently has sided with the nuclear power industry, holding that no further safety precautions are necessary and that "carriers may not renege on their common carrier responsibility to transport nuclear materials on the grounds that they are too dangerous if, in fact, the minimum safety requirements of DOT and NRC have been met." (Appendix U, Spraggins, *Transporting Spent Nuclear Fuel by Rail: the Issue of Price to the Risk*, Journal of Transportation Law, Logistics and Policy, p. 415.)

The nuclear power industry argues that the additional precautions provide no additional safety benefit and that the costs are prohibitive. An examination of rates, however, shows that the costs are only two or three times higher than usual and not 12 times higher as the nuclear power industry argues (Appendix U). Further, dedicated trains move more quickly because they are given priority over other freight trains, and security costs are lower because of the faster overall rate of travel (Appendix U, page 418; Appendix T, page 11). Dedicated trains also have the benefit of increasing public perception of safety.

5.2.2.2 Transportation Accidents. The consequences of one accident could be catastrophic and immeasurable.

5.2.2.2.1 There are five major groups of accident types, any one of which could involve the transportation of nuclear waste. (Appendix U, pp. 409-410)

- Derailment: occurs when on-track equipment leaves the rail for a reason other than collision, explosion, rail-highway crossing impact, etc. The recent domestic terrorist act in Arizona resulted in a derailment.

- Collision: occurs when two trains, parts of trains, locomotives or track equipment impact against each other; includes head-on, rear-end, side, raking, broken train, and railroad crossing.

- Rail-Highway Crossing Collision: an impact at grade between railroad on-track equipment and highway vehicles, farm vehicles, bicycles, or pedestrians. The recent school bus/train accident in Illinois in November 1995 is a good example of this type of accident.

- Fire/Explosion: an accident caused by detonation, combustion, or violent release of material carried or transported by rail. A terrorist firing a modern armor piercing or shaped charge missile or grenade from an advantageous position on a bluff overlooking a rail line at a dual-purpose dry cask could cause this type of event to occur.

- Other: any event not otherwise classified; also includes switching

collisions when all involved are part of the switching movement.

5.2.2.2.2 There are four major causes of accidents:

- Track, Roadbed, and Structures: accidents caused by defects in the track, roadbed, or track structures.

- Mechanical and Electrical Failures: accidents caused by malfunction of some part of a train; generally these are mechanical failures related to axles, wheels or journals.

- Train Operation — Human Factors: accidents caused by human error, including rules violations and improper train handling.

- Miscellaneous: accidents caused by events not covered by the above categories, including rail-highway, objects on the track and vandalism.

In 1990, there were 2,871 train accidents; the causes of those accidents were:

| | |
|---|---|
| Human Factors: | 37.9% |
| Track: | 34.4% |
| Equipment: | 14.9% |
| Miscellaneous: | 12.8% |

(Appendix U, p. 411)

A rail accident or incident could be catastrophic. Rail shipments to proposed sites parallel the Mississippi River with millions of people and elements of the food chain downstream. The rail also parallels U.S. Highway 61 where thousands of vehicles travel each week. These data greatly multiply the risks of large scale contamination if an accident or incident were to occur.

5.2.2.2.3 Common Carrier Liability to Impacted Citizens. This subsection is a summary of liability material presented in Appendix U, pp. 414-417.

The Price-Anderson Act (1988) is a governmental type of "no-fault" insurance which covers liability for incidents resulting in an Extraordinary Nuclear Occurrence (ENO) as declared by the NRC. A plaintiff must show only a causal relation between damages suffered and the incident, and the carrier may not use standard tort defenses. Damages are covered up to a $560 million ceiling for each occurrence.

If an ENO were to occur in Goodhue County in close proximity to the Mississippi River, the $560 million would not begin to cover the damages. The businesses and personal property within a 50-mile radius of NSP's proposed sites, including Rochester, Wabasha, Lake City, and Red Wing, are worth billions of dollars. If a limit of $560 million were imposed, compensation to each damaged individual would be minuscule.

The process for a claim under Price-Anderson is as follows:

- An incident with damages occurs.
- Citizens sue both the rail and the utility.
- Rail and utility ask NRC to pay damages. NRC makes ENO determination (may take up to one year).

As the common carrier, the railroad company is open to liability. The carrier may be liable both for the damages over the amount covered by Price-Anderson and for damages not covered by Price-Anderson. Railroad companies are particularly concerned about two scenarios:

- Train carrying spent nuclear fuel derails; local area is evacuated; area and railroad shut down until deemed safe. No ENO occurs. Carrier may be liable.

- Damages are over $560 million. Carrier may be liable as a third party.

CP Rail Systems is the common carrier that would transport NSP's high-level radioactive spent nuclear fuel to the storage facility. In the development of the EIA, the EQB should evaluate the measures CP Rail Systems will take to assure protection of the public when it transports nuclear waste. A determination of CP Rail System's ability to cover potential damages that may occur if a common carrier transports spent nuclear fuel needs to be made. Do they have liability insurance to cover incidents that require evacuation but do not result in an ENO? Do they have sufficient liability insurance to cover any damages over the amount specified in the Price-Anderson Act? If they do not have sufficient insurance, how will the public be protected? How will this affect the rate for transportation of nuclear waste?

5.2.2.3 On Site Accidents or Incidents. NSP's application for the proposed facility contains no plans to install continuous reading radiation meters or pressurized ion chambers such as those finally agreed to and installed at the nuclear waste storage facility on Prairie Island. According to Patricia Bloomgren, Director of the Minnesota Department of Health, Environmental Health Division, the use of continuously reading radiation monitors "allows for safety precautions to be taken while they would be effective" (March 17, 1993 letter from Patricia Bloomgren to Richard Lancaster, Executive Secretary of the Minnesota Public Utilities Commission). The people living in and around the proposed site (just as those living on Prairie Island) deserve a chance to have safety precautions taken "while they are effective." The Task Force is at a loss to explain NSP's failure specifically to include such monitoring devices in its application for the proposed facility.

5.2.2.4 Security. In light of the recent terrorist incidents in Oklahoma City and in Arizona, security issues must be taken seriously. Virtually every commercial reactor site and radioactive waste storage facility in the country, including NSP's nuclear operations, is not adequately protected against a terrorist attack using modern weapons. A successful attack could produce an uncontrolled release of irradiated fuel fragments and radioactive debris. Evacuation and abandonment would be the only recourse. Cost-effective security systems are available and should be deployed as a condition for siting the proposed nuclear waste storage facility. The only irradiated fuel storage equipment that responsibly can be used is equipment that has been tested to failure (that is, equipment designed to withstand modern weapons and not to fail any protocol requirements, including reporting requirements, during fabrication).

An off-site nuclear waste storage facility has much different security requirements than the storage site on the secure grounds of the Prairie Island Nuclear Power Plant. Although the requirements for a double-fenced storage area with up-to-date security monitoring devices, a surrounding berm and clear zone are similar, the size, composition, and equipment of the security force are nonetheless different as are the physical construction surrounding the immediate cask storage area. Specifically, there are at least three components needed to secure the casks once they are on-site.

- The storage site should have some type of barrier to stop intrusions by vehicles that could contain large quantities of high energy explosives.

- Security fencing and movement detection devices, etc., should be installed beyond planned fencing to detect and deter sapper intrusions. (A

sapper is a specialist in military mines and explosives who is used to infiltrate security systems and inflict damage to equipment and supplies stored therein.)

- The casks should be stored within concrete buildings or other physical barriers to protect the casks from detonations by weapons and explosives fired from standoff air or ground locations outside the bounds of the security system.

Appendix V contains a more detailed description of security issues to include the details of the type of weapons and explosives that could be used by a domestic or international terrorist group.

5.2.2.5 Uncertainty Analysis. The worst case scenario upon which to base a risk assessment involving uncertainty is that of an accident or incident at a storage site or en route to a storage site. High-level radioactivity could contaminate the air, ground, and water in a 50-mile radius from the accident or incident site (Sec A. 18, page A-19, Implementation Plan for the EIS for a Multi-purpose Canister System for Management of Civilian and Spent Nuclear Fuel, DOE, August 1995 (Appendix W)). The risk to the general public, NSP workers, and emergency rescue and repair personnel should be assessed in the EIA. If an accident or incident should occur, who would respond? Who will have training? Who will incur costs?

5.2.2.6 In those limited cases where NSP has offered "risk" radiation dosage levels, the levels have been calculated. Part 71, Paragraph 71.73, NRC Rules and Regulations requires Free Drop, Puncture, Thermal, and Immersion tests be conducted as tests for hypothetical accident conditions. These required tests have been conducted and have been used by NSP to calculate risk radiation dosages. However, the dosages alone do not constitute a complete, valid risk assessment. Further, the ALARA (as low as reasonably achievable) standard clearly allows NSP the opportunity to circumvent public safety issues and base the safety of operations on a corporate/stockholder cost basis. The EQB and the public would benefit from a risk assessment that properly addresses public health and safety issues. The application for Site Certificate should include the detailed results of the risk assessment. Also, the EQB should require that the complete risk assessment be made public.

5.2.2.7 Emergency Capability. NSP has failed to show conclusively that its structures, systems, and components important to safety are designed for emergencies. The design must provide access to the equipment at the site. Emergency facilities and services such as hospitals, fire and police departments, ambulance service, and emergency management agencies must be readily accessible. Concerned citizens have suggested that a pool be constructed at any off-site facility to be used in the event of a radioactive leak. NSP contends that casks will be transported back to Prairie Island should an accidental leak occur. This position may violate NRC licensing requirements and would expose thousands of people who live and work along the railroad corridor to risks associated with exposure to high-level radiation. We believe there is no plausible strategy for dealing with leakage of radioactive materials in-transit.

5.2.2.8 Emergency Plan. The EQB should insist that NSP provide an emergency plan in accordance with NRC Part 72, Proposed Rule Making, §72.32, Page 72-PR-5 (Appendix X). Although the final plan must be site specific, NSP should provide a generic plan for EQB review and evaluation. This plan should include -- but not be limited to -- a description of the type of accidents that may occur. The plan

**Task Force Tour of Prairie Island Nuclear Waste Storage Facility, October 28, 1995.**

**Cask Transporter: Prairie Island Nuclear Waste Storage Facility October 28, 1995.**

should include accidental and incidental release of radioactivity during storage, transportation, handling, and decommissioning; classification of accidents with respect to appropriate responses; detection of accidents; mitigation of consequences; and assessment of releases.

## 5.3 Public Health

5.3.1 Public Health Issues Associated with the NSP Application

5.3.1.1 Section 4-3 of NSP's application states that its "As Low As **Reasonably** Achievable (ALARA) Program" will be the heart of its "radiation protection program" for the proposed Florence Township facility. NSP's radiation protection program for the proposed Florence Township facility is not As Low as **Possibly** Achievable (ALAPA) and therefore obviously contains some form of cost-benefit analysis (emphasis added). Given that it is the obligation of this Task Force to advocate for the health and well-being of our citizens, we believe nothing less than a ALAPA standard should be applied, due to the magnitude of the associated risks. The NSP application should have set forth the calculus of such cost-benefit analysis in order to evaluate the effects on public health as required by Minnesota Rule 4400.3310.

5.3.1.2 NSP's application makes the claim on page 4-6 of the application that "[R]adiation levels at the Goodhue County facility are expected to be even lower than those calculated for the Prairie Island Facility." This claim is entirely without factual support and should be ignored by the EQB. Furthermore, if there is something inherent in the design of the proposed facility or its equipment that results in lower off-site ionizing radiation, NSP immediately should disclose such information so that Prairie Island residents can urge adoption of such protections.

5.3.1.3 Page 4-12 of NSP's application states that the "facility will have a permanent monitoring system to record radiation levels." NSP should provide more detailed information on this monitoring system, including types of monitoring equipment, parameters monitored, frequency of monitoring, reporting, and the agencies involved. Information should also include what parameters are not monitored, such as biological indicators like animal, plant and human tissues. Because the proposed Goodhue County off-site nuclear waste storage facility will be owned privately by a commercial company, it is reasonable that local government agencies be furnished with a remote independent continuous monitoring system tied into local emergency response facilities.

5.3.2 Public Health Issues Associated with the Project Design and Alternate Sites

5.3.2.1 The Perception Issue. The perception of the public will not always depend on the facts presented, but on their own feelings. In many cases, it is less important that information shows that the nuclear waste to be stored may be safe or unsafe. The stress derived from perceived risks is equal to the stress derived from actual risks even though the actual risks may or may not be less than the perceived risks. The perception of risk is important and must be seriously considered in all aspects of the EIA. The following statements extracted from citizen input to the Task Force (Appendix I) emphasize the relevance of this sensitive issue:

- "The EQB is allowing large corporate/political interests to prevent health and safety facts from being known to the general public."
- "Long term radiation doses are harmful. Linear dosage models based on Hiroshima bomb survivors are inappropriate for low-level, long-term exposures."

- "Health assessments contain too many mushy 'gray area' terms such as 'should be' and 'may have.' Hard data is needed to make good decisions."

- "I have a personal concern about the health risks to our children and the elderly. Cask exposure is uncharted territory. The MDH 'model' is based on a 70 year lifespan and nuclear waste hasn't been around that long."

- "What about the effects on the food chain?"

- "What health problems have surfaced from radiation exposure to NSP employees?"

- "There are too many unknowns regarding the long-term effects of radiation on bioaccumulation and human and ecological health. Non-experts cannot understand the risks — 30 years energy for 10,000 years storage?"

- "Land use changes in the future could affect present site risks, e.g., expanding airport could affect health risks due to increased local population."

- "Who gets to be the one in 100,000 to get cancer?"

- "The economic concerns of the health issue are not ethically acceptable. It's like the Ford Pinto issue: only so many will die, therefore we won't spend $12 to isolate/insulate the gas tank. What is a life worth? What level of harm is acceptable?"

- "Is there documentation that Red Wing has six times the incidence of breast cancer? Are there other cancer studies at other nuclear sites here, or nationwide? How far out geographically does the higher incidence go?"

5.3.2.2 Radiation -- The basics. Radiation is the release of energetic particles and rays from atoms. This release occurs because some atoms, the basic building blocks for all substances, are unstable. The atom has a center or nucleus, made up of protons and neutrons. Electrons surround the nucleus. Too many or too few neutrons in the nucleus make the atom unstable. An unstable atom is radioactive when it gives energy in the form of particles or waves.

Radiation transfers energy to the substance that it strikes. The transfer of energy between the radioactive substance and living matter is, in general, a harmful process. The greater the energy transferred, the greater the injury. Radiation energy comes in the form of either waves or tiny particles.

Radiation is all around us, i.e., it occurs naturally. It is measured in units called millirems. A millirem measures the effect of radiation on our bodies just like degrees measure temperature and pounds measure weight. The average American receives 360 millirems per year in total radiation-natural (300) and man-made (60). This varies; a person living at sea level receives about 100 millirems per year.

Radiation exposure can be internal or external. Internal exposure comes from eating or drinking contaminated food or water or from breathing contaminated air. A radioactive substance also can enter the body through breaks in the skin. External exposure can come from gamma rays, x-rays and beta particles which penetrate the skin. Both internal and external exposure directly can harm cells.

When a radioactive particle or wave hits a cell in the body, one of at least four things can happen: (1) it may pass through the cell without doing damage; (2) it may damage the cell, but the cell may be able to repair the damage before it produces new cells; (3) it may kill the cell; and (4) it may damage the cell in such a way that the damage is passed on when new cells are formed.

The scientific study of the effects of low levels of radiation (below 50 rems) is difficult in that the negative health effects may occur months or years later after the exposure. This latent period varies for different types of health effects, different types of radiation, and different radiation doses. The latent period may be longer than the person's lifetime. In this instance, no detectable effect from radiation exposure will occur before the person dies of other causes.

At high levels of exposure, radiation causes cancer and other negative health effects. There is no dispute among scientists that enough radiation will destroy cells and the recipient will die. With a large enough dose of radiation, death will result over the very short term, i.e., a term measured in days or weeks. With some lesser dose, a person will suffer cellular and genetic damage and certain forms of cancer will result. Again, there is no dispute among scientists. It is important to recognize that, as it relates to high doses of ionizing radiation, the risk of cancer has a linear relationship to the dose, i.e., each increase in the dose of radiation causes an increase in cancer risks.

The controversy revolves around establishing the lowest level of radiation that will harm the recipient. Does the linear relationship of negative health effects that is well-established in high-dose situations hold true in low-dose environments such as will be present at the proposed facility? Some scientists believe that the same linear relationship exists. The necessary corollary to this is that **any** dose of radiation is harmful and the only absolutely safe dose level is **zero**. Other scientists contend that the linear relationship as it relates to low doses does not exist and there is a low-dose "threshold" below which radiation has no harmful effect. Yet other scientists contend that the linear relationship understates the cancer-causing potential of low doses of radiation. In this view, the amount of cancer produced per rem of radiation at low doses is greater than the cancer produced per rem at high doses. Under this view, low doses are more dangerous than most official bodies predict. Lastly, some scientists contend that low doses of radiation are actually good for the recipient.

5.3.2.3 Tolerable Risk Issues. Over the years, radiation protection standards have exhibited a downward trend to more rigorous limits that require increased commitments of people and resources for their enforcement. The following table represents U.S. recommended maximum permissible whole-body doses of external radiation (above natural levels):

**Occupational Exposure**

| Year | Allowed Exposure |
|---|---|
| 1934 | 30 rem/year |
| 1949 | 15 rem/year |
| 1957 | 5 rem/year |
| 1987 | 5 rem/year |
| 1990 | 2 rem/year (proposed) |

**General Public Exposure**

| Year | Allowed Exposure |
|---|---|
| 1956 | 0.50 rem/year |
| 1960 | 0.17 rem/year |
| 1987 | 0.10 rem/year |

[Source: *Bulletin of Atomic Scientists*, September 1990, P. 14. Note: 1 rem = 1,000 millirems]

The International Association for Research on Cancer states that "the width of the confidence intervals (a measure of the range of probabilities that the findings are not due to chance) is such that the risk estimates are consistent with a range of possibilities from an absence of a carcinogenic effect to risks several times greater than those on which current radiation standards are based. In other words, the risk may range from **zero** at one extreme to an upper limit that would imply the safety limits could be **15 times too high**" (emphasis in original document).

There are several reasons for this trend, including increased recognition of the long-term health effects of radiation, growing numbers of persons exposed occupationally to radiation, and a greater intolerance to involuntary risks in society. Experts have presented increased risk estimates for radiation exposure as a consequence of ongoing epidemiological analyses of human populations exposed to ionizing radiation. These risk estimates have enhanced public concern about radiation exposure and set the stage for further reductions in exposure standards for radiation workers and members of the public (Appendix Y).

Currently, there is much data to suggest that long-term chronic exposure to low-level radiation is harmful to people and carcinogenic. The radiological health standard set by the Minnesota Department of Health (MDH) requires that no new source of radiation can cause more than one cancer case per 100,000 population. Dr. Bertell, testifying before the PUC, indicates that the construction of the Prairie Island ISFSI at the "moved" location (and where it was ultimately built) "cannot sufficiently reduce the dose to the public to bring the project into compliance with Minnesota MDH requirements" (Appendix Z, p. 21). It should be noted that Dr. Jacob I. Fabrikant, testifying before the PUC on behalf of NSP, rebuts Dr. Bertell's testimony (Appendix AA, Pages 9-10); he believes that the Minnesota Department of Health is overstating the likely risks of low dose and low dose rate exposure, stating that "the continued reliance on conservative (worst case) assumptions distorts risk assessment yielding estimates that may overstate likely risks by several orders of magnitude." The Task Force believes the MDH is correct in erring on the side of caution when dealing with potentially carcinogenic radiation.

Operating a nuclear waste storage facility also can increase cancer risk. Radiation is present throughout the nuclear fuel cycle. Nuclear waste storage facilities must be evaluated not only in terms of costs and risks attached directly to this proposal, but also in terms of costs and risks attached to entire nuclear fuel cycles that an independent storage facility would accommodate. Spent nuclear fuel emits radiation that must be absolutely isolated from all biological systems for geological periods of time. Technologies, methodologies, and sites capable of performing this function are not presently known.

Dr. Abram Petkau discovered that when radiation levels are just slightly above background levels for extended periods of time an enzyme action occurs inside cells that causes membranes in the cells to dissolve. This phenomenon is known as the "Petkau Effect." When the membranes dissolve, the door is open for cancers, mutations, and disease. This enzyme action is not as pronounced at higher radiation levels for shorter periods of time. At these low levels of exposure, the length of exposure, rather than the level of radiation, is the dominant factor (*The Petkau Effect* by Ralph Graeub). This argument should be addressed during the EIA development process and pursued.

5.3.2.4 Health Issues Associated with the Dry Casks. Because the type of cask to be used at the proposed Goodhue County off-site facility is yet to be determined, it is difficult to evaluate and calculate the number of millirems of radiation from each cask that will be emitted each year. Questions about how much of this radiation would reach off-site persons should receive considerable attention in the EIA.

Spent nuclear fuel emits dangerous levels of gamma and neutron radiation even after ten years of cooling. A person standing three feet away from an unshielded spent nuclear fuel assembly could receive a lethal dose of radiation (500 rems) in less than three minutes. Federal regulations allow dry casks to emit as much as ten millirems per hour at two meters. However, there is evidence that even small amounts of radiation can have long-term health implications. Repeated and long-term exposure to low levels of radiation can have health consequences that need to be monitored and managed. The issue of potential effects of repeated exposures to nuclear waste dry casks, either in transport along rail routes or on-site, should be addressed because of potential adverse health consequences on the exposed public and workers.

At a task force meeting on November 18, 1995, Minnesota Department of Health officials Patricia Bloomgren, Rita Messing, and Judith Ball participated in a panel discussion regarding public health issues associated with dry cask storage. Their presentations were forthright and to the point, and they answered many questions provided by very concerned citizens. As a result of their discussions, several issues that need to be addressed in the EIA were defined:

- The effects of long-term chronic exposure to a relatively small dosage of radiation such as that emitted from a dry cask can be different than a short-term exposure to a high dosage. The biological effects and manifestations may be very different. These health effects need to be considered when examining any proposed nuclear waste storage facility using dry casks.

- The existing models and methodology used by public health officials to determine the effects of radiation on the public from dry cask storage are not yet proven to be effective indicators of health consequences that may result from long-term, low-level exposure to dry cask radiation.

- Experts agree that there is some risk associated with the storage of high-level nuclear waste in dry casks. The degree of this risk is debatable. Regardless, a certain level of risk may be acceptable as an unavoidable fact of life, particularly if society perceives that it can benefit. The communities associated with the issue of dry cask storage perceive no benefits that will accrue and consequently reject the idea of dry cask storage in their communities. Simply put, the risks to public health outweigh any benefits that might be derived.

- The issue concerning the effects of "weeping," particularly during the transportation or movement of dry casks, has surfaced. Effects of weeping, although not clearly understood by the public need to be carefully addressed in the EIA.

Quarterly Environmental Radiation Data Reports by the Minnesota Department of Health (MDH) provide useful information. The latest report dated August 1995 (Appendix BB) shows readings of average gamma exposure

rates for the 2nd quarter of 1995 at various representative locations (nearest resident; northwest sector; Lock and Dam No. 3; Mount Carmel Road; Red Wing; and Hastings) are significantly higher than earlier readings from 1989-1994 to the first quarter of 1995. Readings ranged from 15.3 Millrem/Quarter at Mount Carmel Road to 18.3 Millrem/Quarter at the nearest resident. But MDH states that these readings are consistent with natural background readings and that no plant effect has ever been observed. The issues, however, are the time that the casks will remain safe (certainly not for the half-life of the radiation contained therein) and the ability of the cask to withstand predictable accidents and incidents, such as terrorist attacks.

To detect any leakage or increasing levels of radiation, monitoring of the casks is of great concern. In developing the EIA, the EQB should insist that an independent contractor develop and track the monitoring to prevent conflict between the needs of public safety and corporate profitability.

The EQB should require more extensive studies of dry cask design and testing. There are too many uncertainties with various aspects of cask testing and the lack of long-term low-level radiation dosages at this time. A dry cask has never been unloaded. The NRC has allowed utilities to load dry casks despite the fact that no utility has unloaded radioactive nuclear waste from a dry cask. Issues to be examined include unsealing casks, flash steam, weeping, and testing the cask to failure. Finally, a decision regarding the need for a pool facility at the off-site location is required.

5.3.2.5 An initial health assessment of the surrounding area of an alternate site should be required prior to the construction of any off-site building or transfer of casks to make comparisons and analyses at specific year increments after the placement of casks in the designated site. On numerous occasions during Florence Township meetings, it has been suggested that all residents in the vicinity of the proposed site be given complete physical examinations prior to construction of the site to establish a "health baseline" against which future illness such as cancer could be measured. Because of the long latency period for cancers, other bio-indicators which give a quicker indication of negative trends should be examined as well. Bio-indicators that could be monitored, according to Rosalie Bertell, Ph.D., include: fertility rate (women), average birth weight, infant head size, average monocyte count, sperm count levels (men), congenital abnormalities diagnosable within seven days of birth, childhood asthma occurrence, average asthma occurrence, average eosinophil count in children and analysis of baby teeth. (See Appendix Z.)

There has been much controversy over the extent to which low-dose radiation causes cancer. One of the more widely-known reports was published in 1990 by the National Research Council's Fifth Committee on the Biological Effects of Ionizing Radiations (known as BEIR V). Overall, BEIR V concluded that cancer risk from radiation exposure is higher than regulatory and advisory groups have previously described. (Source: Hanford Health Information Network, Appendix CC.)

Dr. John Gofman, Professor Emeritus of Molecular and Cellular Biology at the University of California, Berkeley, concluded that for every 10,000 adults exposed to 1 rem of radiation, 27 would die from radiation-induced cancer. The risk is even higher for children. Gofman concluded that there is no dose of radiation below which the risk of cancer does not exist. He also believes that receiving a low dose of radiation over weeks or months, as compared with hours or days, does not lower

the risk for radiation-induced cancer. In fact, Gofman argues that the same dose of radiation given over a longer period of time will produce a greater cancer risk than if given over a short period. (Source: Hanford Health Information Network, Appendix DD.)

The Massachusetts Department of Public Health, Division of Environmental Health Assessment, conducted a study to determine the extent of radiation from releases from the Pilgrim nuclear power plant had on the residents in nearby counties (Appendix EE). The plant had a history of releases of emissions during the 1970s that were above the accepted EPA guidelines. What is interesting, is that one of the findings of the study was that individuals who lived and/or worked the longest and closest to the plant had almost four times the rate of leukemia as to those who lived and/or worked the least amount of time from the plant. Perhaps this study and one by Sternglass (Appendix FF) need to be looked at closer to establish effects on health. A Minnesota Department of Health *report, The Occurrence of Cancer in Minnesota 1988-1992: Incidence, Mortality, Trends*, March 1995, (Appendix GG) contains some data that does not agree completely with the above paragraphs.

5.3.2.6 The EQB's EIA should examine the procedures involved with handling and disposing of the possible low-level radioactive waste that could remain in Florence Township.

5.3.2.7 No consideration of public health issues associated with the storage of high-level nuclear waste would be complete without consideration of mental health. As described in section 5.3.2.1, the Task Force believes that the public's perception of risk is fear of detrimental life changes that may be caused by this project. In public meetings, citizens have raised concerns about fear of cancer, of radiation sickness should an accident occur, and of the disruption of their sense of tranquility, safety and peace of mind. Others articulately have described their sadness about this threat to the integrity of the lives they have created. As one woman said at an EQB public meeting: "Knowing that our cherished community is threatened by a nuclear waste facility disrupts and jeopardizes almost every aspect of our lives." NSP has ignored the anxiety and disruption their application causes. When considering health impacts of NSP's proposal in the EIA, it is important for the EQB to consider the psychological impact of a nuclear storage site on the hundreds of people who live within close proximity of the proposed sites.

## 5.4 Socioeconomic Issues

5.4.1 Socioeconomic Issues Associated with the NSP Application

5.4.1.1 Florence Township was not represented on NSP's Citizen Advisory Committee until after NSP's Phase II study results which identified five sites in Florence Township. From a glance at the St. Paul bedrock, a reasonable person could speculate that siting in Florence Township was likely, for NSP relied heavily on geologic conditions for siting. The NSP Public Advisory Committee did not have the opportunity, and it was not in their charge, to participate meaningfully in the compilation of criteria and standards used to select sites or in the determination of the sites. Any comments, criticisms, or statements made by members of the committee generally were not heeded and had no impact on the process. NSP, by not having a representative from Florence Township on the Committee, omitted the best means of measuring the socioeconomic impact of their siting proposals. The validity, completeness, and accuracy of NSP's socioeconomic analysis is suspect and provides several issues which should be addressed in the EIA developed by the EQB.

5.4.1.2 NSP's application is incomplete in that it does not contain all of the information necessary for the EQB to analyze the basic screening process used by NSP in the initial site selection. NSP's site selection process was driven by proximity to the only active rail mainline in Goodhue County. Moreover, NSP admits at page 3-12, that its search in this regard was "arbitrarily designed." According to Rule 4400.0300 "[i]t is the purpose of the act and the policy of the state to locate large electric power facilities in an **orderly manner compatible with environmental preservation and efficient use of resources"** (emphasis added). A search criterion whose fundamental premise was "arbitrarily designed" cannot possibly allow the EQB to comply with the mandate of orderly selection and efficient use of resources. Similarly, given that the site screening process was arbitrary, the EQB cannot know that the site was chosen so as to "minimize adverse human and environmental impact" as required by Rule 4400.0300.

5.4.1.3 Section 6.1.1, p. 6-2 of the NSP proposal suggests the Village of Old Frontenac is just a few scattered year-round and summer homes. In fact, there are a few summer homes, but most of the residents are year-round. Although not yet incorporated, Old Frontenac is part of a defined and structured community. Further, the entire community of Old Frontenac is on the National Register of Historic Places, the first such community in Minnesota. The community, the first village on the Minnesota side of Lake Pepin, was established in 1839 as a trading post. The most prominent institution in the Old Frontenac vicinity is Villa Maria, established in 1891 by the Ursuline Sisters as a convent and school for girls. Villa Maria is an ecumenical conference center serving 6,000 people annually. Further, its sister community, Frontenac Station, is not just a sleepy, dirt-road town either, but has 30 year-round businesses, homes, a community center, church, fenced play park, U.S. Post Office, restaurants, and black-topped streets with street signs.

Appendix HH provides further information on the history of the "two" Frontenac towns.

5.4.1.4 Land Base Economics. The NSP application states: "Land in the area around the preferred site is predominately undeveloped, consisting largely of deciduous forest and cultivated agricultural lands." It should be taken into consideration that **Florence Township is the fastest growing township in Goodhue County**. These facts are stated in a September 15, 1995 letter and fact sheet from the Goodhue County Land Use Management Department (See Figure 3 and Appendix II). These data represent only a six-month total. In addition, the 1992 *Ministry Area Profile* of a three-mile radius around Christ Church of Old Frontenac portrays substantial growth.

Figure 3. New and Replacement Dwellings 1995

**JANUARY thru JULY 1995**

*New and Replacement Dwellings*

| | | |
|---|---|---|
| Belle Creek | 0 | |
| Belvedere | 1 | $111,000 |
| Cannon Falls | 4 | $435,000 |
| Cherry Grove | 4 | $366,000 |
| Featherstone | 0 | |
| **Florence** | **8** | **$736,000** |
| Goodhue | 0 | |
| Hay Creek | 2 | $199,000 |
| Holden | 0 | |
| Kenyon | 0 | |
| Leon | 3 | $222,000 |
| Minneola | 3 | $458,000 |
| Pine Island | 1 | $ 50,000 |
| Roscoe | 4 | $448,000 |
| Stanton | 4 | $274,000 |
| Vasa | 2 | $190,000 |
| Wacouta | 1 | $279,000 |
| Wanamingo | 1 | $ 71,000 |
| Warsaw | 1 | $ 79,000 |
| Welch | 2 | $125,000 |
| Zumbrota | 1 | $ 79,000 |
| **TOTAL** | **42** | **$4,122,000** |

Source: Land Use Management Dept., Goodhue County, letter, September 15, 1995.

In 1980, the area had 403 households; in 1991, 515 households; and in 1996, the profile projects 582 households. The Profile offers evidence of accelerated expansion of the Florence Township Area. (Appendix JJ).

- The value of Florence Township's new and replacement dwellings account for $736,000 of Goodhue County's total for all townships of $4,122,000.
- Of the 21 townships in Goodhue County, Florence Township represents approximately 18% of the total dollars spent on new and replacement dwellings. The construction of a storage facility for high-level nuclear waste in the County's fastest growing township is an issue that needs to be addressed in the EIA. The township's rapid growth probably would diminish if the proposed dry cask storage facility were

to be constructed there. This very likely could destroy ongoing economic development activities. Numerous citizens agree that constructing a storage facility for high-level nuclear waste in the County's fastest growing township is a ridiculous and dangerous idea that defies common sense and contradicts public policy. If such a site is really needed, it must be sited *away* from growing centers of population, major highways and waterways.

5.4.1.5 Information in the application regarding wells, industrial operations, farms, and homes is incomplete or not included. Data is based on old and superseded information such as screening maps from 1966-1976, geological maps that are 29 years old, 1:100,000 scale maps, and 19-year-old soil samples.

- A large farm business located less than one mile from the "P" preferred site is omitted. It is a dairy operation consisting of a milking herd of 280 cows where 12 people are employed. The capital investment and gross income amount to nearly $1,000,000.

- A farm with two residents is located 2,500 feet to the north of "P" (the Clara Carlson Property); a second home with two persons is 2,600 feet to the northeast.

- A landing strip and hangar for ultralites and small aircraft is 2,500 feet to the northeast of the Carlson Property. Another strip is 2,500 feet to the west. Both of these facilities increase security risks.

- The following wells are located in the vicinity of the Carlson Property:
  - Industrial well, 3,000 feet north.
  - Irrigation wells, 1,500 and 3,000 feet east.
  - Black top operational well, 2,000 feet west.
  - Abandoned farm well, 2,500 feet west.
  - Community Center public well, 2,500 feet northwest.

- The following commercial and industrial operations are located in the vicinity of the Carlson Property:
  - Black top mixing operation, 2,000 feet west.
  - Gravel pit, 1,500 feet west.
  - Cycle repair shop and surplus store, 3,500 feet northwest.
  - Down gradient to Wurst's dairy operation, 3,900 feet.

- The nearest down gradient well is 4,500 feet away at the first home in the Wurst addition. Twenty-five more are within 7,000 feet. The EIA should include a groundwater study to document how contamination would spread via aquifers.

- The preferred site is near Wells Creek which has had three major flash floods in the last 25 years. Wells Creek empties into the Mississippi River.

- Public snowmobile trails exist across and along the sites.

5.4.1.6 Other important information is not in the application, possibly because of the use of old data and old maps. For example, the farm on the Jane Possehl Property (site "O") is for sale and has been divided into six parcels (Appendix KK). Edina Realty is the listing agent. If the parcels are sold and homes are

built during the time span of site selection, the socioeconomic impact will become more severe. Since site "O" is near site "P", the preferred site, the people and property will be adversely affected. There is no information in the application suggesting lower property values because of the proximity of nuclear waste. A major residential real estate lender in Lake City believes that the "fear of the unknown radiation effects will cause property values to decline in the area of the proposed site." He further states that two of the appraisers that his savings and loan association uses "both definitely agree that property values will decrease." (See Appendix LL.) The EIA needs to address this issue, including how property owners will be compensated for any decrease in property value.

5.4.1.7 Paragraph 6.1.4 of NSP's proposal states: "Development of the proposed project would not impact the availability or use of recreational resources in the area." This statement is not supported by fact. The impacted area has many unique, historical homes dating back to 1854.

5.4.1.8 NSP's application states: "No primary viewing locations, scenic sites, or overlooks have been identified in the project area." The Task Force questions the accuracy of this statement. The application does not take into account that the area is one of the scenic treasures of Minnesota, visited by many people. The public's perception of the scenic value of the area cannot help but be degraded by the construction of nuclear waste sites. Public perception can also impact property values. There are also year-round recreational properties serving those who hunt, fish, hike, and sail. The NSP application does not consider or weigh the effect of the proposed facility on property values. Property values will affect the economic base of the community. A decrease in property values will have adverse effects felt far beyond the boundaries of the proposed facility.

5.4.1.9 NSP's application states: "Goodhue County's population is showing signs of aging." The Task Force questions the accuracy and relevancy of this statement as it pertains to site selection. According to the 1992 *Ministry Area Profile* of the three-mile radius around the Christ Church in Old Frontenac, the median age of residents in 1991 was 38.6 and is projected to increase to 40.8 in 1996. Fifty-seven and one-half percent of this population is projected to be less than 45 years old by 1996. Florence Township has enrolled a total of 114 students in the Lake City School district during the 1995-96 school year, while additional students from Florence Township attend the Red Wing School district.

5.4.1.10 NSP's application states: "The proposed facility in a berm will be relatively innocuous and once constructed will blend with the landscape." While this may be an opinion of NSP engineers, the facility will not be innocuous to the people who live in the area. The EIA must consider the socioeconomic effects — both perceived and tangible — of people who must live with nuclear waste storage. The NSP application does not. The quality of life of these people is perhaps the most important issue that NSP failed to address.

One citizen's comment clearly illustrates this issue of perception. He states: "A major resource of the Frontenac area is the absence of streetlights which provides extraordinary views of the night sky. The illumination which the proposed facility would require would effectively destroy a natural and spiritual resource of Frontenac which the residents have treasured for more than 150 years. Who will put a price tag on an unobstructed view of the heavens?"

Further, the railroad spur to the site proposed by NSP will require construction of a cut-and-fill embankment to achieve the required track grade for access to the site. The proposed rail spur would leave the CP Rail mainline corridor along Highway 61 near the village of Frontenac Station. As proposed, this embankment would be visible to motorists using Highway 61 and the residents on the south and east sides of Frontenac Station. The rail spur and associated embankment would change the topography and vegetation along the proposed route. NSP's alternate site would be visible from County Road 2. The rail spur needed for this site would follow a series of abandoned gravel pits and the sacred burial grounds located on property owned by a family named Savage. A new grade crossing would have to be constructed across the county road.

5.4.1.11 Although required by siting rules, NSP's application omits the impact of the proposed nuclear waste storage site on tourism. In excluding tourism, the application fails to recognize the large extent to which economies in the area are based upon natural resources, including but not limited to seasonal real estate, recreation, sports, local businesses, and produce production and sales. The evaluation of potential impacts upon tourism must include serious consideration of unfavorable public and private perceptions promulgated by the presence of a high-level nuclear waste storage facility.

Because Goodhue County is located on the border of a larger metropolitan area, its recreational drawing area goes beyond the county boundary. Frontenac State Park is an example of this regional recreation resource: in 1994, 91,000 visitors enjoyed the park. The park provides views of Lake Pepin and lies adjacent to the historic town of Old Frontenac. NSP's proposed sites are visible from some of the park's overlooks. A DNR report of the annual number of visitors and campers is at Appendix MM.

Given the expansion of the metropolitan area, it is possible that Frontenac may be a suburb of the greater Minneapolis-St. Paul area. All of the proposed sites in the vicinity would then be adjoining if not surrounded by major concentrations of human population.

The Richard J. Dorer Memorial Hardwood Forest covers large areas south along Highway 61 corridor. This corridor, the Great River Road Corridor, is listed as one of the ten most scenic areas in the United States.

Lake Pepin, a widening of the Mississippi River formed originally by the steeper gradient of the Chippewa River delta, is 22 miles long and up to three miles wide, making it an attractive regional recreation area for sailing, fishing, waterskiing, and other water sports. Snowmobiling and cross-country skiing are popular winter sports in the area.

Lake Pepin also offers extensive tourism and recreational opportunities to the Florence Township and Lake City area. Lake City has the largest marina on the entire Mississippi River, with more than 600 slips for sailboats and motor-powered boats. Florence Township is the location of Hanson's Harbor, with over 100 slips. These marinas provide much spinoff to other businesses and lodging facilities. Lake City also has a variety of seasonal trailer courts which attract people from a large area and mean much to the downtown businesses in Lake City. Many of these would not continue to exist if it were not for the marinas. If the people who have their boats in these marinas do not feel comfortable coming to this area, it would have a very serious impact on these businesses.

Mount Frontenac sits on top of the Mississippi River bluffs approximately 1.5 miles from the

proposed sites on the west side of Highway 61. It offers a panoramic view of the Hiawatha Valley and Lake Pepin for those playing the 18-hole course. In the winter, skiers can enjoy a variety of challenging slopes and trails over the 420-foot vertical drop. This widely acclaimed recreation facility now hosts 60,000 visitors. Given the likely expansion of the metropolitan area, these figures could increase to 100,000 or more within the next 20 years.

The recently developed Frontenac Community Center is located adjacent to the proposed rail spur for the alternate site and just 2,500 feet from the preferred site. This facility is used by the local community for meetings, family reunions, youth gatherings, wedding receptions, and other activities. It has a small playground for children. The proximity of the proposed site and the rail spur to this community facility likely will reduce public enjoyment in this recreation area.

The Task Force questions the accuracy and motive of NSP's classification of the Mississippi River as a C2 waterway, suitable for boating and fishing but not for water body contact. Lake City is the "birthplace of waterskiing," which is the basis of its annual community celebration and is still widely practiced in its waters. While showering after immersion is advisable, Lake Pepin is used by families, individuals and groups for a full complement of recreational purposes, including swimming and fishing. The Florence Township public beach in Old Frontenac is a popular local swimming destination.

5.4.1.12 Florence Township consists of 1,200 residents governed by a three-member Town Board. The annual operating budget of $160,000 is used to maintain 40 miles of township roads and other operating expenses. The township does not have the funds to pay increased emergency response activity bills that would accrue if the proposed nuclear waste sites are constructed in the township.

5.4.1.13 Disruption to Area's Tradition of Sanctuary, Quiet, and Retreat. There are over 30 businesses in the Frontenac area of Florence Township, as documented in a recent postal permit renewal. Their lack of visibility is a direct result of the low-profile mandates of the zoning regulations that keep the quality of life in the area consistent with its long tradition of sanctuary, quiet, and the provision of retreat as well as recreational access.

The Villa Maria Retreat Center, which last year hosted more than 6,000 visitors, is slightly over two miles from the preferred site. A village cemetery and the historic Christ Episcopal Church are likewise within two miles of the preferred site. Siting nuclear waste storage sites in such close proximity to historic, cultural and spiritual resources must be avoided.

5.4.1.14 In March 1995, Florence Township residents unanimously passed a resolution against the storage of high-level radioactive waste in Florence Township. Wacouta Township and Wabasha County passed separate resolutions against dry cask storage. In addition, Red Wing and Lake City jointly signed a resolution stating that storage of nuclear waste should stay at Prairie Island (Appendix NN).

5.4.2 Socioeconomic Issues Associated with the Project Design and Alternate Sites

The shortcomings of NSP's socioeconomic analysis discussed in Section 5.4.1 identify issues to be considered in the development of the EIA. This section contains additional factors for consideration.

5.4.2.1 NRC Licensing Requirements (Appendix X, page 72-19) state that the potential regional impact due to the construction,

operation or decommissioning of a nuclear waste storage facility must be identified. The extent of regional impacts must be determined on the basis of potential measurable effects on the population or environment from storage site activities. The Task Force maintains that **perceptions** of significant impact are just as important as actual impacts and can be qualitatively measured. These perceptions contribute to the present and future character and the distribution of population and other socioeconomic characteristics.

5.4.2.2 Potential Effects of a Site on the Region. The NRC requires (Appendix X, page 72-19) that "[t]he proposed site must be evaluated with respect to the effects on populations in the region resulting from the release of radioactive materials under normal and **accident** conditions during the operation and decommissioning of the [proposed nuclear waste storage site]; in this evaluation both usual and unusual regional and site characteristics shall be taken into account" [emphasis added]. To be credible, the EIA must examine the effects of an accident on populations in the area of an alternate site.

5.4.2.3 Zoning Implications. The zoning designations of any land proposed for NSP siting action may be superseded by a decision to site the proposed nuclear waste storage facility. The impact of new zoning designations could spread to adjacent properties in time.

5.4.2.4 Interstate Transportation of Nuclear Waste. Nuclear waste stored at an off-site location in the state of Minnesota might remain there permanently if no guarantees are provided by states between Minnesota and a federal or commercial repository to allow transport through their state.

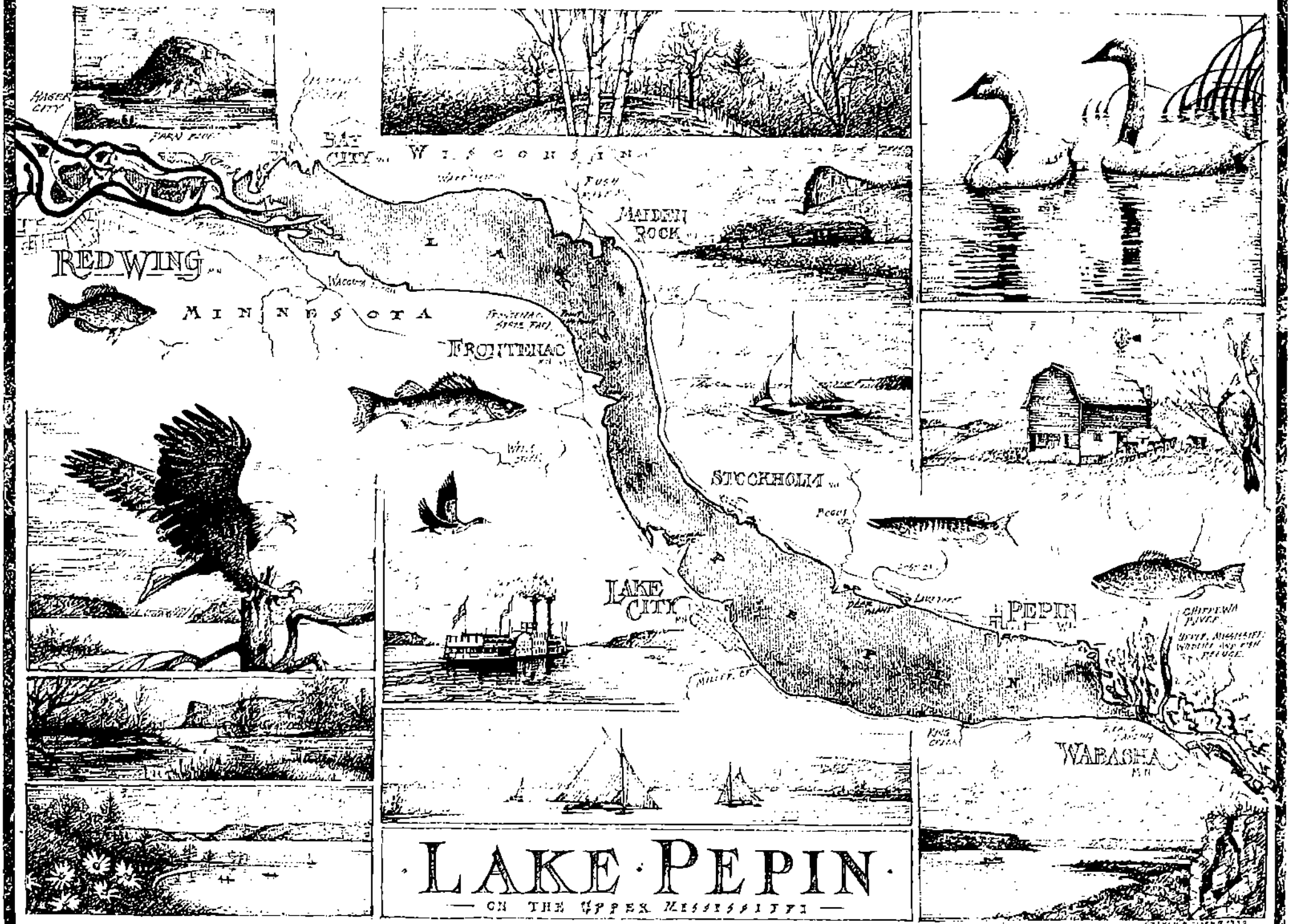
5.4.2.5 The Task Force is charged by the EQB to consider, among other things, the efficient use of resources. Time and money are resources. The Task Force understands that NSP has spent over three years and its rate payers have invested over $10 million in the design, licensing, and construction of the on-site storage facility at the NSP generating plant at Prairie Island. We looked at the potential benefits that would accrue with the design, licensing, construction, operation, and decommissioning of an alternate site, realizing that the existing site might be able to accommodate the nuclear waste generated by NSP until the anticipated opening of a federal repository. We concluded that there was no benefit to an alternate site worth the projected cost of that site.

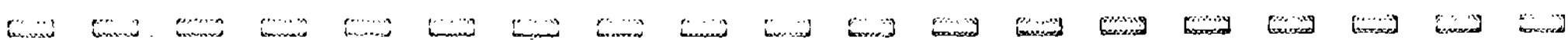
NSP's own analysis better explains the potential problems associated with an alternate site. NSP's April 1991 application for a Certificate of Need for the Prairie Island nuclear waste storage facility included a discussion of alternate sites (Appendix OO) as required by Minnesota Rule 7855 (Appendix L):

*"More specifically, use of a separate location raises the issue of additional transportation. In addition, it requires a significantly more complex environmental review to determine the suitability of a completely new site."*

The second reason NSP did not consider using an alternative location relates to the operational advantage of using the existing PI plant site. As explained in the initial Application, pp. 107-108, use of an alternate site offers significant drawbacks:

1. It would require NSP to purchase or lease a transport cask or seek NRC approval to use a combination transport/storage cask. To date, no combination transport/storage casks have been licensed by the NRC.





2. The transportation of casks would need to be arranged.

3. If a transport cask is used, it would be necessary to construct a separate transfer facility at the new site to move spent nuclear fuel from the transport cask to a storage cask.

4. Additional security personnel would be required. By using the PI site, the existing plant security can be used.

As the EIS demonstrates, use of the PI site results in no significant environmental impact. Therefore, there is no need to consider an alternate site for environmental reasons.

NSP anticipates that an alternate site will cost roughly $49 million in capital costs and another million dollars in annual operating costs. Decommissioning costs are additional, but have been omitted by NSP in its application.

Costs to develop and sustain local emergency response capabilities have also been ignored. The Goodhue County Office of Emergency Management has recognized that an emergency response plan for an off-site storage facility will differ significantly from the existing plan for the on-site storage facility. This agency clearly states:

*But if the facility is not within plant boundaries and is located in a different emergency response area we may have to provide extensive training to those organizations, and duplicate other plans which are already in place for the plant such as communications, establishing emergency classification levels, public information, etc. We will also have to establish emergency planning for the transportation of the fuel assemblies to the off-site facility from the plant. In all there are sixteen planning requirements which will be used for an off-site dry cask facility.* (Appendix PP.)

The EIA should consider NSP's evaluation of benefits to be gained by an alternate site against the additional cost of the site -- a cost that certainly will be borne by future rate payers.

5.4.2.6 Legal Aspects of Environmental Issues. To accomplish the intent of Minnesota Rule 4410.2100 as required by the charge to the Task Force, an analysis of the body of law that seems to underlie the root cause of environmental impacts is appropriate. This body of law defines and regulates how electric utility services are delivered to NSP's customers. The Minnesota and U.S. rules and statutes associated with this body of law are at Appendix QQ and contains a partial, unsorted, and unannotated list of indices. The purpose is simply to show the EQB the enormity and complexity of the laws that have allowed the nuclear waste dilemma to arise to the height of environmental and economical significance we now must face.

This body of law must balance diametrically opposed interests. On one hand, the rules and statutes enable power suppliers to serve their corporate interests as they sell more electricity and, in the case at hand, produce more nuclear waste. On the other hand, the laws serve society's interests as people are encouraged to use available renewable energy resources more efficiently.

A massive, convoluted and complicated body of law has therefore evolved to manage the fundamental contradiction between these competing interests. The "balance" struck by this body of law in Minnesota, however, causes electric utility services to be provided now with the same degree of nuclear dependence as was the case 22 years ago. The stated statutory objective in Minnesota of promoting

conservation and renewable energy development is not being properly served, in spite of ongoing initiatives such as the deliberations of the legislative Electric Energy Task Force. That task force operates under the guideline that the preferred order of preference for energy sources is:

1. Wind and solar,
2. Biomass and low-head or refurbished hydropower,
3. Decomposition gases produced by solid waste management facilities, natural gas-fired cogeneration, and waste materials or byproducts combined with natural gas,
4. Natural gas, hydropower that is not low-head or refurbished hydropower, and solid waste as a direct fuel or refuse-derived fuel,
5. Coal or **nuclear power** (emphasis added).

The body of law indexed at Appendix QQ provides a legal framework that defines the economics of nuclear waste production. This legal framework protects nuclear power plants from fair market competition based on actual energy production costs. Independent power producers are not allowed to get a fair price for their product, while most nuclear energy production costs are externalized. Regulations that require fair competition based on full life-cycle energy production costs should be operating before NSP can have access to any additional nuclear waste storage capacity at any alternate site anywhere.

The body of law is also responsible for preventing conservation, renewable energy, and cogeneration electric utility services options from being able to compete fairly in energy markets. Even though Minnesota Statutes recognize that these options are much better from society's perspective, the rules and regulations prevent investments into these technologies from being able to earn an equitable return. As a result, these options remain marginal while nuclear waste production continues apace.

An analysis of this body of law is essential to the EQB's Environmental Impact Assessment both because (1) of the unacceptable risks and threats created by rules and regulations that unfairly protect investments into nuclear technologies, and (2) because of the relatively small and straight-forward body of law that would be required — and the vastly different set of electric utility options that would be used — if the legal framework defining how electric utility services are provided were governed by two simple principles:

- The financial health of electric utility service providers should be dependent on how efficiently their consumers use electricity rather than by how much electricity they consume; and,

- Competition in energy markets should be based on the actual life cycle energy production costs and benefits of each of the competing technologies, including presently externalized environmental and liability costs.

5.4.2.7 Democracy and Site Selection. Every state, local, or sovereign unit of government should have the right to reject nuclear waste storage facilities that are proposed within its jurisdiction, or to set its own terms for compensation, financial or otherwise. Open and democratic public decision-making processes should be used by each affected unit of government to decide upon acceptance or rejection of a facility and to define acceptable terms and conditions if a facility is not rejected.

Open and democratic public decision-making suffered a serious blow in the NSP process of nuclear waste storage siting in Florence Township. A letter from a Florence Township Supervisor, Mrs. Joan Marshman, to Charles Williams, EQB Chair (Appendix RR) best describes a serious oversight in the democratic process with disastrous results:

*The Goodhue County Alternate Spent Fuel Public Advisory Committee was formed by NSP to look at the sites chosen for possible off-site nuclear waste storage. On February 11, 1995, the sites were made public although these site locations were actually known a few weeks before. All sites chosen were located in Florence Township and there was no representative for the township on the committee.*

*The news media announced the site locations early on February 14, 1995. At 12:20 p.m. on the 14th notification was received by FAX with a note saying, 'Please share this information with other Florence Township Supervisors. If you have any questions please contact me...,' Still no mention of township participation. The town board finally requested a seat on the committee which was granted. The fundamental right of citizen representation was denied or just plain disregarded. Constitutional rights are of paramount importance and cannot be granted only when it is advantageous to the cause or issue. The township's right of notice and participation were neglected to say the least.*

## 5.5 Environmental Issues

5.5.1 Environmental Issues Associated with the NSP Application

5.5.1.1 The EQB's EIA should examine issues regarding the water resources near NSP's two proposed sites. A cursory sampling of over 20 wells within two miles of the proposed sites, for example, shows the average distance to static water at 50 feet. The shortest distance to static water is 10 feet.

In addition, the Wells Creek Watershed apparently includes several aquifers. A cursory look suggests this may include aquifers in the Franconia Sandstone, Galesville Formations and Mount Simon, according to the Wells Creek Watershed Information Paper. Also, both sites are near Wells Creek. Preliminary results show evidence of limited natural reproduction and survival of stocked fingerling trout. Wells Creek may be considered for designation as a trout stream.

5.5.1.2 The data contained in Tables 6-4, 6-5, 6-6, and Figure 6-3 on pages 6-29 through 6-33 of NSP's application may be inaccurate and inadequate. The period of record for these tables is 1951-1980 and their source is the National Weather Service data from the area of the Minneapolis-St. Paul Airport — a location not comparable to the complexity of climate, wind, and air movements in the Hiawatha Valley. The uniqueness of this area in all of its complexities should not be described by generalized and misleading data. To do so might lead to disastrous results. For example, during spring and fall, fog can occur two to three times a week with a density that often obstructs visibility. This might impact security issues as well as the safety and health factors of air dispersion.

5.5.1.3 Land Use and Vegetation. In like manner, the maps and resulting information in the NSP application are out of date and inaccurate. Geologic maps are 29 years old and do not reflect the results of geologic findings since then. Soil surveys are 19 years old and may be outdated. NSP's statements regarding protected waters and wetlands are based on documents 12 years old and may not reflect

recent findings and laws in this area.

5.5.1.4 The Karst Condition. Karst is a type of topography that is formed over limestone, dolomite, or gypsum by dissolving or solution, and that is characterized by closed depressions or sink holes, caves, and underground drainage. Thus, karst can cause unstable surface soil conditions in areas with limestone or other carbonate bedrock.

Groundwater in karst-prone bedrock flows through numerous small fractures and joints as well as in larger channels. As a result, groundwater flow is both more rapid and more unpredictable than in other geologic formations.

According to NSP, some form of carbonate rock underlies about 90% of Goodhue County. Thus, there is a possibility that karstic conditions exist which will cause unstable soil conditions.

NRC regulations require that the proposed nuclear waste storage site have no unstable geological characteristics. NRC regulations also indicate a preference for sites requiring a minimum of engineering to maintain the required stability.

Regarding Karst conditions, the following should be answered:

- How accurate are the existing bedrock maps in the NSP application? Current geologic survey mapping operations by the state are funded, but have not taken place in Goodhue County to date

- Can an overburden of karst-prone bedrock of sufficient thickness eliminate surface collapses? How thick is the overburden, if any, in Goodhue County?

- Can sinkhole formations be predicted accurately based on factors such as: (1) overburden thickness, (2) bedrock characteristics, (3) existing topography, (4) history of sinkholes in the immediate area, and (5) proximity of other karst features?

- Can geotechnical engineering techniques ensure site stability in karst-prone areas? How expensive and difficult are the engineering techniques?

- Are the groundwater flow characteristics of an overburden and the local watershed as important as bedrock geology when considering groundwater susceptibility? Can any spill contamination be limited to the overburden and never reach bedrock?

- To what extent could standard engineering runoff containment methods be used to keep any spills from reaching karst? How feasible and expensive are the engineering techniques?

- If the alternative to siting on karst is to site on sandstone, what are the associated risks? Is there any precedent for siting high-level nuclear waste storage on sandstone?

5.5.1.5 Paragraph 6.5.8 of NSP's application discusses impacts of terrestrial wildlife. Evaluations of wildlife are, by NSP's characterization, based upon "casual surveys performed at one point in time" and represent only a portion of potential species. This characterization does not reflect an accurate or complete picture of the impacted area's natural resources. For example, we should be concerned with the interaction of the "ambient air used for natural convective cooling of the fuel canisters" with the natural air currents in

the river valley upon which various migratory bird populations ride. Further, Frontenac is a nesting area for many species and a major migratory path for songbirds. The EQB should be concerned about the impact on these birds of the addition of manmade radiation to the natural radiation environment.

5.5.1.6 NSP's application wrongly states: "Lake Pepin was formed by Lock and Dam No. 4." Lake Pepin actually was formed by glacial runoff of the Chippewa River, partially damming the Mississippi, thus forming Lake Pepin.

5.5.2 Environmental Issues Associated with the Project Design and Alternate Sites

5.5.2.1 Wildlife. As previously stated, NSP's application relied on a "walk through" of the proposed sites to identify vegetation and wildlife. Such cursory observations are incomplete and misleading. The Task Force suggests that the EQB use a state archeologist, geologist, and a biologist to evaluate the sites in preparation of the EIA. The EIA should address, at a minimum, possible effects on migratory birds in the Mississippi Flyway and impacts on nesting in the immediate impact area. The Minnesota Chapter of the National Audubon Society has certified counts of 130 to 150 bird species recorded in Frontenac alone during a 24-hour period.

5.5.2.2 Surface Water and Wetlands. There are EIA issues regarding the adverse impact on surface waters and wetlands located in Goodhue County; the effect of evaporation, condensation, and precipitation input routes of radiation contamination of groundwater and surface water; and the impact on wetlands and streams along proposed transportation route for risk scenarios. If the site is located over an aquifer, measures must be taken to preclude the transport of radioactive materials to the environment in the event of an accident or incident. Lastly, according to NRC licensing requirements (Appendix X, page 72-19), the EIA must assess each proposed site to avoid the long-term and short-term adverse impacts associated with the occupancy and modification of floodplains.

5.5.2.3 Archeological and Historical Resources. The Old Frontenac Historic District, located approximately two miles northeast of NSP's proposed sites, is listed on the National Register of Historic Places. There are other places of historic value in Goodhue County, such as the historical designated places and buildings in Lake City, Hay Creek Township, Welch Township, Stanton Township, and Red Wing. See Appendix HH for a partial list of the County's historical resources.

5.5.2.4 Native American Burial Mounds and Sacred Areas. In the development of the EIA, the EQB needs to research the archives of the Minnesota Historical Society and the tribal communities associated with these mounds. State and federal requirements and regulations also need to be reviewed. All known sites should be put on a single map with the scale clearly identified. This map should then be submitted to tribal elders. Undoubtedly, there will be sites not shown on the map. Tribal elders could indicate the number of such missing sites without disclosing their actual location in the public record.

## 5.6 The Permanency Issue Revisited

5.6.1 NSP's Certificate of Need Application

The anticipated length of time may be ascertained from NSP's original Application for Certificate of Need, PUC Docket No. E002/CN-91-19, where NSP anticipated that it would need the proposed facility **at least** for the duration of its licensing period, or until the year

2014. Since the time of that application, the potential for storage at a federal repository has only become more bleak.

5.6.2 The Appellate Court Decision

Although NSP's application does not use the words "temporary" or "permanent" to describe its proposed off-site nuclear waste storage facility, this issue has been settled by Minnesota's Appellate Court. Under the laws of the state of Minnesota, it is considered permanent for the purposes of the Radioactive Waste Management Act. Further, the Radioactive Waste Management Act defines the term "temporary storage" as a period of up to one year for nuclear waste entering Minnesota. See Minnesota Statute §116C.73 (Appendix Q) where the Legislature allows shipment of radioactive waste into the state ...*for temporary storage in accordance with applicable federal and state law for up to 12 months pending transportation out of state.*

This act would affect the length of storage of nuclear waste re-entering Minnesota from an interim private commercial facility such as the Mescalero facility upon termination of storage terms there and before a national repository were operational.

5.6.3 The Risk of Permanency

The above statement implies that there is a risk associated with storage of nuclear waste at an off-site facility. The EIA must address those risks and the many issues related to the more permanent storage of high level radioactive waste in Goodhue County and the state of Minnesota. To assist in this evaluation, the Task Force has developed the concept of a "Criteria Grid" that would match the numerous rules and regulations concerning the siting of an off-site facility with criteria researched and developed by the Task Force. Completion of this grid in the EIA should quickly lead to conclusions about the feasibility of a specific proposed site, both in the short term and the long term.

5.6.4 Formal Agreement Suggested

To partially alleviate public concerns regarding the permanency of a proposed nuclear waste storage site in Goodhue County, a local citizen has drafted an agreement between NSP and Florence Township which guarantees the orderly removal of nuclear waste upon operation of a national permanent repository. The agreement also establishes an impacted township and its citizens as third party beneficiaries to the agreement for purposes of future litigation. A copy of the proposed agreement is at Appendix SS.

5.6.5 An Independent View

Dr. Marvin Resnikoff represented the Prairie Island Mdewakanton Sioux Indian Community in hearings before the Minnesota PUC. Part of his testimony focused on the likelihood of the federal government establishing a permanent nuclear repository by the year 2014. His findings (Appendix TT), independent of those of this Task Force, are:

*I do not believe it is likely that a high-level waste repository will be constructed in Nevada and even less likely that either a repository or a monitored retrievable storage (MRS) will be available by the year 2014. With this scenario in mind, I have a different approach to the management of Prairie Island irradiated fuel, assuming it continues to be generated. NSP and its contractors place great reliance on contracts and understandings with the Department of Energy, potential litigation to enforce these agreements, and Congressional intent. But none of these assumptions is likely to produce an operating repository in Nevada; NSP should prepare for the long term.*

## 6.0 Alternate Site Identification and Analysis

# SUMMARY

### Nomination of 16 Alternate Sites

The chair of the EQB charged the Task Force to: *"Determine if any additional sites should be considered, identify such sites, and conduct an environmental review of alternate sites consistent with the siting criteria provided in Minnesota Rule 4400.3310."*

Advertisements were placed in area newspapers to determine if any sites should be considered besides the two proposed by NSP. As a result, 16 additional sites were proposed in Goodhue County. Sites were located in five townships, including (alphabetically): Florence, Hay Creek, Stanton, Wacouta and Welch. Sites also were proposed that were within Red Wing city limits.

### Siting Criteria Compiled

Before evaluating alternate sites, the Task Force compiled a list of siting criteria from state and federal regulations and from citizen comments. The resulting three pages of criteria were pared down to 10 criteria. The first six criteria are from 4400.3100; the last four are from federal regulations and citizen comments. Adopted siting criteria include:

- effects on human settlement, including permanency
- effects on unique natural resources
- effects on public health and safety
- effects on natural environment
- site location
- site security concerns
- effects on future development
- effects on land based economies
- geologic foundation of the site
- effects on historic/archeological resources

The Task Force calculated a minimum land area requirement. Federal regulations require a 100-meter controlled area around the storage and handling area (which measures 340- by 520-feet in NSP's application). This translates into a minimum land area requirement of 26 acres.

### Site Descriptions, Environmental Data Collected

The Alternate Site Subcommittee traveled to all 16 sites. They compiled data based on their observations, as well as information from state agencies and area residents.

Data collected included land based economies, population centers, hydrology, protected wetlands, soils, flood plains, transportation concerns, excluded lands, etc. Also, aerial photos help show the location of each site and the surrounding area.

### 16 Alternate Sites Evaluated

Using the information available, the Task Force examined and discussed each alternate sites. Task Force members then evaluated each site based on the 10 siting criteria (see above). Evaluations for each site were compiled and presented to the Task Force.

The Task Force then voted on each site. The question: Should this site be sent to the EQB as a potential nuclear waste storage facility. Fifteen sites were eliminated.

Additional information on the NSP Ash Disposal in Red Wing was requested. The entire Task Force visited the site and examined the additional information. The Task Force then voted not to send the NSP Ash Disposal site to the EQB.

## 6.1 INTRODUCTION

Citizens nominated 16 proposed alternate sites in Goodhue County to store NSP's radioactive nuclear waste from the Prairie Island facility. The Alternate Site Subcommittee visited all 16 sites (See Figure 4). The Task Force then evaluated each site against a set of predetermined criteria (Appendix UU). This section summarizes actions taken by the Task Force to reach the decision that there is no acceptable alternate site available in Goodhue County.

6.1.1 Sources of information referenced to identify potential siting considerations are as follows:

- Minnesota Rule 4400.3310, Siting Considerations (as directed). (Appendix C, page 13)
- Minnesota Statute § 116C.57, Power Plant Siting Act, including but not limited to Subdivision 4 -- Considerations in Designating Sites and Routes. (Appendix C, pp. 2-4)
- Minnesota Statute § 116C.76, Nuclear Waste Depository Release into Groundwater, including, but not limited to, Subdivision 1 -- Radionuclide release levels, Subd. 2 -- Disposal Restricted, and Subd. 3 -- Protection Against Radionuclide Release. (Appendix VV)
- Minnesota Rule 4410.7900, Exploratory Drilling for the Disposal of High-Level Radioactive Waste, including but not limited to, Subd. 2 - Required Data. (Appendix WW)
- Minnesota Rule 7855, Public Utilities Commission, Large Energy Facilities, including but not limited to 7855.0620 -- Historical and Forecast Data, Subd. E, and 7855.0640 -- Description of Alternate Sites. (Appendix L, pp. 840-841)

6.1.2 Assumptions and Rules of Evaluation

- Permanency. Alternate sites are for the storage of radioactive nuclear waste for an unknown duration. This assumption is necessary because of the lack of progress by the federal government to find, construct, and operate a permanent national repository and the recent DOE decision to terminate efforts to find and license a temporary monitored retrievable storage (MRS) facility.
- Transportation. Both truck and rail are potential methods for transporting radioactive nuclear waste. The final design of the multi-purpose canister to be used by NSP will depend on the mode of transportation selected.
- Excluded Land. The Task Force will follow Minnesota Rules regarding excluded and conditionally excluded areas (see figure 6). In addition, the Task Force will consider the adverse effects of proposed sites on areas located outside the boundaries of these areas.
- Minimum Land Area Requirement. The minimum size required of an alternate site is 26 acres, with a length of at least 1,178 feet and width of at least 1,028 feet. A land area larger than 26 acres

will best accommodate both truck and rail transportation options. A land area larger than 26 acres may be required to accommodate on-site emergency operations.

- Common Sense. Important environmental data is not available. For example, a Geologic Atlas of Goodhue and Wabasha counties could provide unbiased scientific data on the area's geologic and groundwater resources: unfortunately, time constraints do not allow for such vital data to be gathered. Common sense, therefore, dictates that when sound scientific data is not available, the Task Force will err on the side of safety to protect the people and natural resources of this state.

6.1.3 Response to Charge

The strategy to meet one part of the EQB Charge to the Task Force (Determine if any additional sites should be considered, identify such sites, and conduct an environmental review of alternate sites) is as follows:

- Encourage nomination of alternate sites.
- Determine siting criteria before evaluating proposed alternate sites.
- Use siting criteria to make a preliminary evaluation of each proposed alternate site. The purpose of this evaluation is to select those sites which warrant a more detailed review. Provide these site(s) to the EQB by letter report no later than January 15, 1996.
- Conduct a thorough, detailed environmental review of all sites provided to the EQB.

6.1.4 Minimum Area Requirements

The Task Force assumes the minimum land area required for an alternate site is 26 acres (Figure 5). This accommodates a 370-foot by 520-foot storage and handling area proposed by NSP (4.4 acres), plus the 100 meter controlled area required by 10 CFR 72.106(b): "...The minimum distance from the spent fuel or high-level radioactive waste handling and storage facilities to the nearest boundary of the controlled area shall be at least 100 meters." (Appendix X)

This "controlled area" must be secure. The Task Force does not subscribe to the NRC rule that "The controlled area may be traversed by a highway, railroad or waterway, so long as appropriate and effective arrangements are made to control traffic and to protect public health and safety." [10 CFR 72.106 © (Appendix X)]

An EQB staff survey of other facilities found the NSP Prairie Island storage and handling area is approximately 3.2 acres, according to the EQB. *The reason for a larger off-site facility [4.4 acres] is partly due to the need for a railroad spur coming into the facility. For comparison, other ISFSI applications have been reviewed. The smallest facility size was about 3.5 acres, but others are much bigger,* according to the survey.

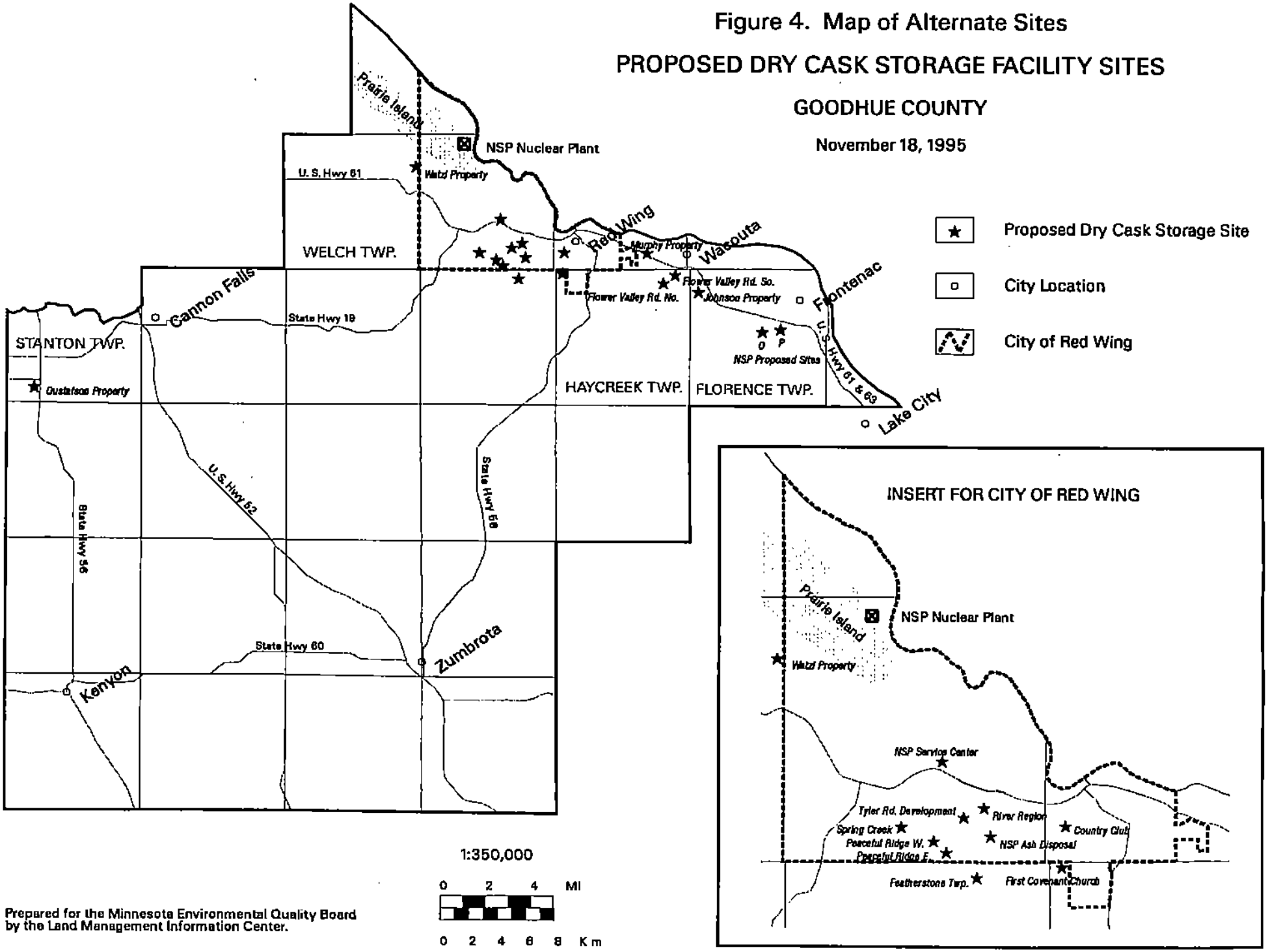
Proposed sites less than 26 acres could be enlarged through eminent domain. The Task Force would then evaluate the human and environmental impacts of such action.

# Figure 4. Map of Alternate Sites

## PROPOSED DRY CASK STORAGE FACILITY SITES

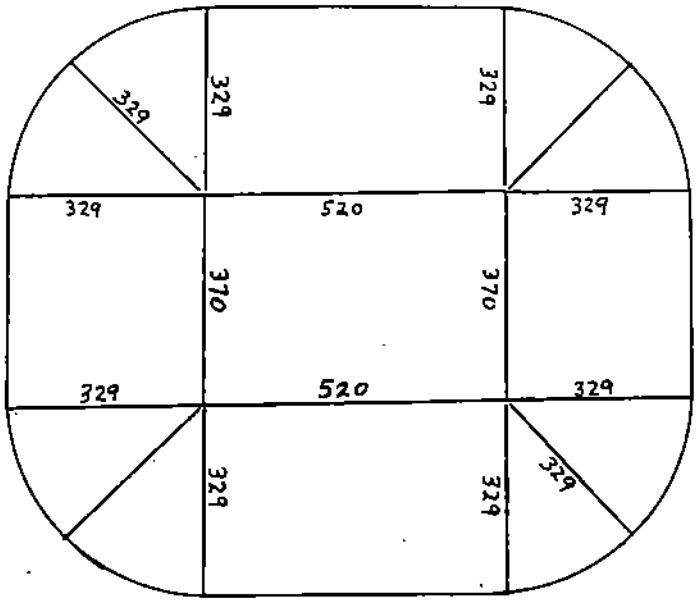
### GOODHUE COUNTY

November 18, 1995




Prepared for the Minnesota Environmental Quality Board
by the Land Management Information Center.

**Figure 5. Area Required of the Proposed Storage Site**




Handling and storage area: 192,400 square feet (4.4 acres). 100-meter controlled area: 925,670 square feet (21.3 acres). Total area: 1,118,070 square feet (25.7 acres).

## 6.2 Siting Criteria

For details, see Appendix UU, Siting Criteria for the Goodhue County Off-site Independent Spent Nuclear Fuel Storage Facility. What follows in this section is a summary of Appendix UU.

### 6.2.1 Accepted Definitions

The Task Force accepts the definitions adopted by the EQB as necessary to designate the site for a dry cask storage facility and to issue a Certificate of Site Compatibility. This includes Subparts 1, 2, 3, 4, 5, 6, 6a, 7, 9, 10, 12, 13, 14, 18, 19 and 20, from Minnesota Rules, 4400.0200 (Appendix C, pages 9-10).

### 6.2.2 Adopted Definitions

The Task Force also adopts the following definitions as necessary to fully comply with its charge.

- Excluded Land. "Excluded land" is land within Goodhue County that will not satisfy applicable State and Federal legislative or regulatory requirements because of a condition or designation.

- Conditionally excluded land. "Conditionally excluded land" is land within Goodhue County that shall not be designated for nuclear waste sites unless all feasible and prudent alternatives would have greater adverse human and environmental impact.

- Comparison factor. "Comparison factor" is a site-specific attribute used to evaluate and compare the relative feasibility of proposed nuclear waste sites.

## 6.3 Land Excluded from Consideration by Law

6.3.1 Excluded Land

6.3.1.1 MN Rules 4400.3310, Subp. 2 Site exclusions (Appendix C, page 16). This rule lists 11 areas, such as national and state parks, which must be excluded from consideration. See Figure 6.

*These areas shall not be designated as a site for [a nuclear waste storage site] except for use for water intake or discharge facilities....[The task force] shall also consider the adverse effects of proposed sites on these areas which are located wholly outside of the boundaries of these areas.*

6.3.1.2 Energy Policy and Storage of Spent Nuclear Fuel Act, Article 6, Section 1, Subd. 1. (Appendix N)

*...a high-level radioactive waste facility that is located in Goodhue County but not on Prairie Island...*

6.3.2 Conditionally Excluded Land

6.3.2.1 Minnesota Rule 4400.3310, Subp. 3, Site Exclusions when Alternative Sites Exist (Appendix C, page 16). This rule lists 8 areas, such as wildlife management areas, which are conditionally excluded. See Figure 6.

*Certain resources within the state shall not be designed for (nuclear waste storage sites) unless all feasible and prudent alternatives would have greater adverse human and environmental impact. Designation of a site in these areas shall be consistent with Minnesota Statutes, section 116C.53, subdivision 1 (Appendix C, page 2), and shall include conditions to minimize impacts which adversely affect the unique character of these areas Economic considerations alone shall not justify approval of these areas...*

6.3.2.2 Minnesota Rules 4400.3310, Subp 4, Prime Farmland Exclusion. (Appendix C, page 17)

*When there exists a feasible and prudent alternative with less adverse environmental and noncompensable human effects, no [nuclear waste site] shall be designated where the development portion of the plant site includes more than 0.5 acres of prime farmland per megawatt of net generating capacity, and no makeup water storage reservoir or cooling pond site shall include more than 0.5 acres of prime farmland per megawatt of net generating capacity.* ***[The difficulty of using Power Plant Siting criteria to site the proposed nuclear waste storage facility is painfully obvious here.]*** *These provisions do not apply to areas located within home rule charter or statutory cities; areas located within two miles of home rule charter or statutory cities of the first, second, and third class; or areas designated for orderly annexation under Minnesota Statutes, section 414.0325.* (Appendix XX)

## 6.4 Siting Considerations

6.4.1 Minnesota Rules 4400.3310 Subp 1, Considerations.

To facilitate the evaluation and designation of proposed nuclear waste storage sites, the Task Force shall be guided by the act and the considerations cited at Appendix C, page 15. See Figure 6 for a list of these criteria.

6.4.2 Minnesota Statute 116C.57, Subd. 4, Considerations in Procedures Designating Sites and Routes (Appendix C)

To facilitate the study, research, evaluation and designation of sites and routes, the Task Force

shall be guided by but not limited to the responsibilities, procedures, and considerations listed at Appendix C, pages 2-3 (except items 4, 8, 9, and 10) and Figure 6.

6.4.3 10 CFR NRC Part 72, Licensing Requirements (Appendix X)

6.4.3.1. Subpart E, Siting Evaluation Factors. 72.102. Geologic and Seismological Characteristics, page 72-19:

*(a.)[1] ...sites will be acceptable if the results from on-site foundation and geological investigation, literature review, and regional geological reconnaissance show no unstable geological characteristics, soil stability problems, or potential for vibratory ground motion...*

*(e.) ...Sites with unstable geologic characteristics should be avoided.*

6.4.3.2 Subpart F, General Design Criteria. 72.122 Overall Requirements, page 72-20:

*(ii.)[4] If the [proposed nuclear waste storage site] is located over an aquifer which is a major water resource, measures must be taken to preclude the transport of radioactive materials to the environment through this potential pathway.*

6.4.4 Minnesota Statute 116C.76, Nuclear Waste Depository Release into Groundwater (Appendix VV)

*Subd. 1. Radionuclide Release Levels. Radionuclide waste management facilities for spent nuclear fuel or high-level radioactive wastes must be designed to provide a reasonable expectation that the undisturbed performance of the radioactive waste management facility will not cause the radionuclide concentrations, averaged over any year, in groundwater to exceed certain limits.* These limits are cited at the reference.

*Subd. 2. Disposal Restricted. The location or construction of a radioactive waste management facility for high-level radioactive waste is prohibited where the average annual radionuclide concentrations in groundwater before construction of the facility exceeds the limits in Subdivision 1.*

*Subd. 3. Protection Against Radionuclide Release. Radioactive waste management facilities must be selected, located and designed to keep any allowable radionuclide releases to the groundwater as low as reasonably achievable.*

6.4.5 Minnesota Rule 4410.7928, Exploratory Drilling for the Disposal of High Level Radioactive Waste, Submission of Splits and Data, Subd.2, Required Data (Appendix WW)

*Pursuant to Minnesota Statutes, § 116C.724, subd. 3, the permittee or any person conducting geologic, hydrologic, or geophysical testing or any other studies relating to disposal is required to provide unrestricted access to all raw and interpreted data to the chair and director of the Minnesota geological survey or their designated representatives within 30 days.* The raw and interpreted data included are cited in the reference.

## Figure 6. SITE SCREENING SUMMARY

| Factor | Excluded | Conditionally Excluded | Consider in Evaluation |
|---|---|---|---|
| **Energy Policy and Storage of Spent Nuclear Fuel Act, Subp. 2** | | | |
| Prairie Island | X | | |
| **Minnesota Rules 4400.3310, Subp. 2** | | | |
| National parks | X | | |
| National historic sites and landmarks | X | | |
| National historic districts | X | | |
| National wildlife refuges | X | | |
| National monuments | X | | |
| National wild, scenic, and recreational riverways | X | | |
| State wild, scenic, and recreational rivers and their land use districts | X | | |
| State parks | X | | |
| Nature conservancy preserves | X | | |
| State scientific and natural areas | X | | |
| State and nationalwilderness areas | X | | |
| **Minnesota Rules 4400.3310, Subp. 3** | | | |
| State registered historic sites | | X | |
| State historic districts | | X | |
| State wildlife management areas (except in cases where the plant cooling water is to be used for wildlife management purposes) | | X | |
| County parks | | X | |
| Metropolitan parks | | X | |
| Designated state and federal recreational trails | | X | |
| Designated trout streams | | X | |
| The rivers identified in Minnesota Statutes, section 85.32, Subd. 1 | | X | |

The Task Force shall also consider the adverse effects of proposed sites on these areas which are located wholly outside the boundaries of these areas.

The Task Force shall also consider the adverse effects of proposed sites on these areas which are located wholly outside the boundaries of these areas

Figure 6. SITE SCREENING SUMMARY (continued-2)

| Factor | Excluded | Conditionally Excluded | Consider in Evaluation |
|---|---|---|---|
| **Minnesota Rules 4400.3310, Subp. 1** | | | |
| Effects on human settlement, including but not limited to displacement, noise, aesthetics, community benefits, cultural values, recreation and public services | | | X |
| Effects on public health and safety | | | X |
| Effects on land-based economies, including but not limited to agriculture, forestry, tourism and mining | | | X |
| Archaeological and historic resources | | | X |
| Effects on the natural environment | | | X |
| Rare and unique natural resources | | | X |
| Cumulative present and future demands on air and water resources | | | X |
| Application of design options which maximize energy efficiencies, mitigate adverse environmental effects and could accommodate expansion of generating capacity | | | X |
| Use of existing nuclear waste storage sites | | | X |
| Use of existing transportation, pipeline, and electrical transmission systems | | | X |
| Costs of constructing and operating the facility which are dependent on design and site | | | X |
| Adverse human and natural environmental effects which cannot be avoided | | | X |
| **Minnesota Statute 116C.57, Power Plant Siting Act, Subd. 4** | | | |
| Effects on land, water and air resources | | | X |
| Environmental evaluation of sites and routes proposed for future development and expansion and their relationship to land, water, air and human resources | | | X |
| Analysis of the direct and indirect economic impact including agricultural land lost or impaired | | | X |
| Evaluation of adverse environmental effects should the site be accepted | | | X |
| Evaluation of alternatives to the applicant's proposed site | | | X |
| Evaluation of irreversible and irretrievable commitments should the proposed site be approved | | | X |
| Where appropriate, consideration of problems raised by other state and federal agencies and local entities | | | X |

**Figure 6. SITE SCREENING SUMMARY** (continued-3)

| Factor | Excluded | Conditionally Excluded | Consider in Evaluation |
|---|---|---|---|
| **Additional Considerations** | | | |
| Permanency issue (ALJ's ruling) | | | X |
| Geological and seismological characteristics | | | X |
| Groundwater protection | | | X |
| Watershed protection | | | X |
| Transportation concerns | | | X |
| Dangers associated with multiple handling of casks | | | X |
| Ability to meet site security concerns | | | X |
| Ability to safely manage a cask failure | | | X |
| Ability to protect alternate site from terrorists | | | X |
| Impact on sustainable development | | | X |
| Impact on area within proximity of the site | | | X |
| Minimum acceptable distance to nearest resident | | | X |
| Minimum acceptable land area requirement | | | X |
| Application of Task Force Grid | | | X |
| Evaluation of risk from accidental or deliberate large aircraft crash on site (portions of Goodhue County lie beneath commercial and military air corridors) | | | X |
| Evaluation of risk from major natural events (1,000 year flood, meteor impact, etc.) | | | X |
| Long-term health effect of exposure to low levels of radiation | | | X |

## 6.5 Evaluation of Proposed Alternate Sites

The Alternate Site Subcommittee visited each of the 16 sites (one site was offered twice) proposed to the Task Force by concerned citizens. They also examined road and digital maps (Appendix YY) prepared by the EQB support staff which overlaid information such as population densities, major roads, hydrology data, flood plains, lakes and streams, wetlands, new homes (1992-94), and protected lands on a map of Goodhue County. Information was copyrighted in 1995 and furnished by the Goodhue County Surveyor's Office of Geographic Information. Additionally, the subcommittee studied aerial photographs of each of the proposed sites (Appendix ZZ) to analyze pertinent facts such as the proximity to rail lines, possible truck transport routes, distances to nearby residences and industrial facilities, and the location of nearby excluded or conditionally excluded areas such as trout streams, recreational areas and park facilities. Then, as much as reasonably possible with the information available and the time permitted, they evaluated each site with respect to the extensive criteria the Task Force had approved. On November 18, 1995, the subcommittee members presented to the Task Force all of the information they had collected and analyzed for each site.

After the subcommittee report on a given site, each member of the Task Force ranked each site against the criteria as feasible and prudent, not feasible and/or not prudent, or inconclusive. The rankings were collected, tabulated and the results shown to the Task Force (Appendix AAA). Based on the tabulations, the Task Force then voted either not to forward the site to the EQB for further consideration or to retain the site for further analysis before making a final decision.

This methodology, known by some as the Modified Delphi technique, usually resulted in unanimous decisions. The Chair interviewed some of the Task Force members after the November 18th meeting to determine if they thought the process allowed them to make rational and well thought-out decisions. All those interviewed responded affirmatively. As the audio recordings of the meeting will validate, members of the public who witnessed the process believed it to be fair and extremely effective.

It should be noted that some Task Force members and citizens expressed frustration with available siting criteria. For example, current laws protect parks, wetlands, state trails, and wildlife refuges from becoming a nuclear waste storage facility. However, no such exclusionary protection is afforded people or the community in which they live. Some participants said regulatory agencies appear to place a higher value on endangered species and trout streams than they do on people and homes. The Task Force did appreciate Minnesota Rules 4400.3310, Subp. 1., which allows for the consideration of what effect a nuclear waste facility might have on people, public health and public safety.

The results of the evaluations and voting are discussed in subsequent paragraphs in this section.

### 6.5.1 The Johnson Property

- Location: Northwest Florence Township; Plots 32-006-1800 and 32-007-0700

- Owner: Amy L. Johnson, 30662 Ski Road, Red Wing, Minnesota

- Proposed by: Amy L. Johnson

- Description: The property includes 30 to 40 acres in a valley. A ravine cuts through the middle of the valley and drains into a protected wetland approximately one-quarter mile away. A USGS topographic map shows a waterway in the valley.

  The nearest residence belongs to Ms. Johnson, who lives on the property. The nearest population center is Wacouta about two miles away. The population density is less than 50 people per square mile. The distance to Frontenac Golf Course and Ski Hill is approximately two miles.

  Road access to the site is limited. A rail spur to the site would measure approximately one-half mile and would cross a gravel road. Site topography does not appear to offer a level, 26-acre building site. Substantial excavation and filling may be required to create a level site.

  A map analysis and aerial photos indicate that both road and rail transport modes involve use of bridges and routes through heavily populated areas.

- Task Force Evaluation: The table below provides a short form of the criteria previously listed in this report. An "X" denotes how the majority of the Task Force voted with regard to each criterion.

## The Johnson Property

| Criteria | Feasible and prudent | Not feasible and/ or not prudent | Inconclusive |
|---|---|---|---|
| **Effects on human settlement** including permanency, community benefits, cultural values, aesthetics, recreation, etc. | | X | |
| **Effects on public health and safety** including transportation concerns | | X | |
| **Effects on land based economies** including agriculture, tourism, forestry, etc. | | X | |
| **Effects on historic and archeological resources** | X | | |
| **Effects on the natural environment** | | X | |
| **Effects on rare and unique natural resources** | | | X |
| **Effects on future development** | | | X |
| **Geologic foundation of the site** | | | X |
| **Site security concerns** | | X | |
| **Site location** including size, topography and proximity to nearby sensitive areas | | X | |

**Task Force Decision**. Based on the foregoing assumptions, criteria, description, and evaluation, the Task Force voted unanimously not to forward the Johnson property to the EQB as an alternate nuclear waste storage site.

## The Johnson Property

| Criteria | Feasible and prudent | Not feasible and/ or not prudent | Inconclusive |
|---|---|---|---|
| **Effects on human settlement** including permanency, community benefits, cultural values, aesthetics, recreation, etc. | | X | |
| **Effects on public health and safety** including transportation concerns | | X | |
| **Effects on land based economies** including agriculture, tourism, forestry, etc. | | X | |
| **Effects on historic and archeological resources** | X | | |
| **Effects on the natural environment** | | X | |
| **Effects on rare and unique natural resources** | | | X |
| **Effects on future development** | | | X |
| **Geologic foundation of the site** | | | X |
| **Site security concerns** | | X | |
| **Site location** including size, topography and proximity to nearby sensitive areas | | X | |

**Task Force Decision**. Based on the foregoing assumptions, criteria, description, and evaluation, the Task Force voted unanimously not to forward the Johnson property to the EQB as an alternate nuclear waste storage site.

### 6.5.2 The Watzl Property

- Location: East Central Welch Township; Section 12, Township 113, Range 016
- Owner: Ed Watzl, RR 2, Welch, Minnesota
- Proposed by: Ed Watzl
- Description: The property includes 135 acres of agricultural land near County Road 31. The bluff-top property includes gently rolling fields. The site may be visible from a public road.

Homes are visible from the property. The nearest residence appears to be about one-quarter mile away. The nearest population center is the Prairie Island Indian Community about two miles away. On-site, the population density is less than 50 people per square mile. The Vermillion River is about one mile away. The route to the site would cross a bridge over this river.

A steep grade may be required to reach the site. An improved county highway (18) passes within one-quarter mile of the site. Large electric transmission lines cross the property.

## The Watzl Property

| Criteria | Feasible and prudent | Not feasible and/ or not prudent | Inconclusive |
|---|---|---|---|
| **Effects on human settlement** including permanency, community benefits, cultural values, aesthetics, recreation, etc. | | X | |
| **Effects on public health and safety** including transportation concerns | | X | |
| **Effects on land based economies** including agriculture, tourism, forestry, etc. | X | | |
| **Effects on historic and archeological resources** | | | X |
| **Effects on the natural environment** | | X | |
| **Effects on rare and unique natural resources** | | | X |
| **Effects on future development** | | | X |
| **Geologic foundation of the site** | | | X |
| **Site security concerns** | X | | |
| **Site location** including size, topography and proximity to nearby sensitive areas | | X | |

**Task Force Decision.** Based on the foregoing assumptions, criteria, description, and evaluation, the Task Force voted 12 to 3 not to forward the Watzl property to the EQB as an alternate nuclear waste storage site.

### 6.5.3 The Gustafson Property

- Location: Southwest Stanton Township; west half, northwest quarter and southwest quarter of Section 32

- Owner: Reuben F. and Merril B. Gustafson, Stanton Township

- Proposed by: Robert Johnson, Task Force Member

- Description: The property includes over 40 acres of level, agricultural land. The site is south of Stanton and southwest of the Highway 19 and Highway 56 intersection. The nearest residence is about one-quarter mile away. The nearest population center is Stanton, about one-half mile away. Homes are visible in most directions. The site would be visible from public roads. The population density is less than 50 people per square mile.

- Prairie Creek is located along the southern edge and east of the property. Stanton Airport is north of the property. The airport is a recreational site for skydivers and glider pilots.

- The site is similar to those proposed by NSP in Florence Township except the site is located over 20 miles from Prairie Island and is not near an existing rail line. An abandoned railroad bed passes about one-half mile northwest of the proposed site.

## The Gustafson Property

| Criteria | Feasible and prudent | Not feasible and/ or not prudent | Inconclusive |
|---|---|---|---|
| **Effects on human settlement** including permanency, community benefits, cultural values, aesthetics, recreation, etc. | | X | |
| **Effects on public health and safety** including transportation concerns | | X | |
| **Effects on land based economies** including agriculture, tourism, forestry, etc. | | X | |
| **Effects on historic and archeological resources** | | | X |
| **Effects on the natural environment** | | X | |
| **Effects on rare and unique natural resources** | | | X |
| **Effects on future development** | | X | |
| **Geologic foundation of the site** | | | X |
| **Site security concerns** | | X | |
| **Site location** including size, topography and proximity to nearby sensitive areas | | X | |

**Task Force Decision**. Based on the foregoing assumptions, criteria, description, and evaluation, the Task Force voted unanimously not to forward the Gustafson property to the EQB as an alternate nuclear waste storage site.

### 6.5.4 Flower Valley Road West (NSP Site K)

- Location: Northeastern Hay Creek Township; half in Plot 002-0100 and half in Plot 002-0701, Township 112, Range 14W
- Owner: Not known
- Proposed by: Steve Reichert, Florence Township
- Description: This property made it to Phase II of the NSP Siting Process. It includes over 40 acres of agricultural land. It is located one mile south of Highway 61 and west of Flower Valley Road. Homes are visible in most directions. The nearest residence is about 1,000 feet away. The site would be visible from Flower Valley Road. The nearest population center is Wacouta, about two miles away. The population density is less than 50 people per square mile.

The site is adjacent to Bullard Creek, a designated trout stream. Minnesota Rule 4400.3310 Subp. 3 states to consider the adverse effects on areas located near conditionally excluded sites, including designated trout streams.

Security may be a concern; area bluffs may provide a direct line of sight to the casks.

Aerial photographs indicate that both rail and road routes to the site would pass through heavily populated areas and cross over several bridges, the weight limitations of which are unknown. Additionally, bridges provide an excellent target for transportation disruption operations.

## Flower Valley Road West (NSP Site K)

| Criteria | Feasible and prudent | Not feasible and/ or not prudent | Inconclusive |
|---|---|---|---|
| **Effects on human settlement** including permanency, community benefits, cultural values, aesthetics, recreation, etc. | | X | |
| **Effects on public health and safety** including transportation concerns | | X | |
| **Effects on land based economies** including agriculture, tourism, forestry, etc. | | X | |
| **Effects on historic and archeological resources** | | | X |
| **Effects on the natural environment** | | X | |
| **Effects on rare and unique natural resources** | | X | |
| **Effects on future development** | | X | |
| **Geologic foundation of the site** | | | X |
| **Site security concerns** | | X | |
| **Site location** including size, topography and proximity to nearby sensitive areas | | X | |

**Task Force Decision**. Based on the foregoing assumptions, criteria, description, and evaluation, the Task Force voted unanimously not to forward the Flower Valley Road West location to the EQB as an alternate nuclear waste storage site.

### 6.5.5 Flower Valley Road East (NSP Site J)

- Location: Northeastern Hay Creek Township and south central Wacouta Township; half in Plot 001-0101 and half in Plot 001-0100, Township 112, Range 14W

- Owner: Not known

- Proposed by: Steve Reichert, Florence Township

- Description: This property made it to Phase II of the NSP Siting Process. It is an active gravel pit operation located one-quarter mile south of Highway 61. It is over 40 acres in size. The nearest population center is Wacouta, about one mile away. The nearest residence is about one-quarter mile away. The population density is less than 50 per square mile. Homes are visible from the site. The site may be visible from Highway 61 and Circle S Road.

The site is adjacent to Bullard Creek, a designated trout stream. Minnesota Rule 4400.3310 Subp. 3 says to consider the adverse effects on areas located near conditionally excluded sites, including designated trout streams.

Security may be a concern; area bluffs may provide a direct line of sight to the casks.

Aerial photographs indicate that both rail and road routes to the site would pass through heavily populated areas and cross over several bridges, the weight limitations of which are unknown. Additionally, bridges provide an excellent target for transportation disruption operations.

## Flower Valley Road East (NSP Site J)

| Criteria | Feasible and prudent | Not feasible and/ or not prudent | Inconclusive |
|---|---|---|---|
| Effects on human settlement including permanency, community benefits, cultural values, aesthetics, recreation, etc. | | X | |
| **Effects on public health and safety** including transportation concerns | | X | |
| **Effects on land based economies** including agriculture, tourism, forestry, etc. | | X | |
| **Effects on historic and archeological resources** | | | X |
| **Effects on the natural environment** | | X | |
| **Effects on rare and unique natural resources** | | X | |
| **Effects on future development** | | X | |
| **Geologic foundation of the site** | | | X |
| **Site security concerns** | | X | |
| **Site location** including size, topography and proximity to nearby sensitive areas | | X | |

**Task Force Decision.** Based on the foregoing assumptions, criteria, description, and evaluation, the Task Force voted unanimously not to forward the Flower Valley Road East location to the EQB as an alternate nuclear waste storage site.

### 6.5.6 River Region (NSP Site T)

- Location: Within Red Wing city limits east of Tyler Road and south of Highway 61; including part of Plat 835-2250, and all of Plats 835-2311, 735-0020 and 735-0010
- Owner: Not known
- Proposed by: Steve Reichert, Florence Township
- Description: This non-karstic property made it to Phase II of the NSP Siting Process. It includes about 179 acres located near the NSP Ash Disposal Site and Goodhue County Landfill.

The property may be the site of a new medical building servicing Red Wing and surrounding communities. South of the proposed site is a new housing development. The nearest residence appears to be about one-quarter mile from the site. The nearest population center is Red Wing; the site is within Red Wing city limits. The population density is 100-500 people per square mile. Highway 61 is a 4-lane road north of the site.

A steep grade may be required to reach the site. Road access to the site is limited.

## River Region (NSP Site T)

| Criteria | Feasible and prudent | Not feasible and/ or not prudent | Inconclusive |
|---|---|---|---|
| **Effects on human settlement** including permanency, community benefits, cultural values, aesthetics, recreation, etc. | | X | |
| **Effects on public health and safety** including transportation concerns | | X | |
| **Effects on land based economies** including agriculture, tourism, forestry, etc. | | X | |
| **Effects on historic and archeological resources** | | | X |
| **Effects on the natural environment** | | X | |
| **Effects on rare and unique natural resources** | | | X |
| **Effects on future development** | | X | |
| **Geologic foundation of the site** | | | X |
| **Site security concerns** | | X | |
| **Site location** including size, topography and proximity to nearby sensitive areas | | X | |

**Task Force Decision.** Based on the foregoing assumptions, criteria, description, and evaluation, the Task Force voted unanimously not to forward the River Region location to the EQB as an alternate nuclear waste storage site.

### 6.5.7 NSP Ash Disposal Facility

- Location: West of the intersection of County Road 1 and Landfill Road in Red Wing, adjacent to the Goodhue County Landfill

- Owner: NSP

- Proposed by: Robert Bruce, Florence Township

- Description: This property includes 81 acres of land. Since 1987, NSP has used the site to dispose of ash from their Red Wing RDF plant. The facility has capacity for approximately 17 additional years. The area has existing observation wells to monitor groundwater and existing waste containment systems. Significant environmental data has been compiled in the permitting and reporting procedures.

No homes are visible from the site. Road access to the site is limited. The nearest residence is approximately one-quarter mile away. The nearest population center is Red Wing; the site is within Red Wing city limits. The population density is 100-500 per square mile. A new residential development is underway adjacent to the site on the west.

An abandoned railroad bed is located to the east of the proposed site and parallels Hay Creek; however, the railroad bed no longer exists at the intersection of Highway 61 and County Road 1. Reconstruction of the abandoned rail bed, or construction of a new rail access would involve substantial disturbance of the Hay Creek/Highway 61 area, requiring approximately one and one-half miles of rail line.

## NSP Ash Disposal Facility

| Criteria | Feasible and prudent | Not feasible and/ or not prudent | Inconclusive |
|---|---|---|---|
| **Effects on human settlement** including permanency, community benefits, cultural values, aesthetics, recreation, etc. | X | | |
| **Effects on public health and safety** including transportation concerns | | X | |
| **Effects on land based economies** including agriculture, tourism, forestry, etc. | X | | |
| **Effects on historic and archeological resources** | | | X |
| **Effects on the natural environment** | X | | |
| **Effects on rare and unique natural resources** | | | X |
| **Effects on future development** | X | | |
| **Geologic foundation of the site** | | | X |
| **Site security concerns** | X | | |
| **Site location** including size, topography and proximity to nearby sensitive areas | X | | |

**Task Force Decision.** Based on the foregoing assumptions, criteria, description, and evaluation, the Task Force voted 10-5 to retain the NSP Ash Disposal facility for further evaluation before forwarding the location to the EQB as an alternate nuclear waste storage site.

**NSP Ash Disposal Facility** — further evaluation

Further evaluation and analyses were presented to the Task Force on December 2, 1995. The following additional factors were considered:

- Site topography does not appear to offer a level, 26-acre building site. Substantial excavation and filling may be required to create a level site. A map analysis and aerial photos indicate both road and rail transport modes involve use of bridges and routes through heavily populated areas.

- NSP representatives provided information that the site would require trucking by either legal weight or heavy-haul. They state that heavy-haul would be limited by steep grades coming out of the Prairie Island storage facility. Legal weight trucks would haul 2-3 assemblies per trip, increasing the total trips and requiring handling at the site to place the material in storage casks. It is also possible that use of the site for spent fuel storage would require movement of the ash facility to a separate site due to space and terrain limitations.

- The Minnesota Natural Heritage database was reviewed in 1991 to determine if rare plant or animal species or other significant features were known to be in the area. Two rare plant species were identified in the area. Landfill additions were not expected to cause impact on these species.

- The Minnesota Historical Society was consulted about possible significant archeological sites at the property. Although they could not be certain, they felt that the probability of such sites was low.

The Task Force used this more detailed information to again evaluate the site.

**NSP Ash Disposal Facility** — further evaluation

| Criteria | Feasible and prudent | Not feasible and/ or not prudent | Inconclusive |
|---|---|---|---|
| **Effects on human settlement** including permanency, community benefits, cultural values, aesthetics, recreation, etc. | | X | |
| **Effects on public health and safety** including transportation concerns | | X | |
| **Effects on land based economies** including agriculture, tourism, forestry, etc. | X | | |
| **Effects on historic and archeological resources** | X | | |
| **Effects on the natural environment** | | X | |
| **Effects on rare and unique natural resources** | | | X |
| **Effects on future development** | | X | |
| **Geologic foundation of the site** | X | | |
| **Site security concerns** | X | | |
| **Site location** including size, topography and proximity to nearby sensitive areas | | X | |

**Final Task Force Decision.** Based on this further analysis, a visit to the site and extensive discussion, the Task Force voted in the majority not to forward the NSP Ash Disposal facility to the EQB as an alternate nuclear waste storage site.

### 6.5.8 NSP Service Center

- Location: Within Red Wing Industrial Park north of Highway 61
- Owners: NSP and State of Minnesota
- Proposed by: Mike Murphy, Florence Township

Description: This site is located on the north edge of the Red Wing Industrial Park. An estimated 500 or more people work within one-quarter mile of the site. Businesses include DbI, IRC, Red Wing Shoe, and Jostens. A day-care center nearby plans to relocate.

The nearest resident is about one-half mile away. The nearest population center is Red Wing; it is within Red Wing City Limits. Census data shows the population density to be either less than 50 or 100-500 per square mile. The site is located south of the Cannon Valley Trail. It is near the Cannon River, wetlands and the 100-year Mississippi River floodplain.

Mr. Murphy provided the most comprehensive alternate site application. His detailed application includes drawings of the facility. The facility offers a smaller storage and handling area with a crane to unload railroad cars. The site does not appear to provide the minimum 26-acre area. To create such an area may require the relocation of businesses.

## NSP Service Center

| Criteria | Feasible and prudent | Not feasible and/ or not prudent | Inconclusive |
|---|---|---|---|
| **Effects on human settlement** including permanency, community benefits, cultural values, aesthetics, recreation, etc. | | X | |
| **Effects on public health and safety** including transportation concerns | | X | |
| **Effects on land based economies** including agriculture, tourism, forestry, etc. | | X | |
| **Effects on historic and archeological resources** | | | X |
| **Effects on the natural environment** | | X | |
| **Effects on rare and unique natural resources** | | X | |
| **Effects on future development** | | X | |
| **Geologic foundation of the site** | | | X |
| **Site security concerns** | X | | |
| **Site location** including size, topography and proximity to nearby sensitive areas | | X | |

**Task Force Decision.** Based on the foregoing assumptions, criteria, description, and evaluation, the Task Force voted unanimously not to recommend the NSP Service Center to the EQB as an alternate nuclear waste storage site.

### 6.5.9 The Murphy Property

- Location: In Wacouta Township north of Highway 61
- Owner: State Senator Steve Murphy, Wacouta Township
- Proposed by: Owner
- Description: This property includes about 14 acres including a rock face to the north. Highway 61 is south of the property. The nearest residence is located on-site. The nearest population center is Wacouta. The population density is 50-100 people per square mile. The site would be visible from Highway 61.

The site does not provide the minimum 26-acre area. Also, site topography does not offer a level building site. To create a storage facility may require rerouting Highway 61 and/or substantial excavation of the bluff.

Security may be a concern; area bluffs may provide a direct line of sight to the casks. The stability of the rock face above the site may be a concern. Aerial photographs indicate that both rail and road routes to the site would pass through heavily populated areas and cross over several bridges, the weight limitations of which are unknown. Additionally, bridges provide an excellent target for transportation disruption operations. Further, the rail line would cross U.S. Highway 61, a heavily traversed route.

## The Murphy Property

| Criteria | Feasible and prudent | Not feasible and/ or not prudent | Inconclusive |
|---|---|---|---|
| **Effects on human settlement** including permanency, community benefits, cultural values, aesthetics, recreation, etc. | | X | |
| **Effects on public health and safety** including transportation concerns | | X | |
| **Effects on land based economies** including agriculture, tourism, forestry, etc. | | X | |
| **Effects on historic and archeological resources** | | | X |
| **Effects on the natural environment** | | X | |
| **Effects on rare and unique natural resources** | | | X |
| **Effects on future development** | | X | |
| **Geologic foundation of the site** | | X | |
| **Site security concerns** | | X | |
| **Site location** including size, topography and proximity to nearby sensitive areas. | | X | |

**Task Force Decision.** Based on the foregoing assumptions, criteria, description, and evaluation, the Task Force voted unanimously not to forward the Murphy Property to the EQB as an alternate nuclear waste storage site.

### 6.5.10 Spring Creek Property

- Location: South of Grandview Trailer Court and north of Spring Creek adjacent to County 53
- Owner: Unknown
- Proposed by: Anonymous
- Description: This non-karstic agricultural field includes about 35 acres. Relatively new housing developments are visible west and north of the property. Grandview Trailer Court is also north of the site. The nearest residence is less than one-eighth mile away. The nearest population center is Red Wing; the site is within Red Wing city limits. The population density is 500-1,500 per square mile.

The site would be visible from public roads east, west and north of the site. The site is adjacent to Spring Creek (south boundary), a designated trout stream. Minnesota Rule 4400.3310 Subp. 3 says to consider the adverse effects on areas located near conditionally excluded sites, including designated trout streams.

Aerial photographs indicate that both rail and road routes to the site would pass through heavily populated areas and cross over several bridges, the weight limitations of which are unknown. Additionally, bridges provide an excellent target for transportation disruption operations.

## Spring Creek Property

| Criteria | Feasible and prudent | Not feasible and/ or not prudent | Inconclusive |
|---|---|---|---|
| **Effects on human settlement** including permanency, community benefits, cultural values, aesthetics, recreation, etc. | | X | |
| **Effects on public health and safety** including transportation concerns | | X | |
| **Effects on land based economies** including agriculture, tourism, forestry, etc. | | X | |
| **Effects on historic and archeological resources** | | | X |
| **Effects on the natural environment** | | X | |
| **Effects on rare and unique natural resources** | | X | |
| **Effects on future development** | | X | |
| **Geologic foundation of the site** | X | | |
| **Site security concerns** | | X | |
| **Site location** including size, topography and proximity to nearby sensitive areas | | X | |

**Task Force Decision.** Based on the foregoing assumptions, criteria, description, and evaluation, the Task Force voted unanimously not to forward the Spring Creek location to the EQB as an alternate nuclear waste storage site.

### 6.5.11 Peaceful Ridge East

- Location: Southwest of the end of Tyler Road and east of the Spring Creek Property
- Owner: Unknown
- Proposed by: Anonymous
- Description: This non-karstic property is an agricultural field larger than 40 acres. Bluffs are located on at least two sides of the property. The nearest residence is about one-half mile away. Homes appear to be visible west and north of the site. A housing development is being constructed that will overlook the site from the north. The population density now is less than 50 per square mile. The nearest population center is Red Wing; the site is located within Red Wing city limits.

No public road provides access to the property. The subcommittee was not able to view the complete sight because of the bluffs and lack of access.

The site is about one-half mile from Spring Creek, a designated trout stream. Minnesota Rule 4400.3310 Subp. 3 says to consider the adverse effects on areas located near conditionally excluded sites, including designated trout streams.

## Peaceful Ridge East

| Criteria | Feasible and prudent | Not feasible and/ or not prudent | Inconclusive |
|---|---|---|---|
| **Effects on human settlement** including permanency, community benefits, cultural values, aesthetics, recreation, etc. | | X | |
| **Effects on public health and safety** including transportation concerns | | X | |
| **Effects on land based economies** including agriculture, tourism, forestry, etc. | | X | |
| **Effects on historic and archeological resources** | | | X |
| **Effects on the natural environment** | | X | |
| **Effects on rare and unique natural resources** | | | X |
| **Effects on future development** | | X | |
| **Geologic foundation of the site** | X | | |
| **Site security concerns** | | X | |
| **Site location** including size, topography and proximity to nearby sensitive areas | | X | |

**Task Force Decision.** Based on the foregoing assumptions, criteria, description, and evaluation, the Task Force voted unanimously not to forward the Peaceful Ridge East location to the EQB as an alternate nuclear waste storage site.

### 6.5.12 Peaceful Ridge West

- Location: Southwest of the end of Tyler Road and east of the Spring Creek Property
- Owner: Unknown
- Proposed by: Anonymous
- Description: This non-karstic property is an agricultural field larger than 40 acres. Bluffs are located on at least two sides of the property. The nearest residence is about one-half mile away. Homes appear to be visible west and north of the site. A housing development is being constructed that may overlook the site. The population density now is less than 50 per square mile. The nearest population center is Red Wing; the site is located within Red Wing city limits.

No public road provides access to the property. The subcommittee was not able to view the complete sight because of the bluffs and lack of access.

The site is about one-half mile from Spring Creek, a designated trout stream. Minnesota Rule 4400.3310 Subp. 3 says to consider the adverse effects on areas located near conditionally excluded sites, including designated trout streams.

## Peaceful Ridge West

| Criteria | Feasible and prudent | Not feasible and/ or not prudent | Inconclusive |
|---|---|---|---|
| **Effects on human settlement** including permanency, community benefits, cultural values, aesthetics, recreation, etc. | | X | |
| **Effects on public health and safety** including transportation concerns | | X | |
| **Effects on land based economies** including agriculture, tourism, forestry, etc. | | X | |
| **Effects on historic and archeological resources** | | | X |
| **Effects on the natural environment** | | X | |
| **Effects on rare and unique natural resources** | | | X |
| **Effects on future development** | | X | |
| **Geologic foundation of the site** | X | | |
| **Site security concerns** | | X | |
| **Site location** including size, topography and proximity to nearby sensitive areas | | X | |

**Task Force Decision.** Based on the foregoing assumptions, criteria, description, and evaluation, the Task Force voted unanimously not to forward the Peaceful Ridge West location to the EQB as an alternate nuclear waste storage site.

### 6.5.13 Red Wing Country Club

- Location: Red Wing Country Club within Red Wing City Limits
- Owner: Red Wing Country Club
- Proposed by: Anonymous
- Description: This non-karstic property is located on the Red Wing Country Club, a privately owned golf course. Homes are contiguous to the property and visible in all directions. Census data shows the population density to be either 500-1,500 or 1,500-2,000 per square mile. The nearest population center is Red Wing; the sight is within Red Wing City Limits.

Sunnyside Elementary School is less than one-quarter mile away; Jefferson Elementary School is about one-half mile away; Rocking Horse Academy, a pre-school facility, is located about one-half mile away.

The site is visible from public roads. A steep grade may be required to reach the site. The site does not provide the minimum 26-acre area. To create such an area may require the relocation of homes and/or businesses.

## Red Wing Country Club

| Criteria | Feasible and prudent | Not feasible and/ or not prudent | Inconclusive |
|---|---|---|---|
| **Effects on human settlement** including permanency, community benefits, cultural values, aesthetics, recreation, etc. | | X | |
| **Effects on public health and safety** including transportation concerns | | X | |
| **Effects on land based economies** including agriculture, tourism, forestry, etc. | | X | |
| **Effects on historic and archeological resources** | | | X |
| **Effects on the natural environment** | | X | |
| **Effects on rare and unique natural resources** | | | X |
| **Effects on future development** | | X | |
| **Geologic foundation of the site** | | X | |
| **Site security concerns** | | X | |
| **Site location** including size, topography and proximity to nearby sensitive areas | | X | |

**Task Force Decision**. Based on the foregoing assumptions, criteria, description, and evaluation, the Task Force voted unanimously not to forward the Red Wing Country Club property to the EQB as an alternate nuclear waste storage site.

### 6.5.14 First Covenant Church

- Location: First Covenant Church in northwestern Hay Creek Township and northeastern Featherstone Township
- Owner: First Covenant Church
- Proposed by: Anonymous
- Description: This non-karstic property is located at First Covenant Church on 240th Avenue in Red Wing city limits. The nearest residence is located on-site. Homes are located in most directions. Housing developments are located west, south and east of the property. The nearest population center is South Oaks. The population density is 100-500 people per square mile.

Twin Bluff Middle School is located about one-quarter mile away. The site would be visible from public roads.

The proposed site measures about 27 acres. Relocation of homes, roads and First Covenant Church would be required.

## First Covenant Church

| Criteria | Feasible and prudent | Not feasible and/ or not prudent | Inconclusive |
|---|---|---|---|
| **Effects on human settlement** including permanency, community benefits, cultural values, aesthetics, recreation, etc. | | X | |
| **Effects on public health and safety** including transportation concerns | | X | |
| **Effects on land based economies** including agriculture, tourism, forestry, etc. | | X | |
| **Effects on historic and archeological resources** | | X | |
| **Effects on the natural environment** | | X | |
| **Effects on rare and unique natural resources** | | | X |
| **Effects on future development** | | X | |
| **Geologic foundation of the site** | X | | |
| **Site security concerns** | | X | |
| **Site location** including size, topography and proximity to nearby sensitive areas | | X | |

**Task Force Decision.** Based on the foregoing assumptions, criteria, description, and evaluation, the Task Force voted unanimously not to forward the First Covenant Church property to the EQB as an alternate nuclear waste storage site.

### 6.5.15 Featherstone Township Property

- Location: Northern Featherstone Township at the intersection of County Road 1 and 287 St. Way
- Owner: Unknown
- Proposed by: Anonymous
- Description: This non-karstic property is located in an agricultural field west of County Road 1 and north of 287 St. Way. A ravine cuts through the south end of the property. The nearest residence appears to be within 1,000 feet of the property. Homes are visible to the north, east and possibly the south. The population density is less than 50 people per square mile. The nearest population center is Red Wing, approximately three miles away.

The site does not provide the minimum 26-acre area. To create such an area may require the relocation of homes, County Road 1 and/or 287 St. Way. An abandoned railroad bed is located to the east of the proposed site; however, the railroad bed no longer exists at the intersection of Highway 61 and County Road 1.

## Featherstone Township Property

| Criteria | Feasible and prudent | Not feasible and/ or not prudent | Inconclusive |
|---|---|---|---|
| **Effects on human settlement** including permanency, community benefits, cultural values, aesthetics, recreation, etc. | | X | |
| **Effects on public health and safety** including transportation concerns | | X | |
| **Effects on land based economies** including agriculture, tourism, forestry, etc. | | X | |
| **Effects on historic and archeological resources** | | | X |
| **Effects on the natural environment** | | X | |
| **Effects on rare and unique natural resources** | | | X |
| **Effects on future development** | | X | |
| **Geologic foundation of the site** | X | | |
| **Site security concerns** | | X | |
| **Site location** including size, topography and proximity to nearby sensitive areas | | X | |

**Task Force Decision**. Based on the foregoing assumptions, criteria, description, and evaluation, the Task Force voted unanimously not to forward the Featherstone Township property to the EQB as an alternate nuclear waste storage site.

### 6.5.16 Tyler Road Development

- Location: The entrance to the Tyler Road Development south of Highway 61
- Owner: Unknown
- Proposed by: Anonymous
- Description: This non-karstic property is located in the middle of a planned housing development near the end of Tyler Road south of Highway 61. One home may be located on-site. Homes are visible west, east and northeast of the site. Several plots in the housing development have been sold. The population density is now 100-500 per square mile. The nearest population center is Red Wing; the site is located within Red Wing city limits.

The site does not provide the minimum 26-acre area. To create such an area may require the relocation of homes and/or Tyler Road. A steep grade may be required to reach the site.

Security may be a concern; area bluffs may provide a direct line of sight to the casks.

## Tyler Road Development

| Criteria | Feasible and prudent | Not feasible and/ or not prudent | Inconclusive |
|---|---|---|---|
| **Effects on human settlement** including permanency, community benefits, cultural values, aesthetics, recreation, etc. | | X | |
| **Effects on public health and safety** including transportation concerns | | X | |
| **Effects on land based economies** including agriculture, tourism, forestry, etc. | | X | |
| **Effects on historic and archeological resources** | | | X |
| **Effects on the natural environment** | | | X |
| **Effects on rare and unique natural resources** | | | X |
| **Effects on future development** | | X | |
| **Geologic foundation of the site** | X | | |
| **Site security concerns** | | X | |
| **Site location** including size, topography and proximity to nearby sensitive areas | | X | |

**Task Force Decision**. Based on the foregoing assumptions, criteria, description, and evaluation, the Task Force voted unanimously not to forward the Tyler Road Development to the EQB as an alternate nuclear waste storage site.

## 6.6 Evaluation and Analysis Summary

The Task Force will not forward any sites to the EQB for further consideration. The permanency issue and public safety concerns involving transportation risks and the uncertainty of long-term exposure to low-level radioactivity are the primary reasons for this outcome. There are no risk-acceptable alternatives to storage on-site. Storage on-site for an undeterminable period of time is also undesirable.

## 7.0 Evaluation of NSP's Proposed Sites

# SUMMARY

### Site Descriptions, Environmental Data Collected

The Chair of the EQB charged the Task Force to *"evaluate NSP's preferred and alternate sites."* To fulfill the charge, the Task Force: (1) compiled data on the two sites from state agencies, nearby residents and other resources; then (2) used its existing siting criteria and evaluation procedure (see section 6.0) to examine NSP's two sites.

Information gathered by the Task Force describes (partial listing):

- nearby homes and businesses
- land based economies
- surface and groundwater resources
- population density
- the area's natural resources
- site security concerns
- site location/proximity to sensitive areas
- recreational resources

### Evaluation of NSP's Alternate Site "O"

The Task Force voted not to recommend site "O" to the EQB as an off-site nuclear waste storage facility.

- NSP's site "O" is an agricultural field over 40 acres in size. The Florence Township Community Center and park abut the site. The site is visible from public roads.
- The nearest population center is Frontenac Station, about one-half mile away. The community includes businesses and approximately 100 homes, plus a fenced play park, church, restaurant, etc. The area has more than 30 year-round businesses.
- The site is in the center of a recreational area; many businesses rely on tourism. The site impacts on the Richard J. Dorer Memorial Hardwood Forest, Lake Pepin, Mount Frontenac, Frontenac State Park, and the scenic Hiawatha Valley along the Mississippi.
- There are no emergency response assets in Florence Township.
- Wells Creek is located along the southern edge and east of the property. Wells Creek has had three floods in the past 25 years.
- The proposed rail spur will cross on or near native American burial grounds.

### Evaluation of NSP's Preferred Site "P"

The Task Force voted not to recommend site "P" to the EQB as an off-site nuclear waste storage facility.

- NSP's site "P" is an agricultural field over 40 acres in size. A large dairy farm business is less than a mile away. The site is visible from public roads.
- The nearest population center is Frontenac Station, about one-half mile away. The community includes businesses and approximately 100 homes, plus a fenced play park, church, restaurant, etc. The area has more than 30 year-round businesses.
- The site is in the center of a recreational area; many businesses rely on tourism. The site impacts on the Richard J. Dorer Memorial Hardwood Forest, Lake Pepin, Mount Frontenac, Frontenac State Park, and the scenic Hiawatha Valley along the Mississippi.
- There are no emergency response assets in Florence Township.
- The site is near Wells Creek, which has had three floods in 25 years.

## 7.1 INTRODUCTION

To complete our charge to evaluate NSP's proposed sites, the Task Force evaluated Sites "O" (The Jane Possehl property) and "P" (The Clara Carlson property) using the same process as that used for evaluation of alternate sites (Section 6).

Refer to figure 7 and the following sections of this report to review the evaluation process.



## 7.2 Evaluation of Site "O" (The Jane Possehl Property)

- Location: Florence Township: Section 14, South ½
- Owner: Jane Possehl
- Proposed by: NSP
- Description: The property includes over 40 acres of level, agricultural land. The site is south of Territorial Road and east of County Road 2. A large operational gravel pit is immediately adjacent to the proposed site. The nearest resident is less than one mile away. The new Florence Township Community Center and park abuts the site. The nearest population center is Frontenac Station, about one-half mile away. Frontenac Station has more than 30 year-round businesses, nearly 100 homes, a fenced play park and a U.S. Post Office. Homes are visible from the site. The site would be visible from public roads. The population density is less than 50 people per square mile.

Wells Creek is located along the southern edge and east of the property. Wells Creek has experienced three flash floods in the past 25 years. An airstrip is about one mile north of the property. The airport is a recreational site for ultralight aircraft pilots.

The site is near an existing rail line, but the rail spur to reach the site will cross on or near a registered native American burial grounds and also will cross County Road 2.

There are no emergency response assets available in Florence Township to respond to an accident or incident at or en route to the site.

Old Frontenac is a little over two miles north of the site. Old Frontenac is on the National Register of Historic Places, the first such community in Minnesota. Villa Maria, once an historic convent and school for girls and now a conference center which hosts 6000 guests each year.

The proposed site is in the center of a scenic recreational area whose businesses rely primarily on the tourist trade. The site impacts on the Richard J. Dorer Memorial Hardwood Forest, Lake Pepin, Mount Frontenac,

Frontenac State Park, and the scenic Hiawatha Valley along the Mississippi River.

Public snowmobile trails exist across and along the site.

Florence Township is the fastest growing community in Goodhue County.

The farm on the site has been divided into six parcels and offered for sale prior to the site being proposed by NSP. One parcel has been sold.

Both rail and truck routes to the site pass through heavily populated areas, parallel an extremely busy U.S. Highway, and cross over numerous bridges.

| Criteria | Feasible and prudent | Not feasible and/ or not prudent | Inconclusive |
|---|---|---|---|
| **Effects on human settlement** including permanency, community benefits, cultural values, aesthetics, recreation, etc. | | X | |
| **Effects on public health and safety** including transportation concerns | | X | |
| **Effects on land based economies** including agriculture, tourism, forestry, etc. | | X | |
| **Effects on historic and archeological resources** | | X | |
| **Effects on the natural environment** | | X | |
| **Effects on rare and unique natural resources** | | | X |
| **Effects on future development** | | X | |
| **Geologic foundation of the site** | X | | |
| **Site security concerns** | | X | |
| **Site location** including size, topography and proximity to nearby sensitive areas | | X | |

**Task Force Decision.** Based on the foregoing assumptions, criteria, description, and evaluation, the Task Force voted by majority (two abstentions) to not recommend NSP's Site "O" to the EQB as an off-site nuclear waste storage facility.

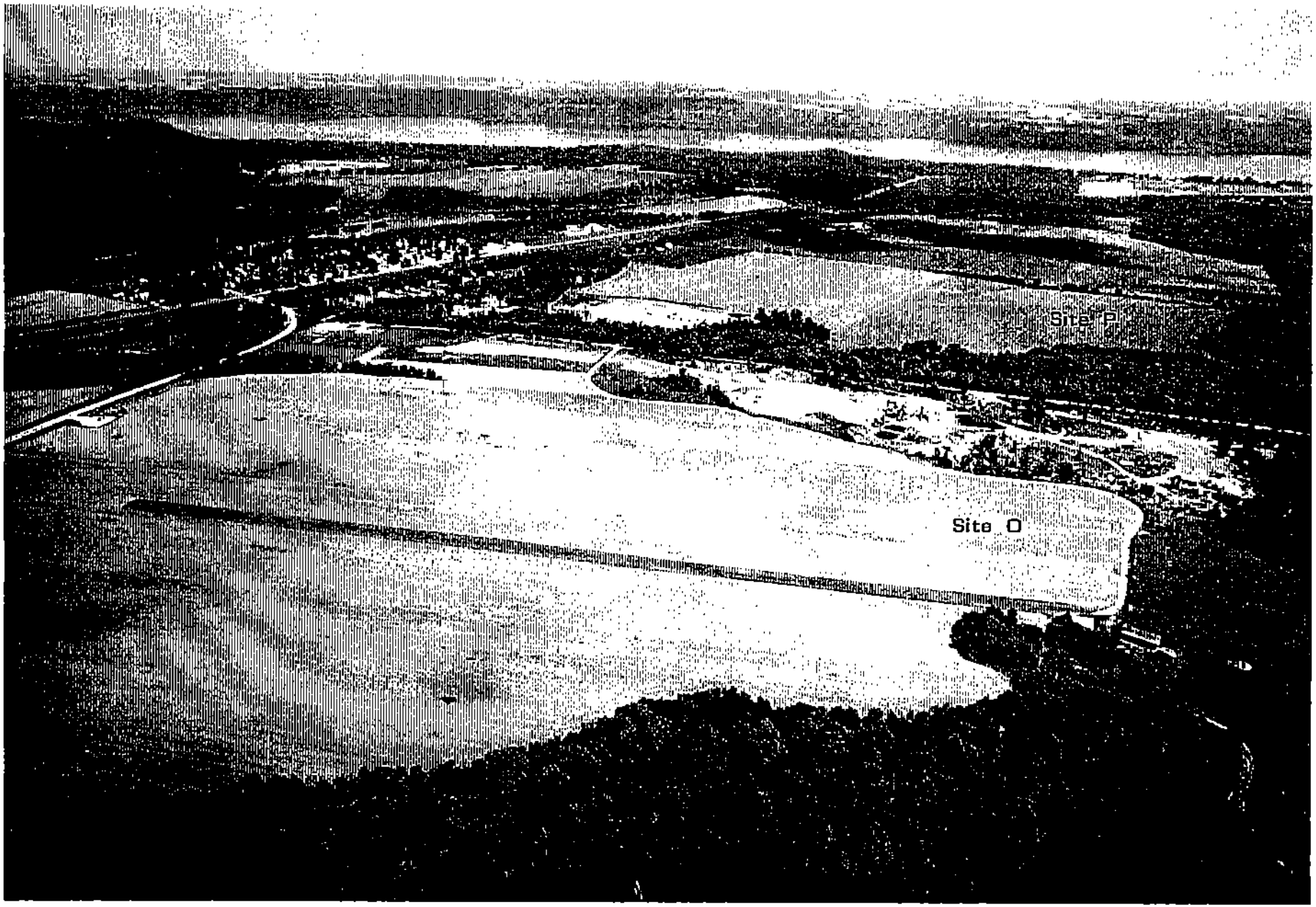



Figure 7. Aerial View of Frontenac and Proposed Sites O and P

## 7.3 Evaluation of Site "P" (The Clara Carlson Property)

- Location: Florence Township: Section 14, South ½
- Owner: Clara Carlson
- Proposed by: NSP
- Description: The property includes over 40 acres of level, agricultural land. The site is south of U.S. Highway 61 and Frontenac Station in Florence Township. Territorial Road bounds the site on the south. A large operational gravel pit is immediately across Territorial Road. A large dairy farm business is less than one mile away. Another farm is 2,500 feet to the north. Another home is 2,600 feet to the northwest. The nearest population center is Frontenac Station, about one-half mile away. Frontenac Station has more than 30 year-round businesses, nearly 100 homes, a community center, a fenced play park, U.S. Post Office, and black-topped streets with street signs.

  Old Frontenac is a little over two miles north of the site. Old Frontenac is on the National Register of Historic Places, the first such community in Minnesota. Villa Maria, once an historic convent and school for girls and now a conference center which hosts 6000 guests each year.

  Florence Township is the fastest growing community in Goodhue County. Homes are visible from the site. The site would be visible from public roads. The population density at the site is less than 50 people per square mile.

The proposed site is in the center of a scenic recreational area whose businesses rely primarily on the tourist trade. The site impacts on the Richard J. Dorer Memorial Hardwood Forest, Lake Pepin, Mount Frontenac, Frontenac State Park, and the scenic Hiawatha Valley along the Mississippi River.

Industrial, irrigation, public and private wells are all within 3,000 feet of the center of the proposed site.

A landing strip and hanger for ultralites and small aircraft is 2,500 feet to the northeast. Another strip is 2,500 feet to the west.

The site is near an existing rail line, but the rail spur to reach the site will be constructed such that a train carrying dry casks will pass the site, stop in rural Lake City, and back up an incline to the site.

There are no emergency response assets available in Florence Township to respond to an accident or incident at or en route to the site.

Public snowmobile trails exist across and along the site.

The site is on the slopes of the Wells Creek Valley which has had three major flash floods in the past 25 years.

Both rail and truck routes to the site pass through heavily populated areas, parallel an extremely busy U.S. Highway, and cross over numerous bridges.

| Criteria | Feasible and prudent | Not feasible and/ or not prudent | Inconclusive |
|---|---|---|---|
| **Effects on human settlement** including permanency, community benefits, cultural values, aesthetics, recreation, etc. | | X | |
| **Effects on public health and safety** including transportation concerns | | X | |
| **Effects on land based economies** including agriculture, tourism, forestry, etc. | | X | |
| **Effects on historic and archeological resources** | | X | |
| **Effects on the natural environment** | | X | |
| **Effects on rare and unique natural resources** | | | X |
| **Effects on future development** | | X | |
| **Geologic foundation of the site** | X | | |
| **Site security concerns** | | X | |
| **Site location** including size, topography and proximity to nearby sensitive areas | | X | |

**Task Force Decision.** Based on the foregoing assumptions, criteria, description, and evaluation, the Task Force voted by majority (two abstentions) to not recommend NSP's Site "P" to the EQB as an off-site nuclear waste storage facility.

## 7.4 Evaluation and Analysis Summary

Given the obvious limitations with respect to information available to the Task Force, an attempt was made to evaluate intelligently and rationally the sites proposed by NSP. Our analysis, the results of which are contained throughout this report, indicates that there is no feasible preferred alternate site in Goodhue County.

## 8.0 TASK FORCE CONCLUSIONS

### 8.1 The Impact of National Nuclear Waste Management Policy for Minnesota

To date, the federal government has found it impossible to implement its 20-year-old promise to the nuclear energy utilities to provide a national permanent repository for nuclear waste. The Yucca Mountain repository is in serious technical, political and financial trouble and may not be built. The Mescalero solution, if successful, is only temporary. Serious consideration by State officials of an off-site nuclear waste storage facility anywhere in Minnesota threatens the health and safety of its citizens because the federal government may then consider Minnesota a primary candidate to host a regional or national waste repository.

### 8.2 The Permanency Issue

A detailed review of state legislation, the Appellate Court ruling, and common sense lead to a conclusion that any nuclear waste storage site in Minnesota may be permanent. The EIA must address this issue and consider the long-term impact on public safety, public health, socioeconomic factors, and the environment. The long-term analysis will differ significantly from a short-term evaluation.

### 8.3 The Application of Minnesota's Sustainable Development Principles

The outcome of the nuclear waste storage facility issue must contribute to the principles of sustainable development by maintaining and enhancing economic opportunity and community well-being while protecting and restoring the natural environment upon which quality of life depends. The EQB must take into account the impact of today's decisions on future generations.

### 8.4 Unprecedented, Irregular Actions

There have been many actions by the Minnesota State Legislature, Public Utilities Commission, and other State agencies that are unprecedented and seemingly procedurally irregular. One of the Task Force's fundamental concerns is the apparent violation of Minnesota laws intended to address the issue of siting nuclear waste storage facilities. For example, NSP's application and the siting process, thus far, do not satisfy the requirements of the Radioactive Waste Management Act for a radioactive waste management facility. Constraints of time and the deadlines created by the Legislature almost certainly will not allow the proper application of the environmental statutes of MERA and MEPA. Judge Klein's recommendations to the PUC to develop standards to ensure compliance of a Certificate of Need with MERA and MEPA have not, to our knowledge, been accepted. Unless **all** relevant rules, laws, regulations, and statutes are applied, the EQB will be unable to assert that all environmental factors were considered in its evaluation of NSP's application.

NSP's application for the alternate off-site facility could not have met or been filed successfully under either the Chapter 7855 Certificate of Need requirements for the State of Minnesota or the federal requirements for an ISFNS (NRC Part 72). Both require technical specifications not found in NSP's application. Allowing the process to be initiated and continue under the power plant siting rules is extremely ill-advised. If the siting process is to

continue, rulemaking which specifies additional criteria more appropriate to siting nuclear waste facilities is needed. Further, an investigation of the term-of-storage implications called for by the Administrative Law Judge is required. Finally, a deadline needs to be set that allows the EQB to finish the EIA and make a siting decision before NSP applies directly to the NRC for a license.

The Criteria Grid and Timeline "scoping tools" provide an effective method to ensure that **all** siting criteria required by the myriad of rules, laws, regulations, and statutes are included and properly evaluated, both for long-term and short-term storage. The EQB should use these tools to logically and rationally evaluate the complex issues before them.

## 8.5 Certificate of Need

A serious procedural gap is that created by the acceptance of NSP's application using the Limited Certificate of Need for Prairie Island to fulfill the certificate of need requirement.

A certificate of need application has never been made for the proposed alternate Goodhue County site. The EQB needs one. The certificate of need application for Prairie Island contained specific information pertaining only to that site. A certificate of need application for a specific alternate off-site nuclear waste storage facility would address issues such as:

- Different cask technologies and design. NSP's application contains limited specifications for a multi-purpose canister which is still undeveloped and untested. The Prairie Island certificate of need describes the TN40 cask presently in use there, but not intended for use at the proposed alternate site.

- Transfer and emergency strategies for the off-site location are inadequate. The Task Force has been told by NSP officials that they intend to return casks to Prairie Island for repair. To this date, NSP has not offered a quantified risk assessment for implementing this strategy. What are the likely hazards associated with the handling and transportation of a damaged or defective case back to Prairie Island? If massive evacuation of these areas is required, what would it cost? Who would pay?

- The term of storage and assumptions about the ultimate disposal of the nuclear waste are significantly different from that contained in the Prairie Island certificate of need.

- Community and public impacts are significantly different for an off-site location, particularly one situated on a local/state tourist artery and in the midst of a major natural and recreational resource access area.

- Critical uncertainties regarding the ongoing and future use, management, and ownership of an off-site facility remain unresolved by the application or siting process to date.

## 8.6 NSP's Application: Evaluation of NSP's Preferred and Alternate Sites and the Environmental Analysis.

Neither NSP's proposed preferred site "P", the Clara Carlson property, nor the alternate site "O", the Jane Possehl property, are feasible. The deficiencies cited in this report support the following conclusions:

- Public safety issues regarding the movement, handling, storage, security and maintenance of multi-purpose dry

casks offer unacceptable risks. An accident or terrorist incident resulting in the release of radioactivity would be catastrophic.

- Public health issues regarding long-term, low-level radioactive emissions as expected with dry cask storage remain unresolved. The citizens of Florence Township do not consider as acceptable any risk defined as more than one cancer case in 100,000 population.

- Florence Township may be required to plan for, fund, and establish an emergency response capability where none now exists. The anticipated increase in the tax base as a result of the storage facility will not be sufficient to establish and maintain this capability.

- The descriptions of nearby residents and population centers contained in NSP's application are inaccurate and misleading. There are more residences, small businesses, and other enterprises in proximity of the proposed sites than cited in the application. The publicly perceived effects of a nuclear waste storage site on these demographics is clearly understated.

- NSP has picked the fastest growing township in the County for its proposed site. Mortgage lenders and real estate appraisers believe that property values will decrease significantly if a nuclear waste site were built in the township.

- NSP disregarded the importance of the township's recreational activities and the degrading impact a nuclear waste storage facility would have on those activities. The proposed facility seriously and negatively would impact water sports on Lake Pepin, fishing, hiking, golfing, skiing, ultralight plane flying, and snowmobiling in the proximity of the proposed site. There would be severe economic impacts to the businesses in the township associated with any degradation of recreational activities.

- Aesthetics in the area of the proposed site would be negatively impacted. The proposed site is clearly visible not only to residents in proximity to the proposed site, but also to people viewing the lovely Hiawatha Valley from the overlooks in the Frontenac State Park.

- Although non-karstic, the area near the proposed sites has significant water resources and the general texture of the top and sub-soils are mostly sand and gravel. Catastrophic environmental damage would occur in the event of any type of radioactive spill that was not immediately contained.

- NSP's application downplays the effects of the proposed site on terrestrial and migratory wildlife in the area. The Frontenac area is a nesting area for many species and a stop on the migratory path for many species of songbirds. The physical presence of a site and the interactions of the ambient air used for natural convective cooling of the canisters with natural air currents need to be considered.

## 8.7 Alternate Sites

None of the 16 properties proposed as alternate sites by concerned citizens are feasible and prudent for further consideration by the EQB. The permanency issue, public safety concerns

involving transportation risks, the uncertainty of long-term exposure to low-level radioactivity, and the apparent lack of derived benefits to the estimated costs of construction and maintenance of an off-site facility are the primary reasons for this outcome. Simply put, there are no risk- and cost-acceptable alternatives to on-site storage. Even on-site storage for an undeterminable period of time is unacceptable.

### 8.8 Identification of Environmental Issues to be Addressed in the Environmental Impact Assessment

The Task Force identified numerous significant environmental issues associated with the project design and site alternatives which should be addressed in the EIA.

- Issues associated with the transportation of nuclear waste through populated areas are paramount.
- Risk assessments of on-site accidents and terrorist incidents are critical to any assessment.
- Socioeconomic issues are as important as public health and safety and environmental issues.
- Perceptions of impacted citizens are equally as important as measurable issues and impact significantly on quality of life.
- Emergency response capabilities of impacted communities should be assessed.
- Health issues associated with dry casks need to be assessed only after a final design has been accepted.
- Health baseline and health assessment studies of impacted areas should be required and developed prior to construction.
- NRC licensing requirements associated with the potential regional impact due to the construction, operation or decommissioning of a proposed nuclear waste storage facility must be identified.
- A proposed site should be evaluated with respect to the effects on populations in the region resulting from the release of radioactive materials under normal and accident conditions during the operation and decommissioning; in this evaluation, both usual and unusual regional and site characteristics should be taken into account.
- A cost-benefit analysis is necessary for each proposed site. The benefits, both long- and short-term, should be weighed against the fiscal, societal, and environmental costs associated with the construction, operation, and decommissioning of the site.
- State experts, such as a state archeologist, meteorologist, geologist, and a biologist, as well as people who live in the impacted areas, can assist in the evaluation of the sites. Their impact will ensure that environmental issues are properly addressed. Environmental issues should include effects on wildlife, surface water and wetlands, archeological and historic resources, and geology and soils.
- An analysis of the electric utility legal framework is necessary within the scoping of environmental issues.

## 9.0 TASK FORCE RECOMMENDATIONS

- The Task Force recommends that off-site storage not receive further consideration.

- The Task Force recommends that the Minnesota Legislature revisit the 1994 legislation regarding off-site storage of nuclear waste in the context of the guidelines and principles set forth for the Electric Energy Task Force. Any legislative solution must be made in compliance with MERA and MEPA which require that environmental issues are paramount in legislation that has an environmental impact. Any legislative solution should also incorporate principles of the Sustainable Development Initiative (Appendix S). Off-site storage anywhere in Minnesota puts its citizens, present and future in harm's way.

- The Certificate of Need requirements, as they apply to the development of an off-site radioactive waste management facility, should be thoroughly reviewed. The PUC should review the Certificate of Need requirements as they apply to the development of an off-site radioactive waste management facility and issue a formal order as to the sufficiency of the Certificate of Need as it applies to off-site storage.

- Based on the alarming deficiencies and extreme shortcomings of NSP's application and the public safety, health, environmental, and socioeconomic factors cited in this report, the EQB should reject NSP's proposed sites "O" and "P" from further consideration.

- The Task Force recommends that the EQB use the issues and procedures described in this report as a basis for the Environmental Impact Assessment.

### Statement of Concern

The Task Force, after evaluating the alternatives, finds that on-site storage is less onerous than off-site storage in that it avoids some of the dangers associated with transportation and the difficulties of emergency response.

- The Task Force, however, also supports the public perception that spent fuel should not be stored in close proximity to any human population.

- Further, the question of permanency is unresolved. There is no demonstrated, viable alternate site and there is no assurance of when irradiated fuel will be moved to an interim or permanent storage facility.

When this is combined with the preference for long-term, on-site storage, there is an inherent conflict in the Prairie Island situation. That conflict is the proximity of NSP's plant and storage to the Prairie Island Mdewakanton Dakota Community.

The Task Force concludes that:

In 1993, the Minnesota Court of Appeals deemed the Prairie Island facility a permanent facility. If plans to site in Goodhue County are abandoned, the Prairie Island site must be regarded as permanent, and an EIS must be

completed on the site as a permanent site.

The 1994 legislation required an agreement between the state and NSP to which the Prairie Island Mdewakanton Dakota Community (here in after referred to as the "Community") is an intended third party beneficiary. This binding agreement requires, among other things, that NSP make a good faith effort to site in Goodhue County and that NSP file an application with the NRC by December 31, 1996. If NSP and the state do not live up to the agreement, the Community has the right to sue for enforcement.

The language of the legislation may not be amended or repealed to eliminate the "Goodhue County" requirement without express approval of the Community. If a change is attempted without approval of the Community, they may sue and the "Goodhue County" requirement stands. The rights of an intended third-party beneficiary are well established. Any change in the 1994 legislation that would eliminate the "Goodhue County" requirement must be approved by the Community. This is the right, agreed to by both the state and NSP.

For these reasons, the Task Force concludes that a long-term solution is needed, and a long-term solution requires that the Community and all affected parties be involved in that solution.

# APPENDICES

Appendices A, C, D and E are included in this report. The remaining appendices are voluminous, and are available for review as a separate set of volumes at the central public libraries in Red Wing, Lake City, Rochester, and Minneapolis, and also at the offices of the MEQB at 300 Centennial Bldg., 658 Cedar Street, St. Paul and at the Legislative Reference Library, 600 State Office Building, 100 Constitution Ave., St. Paul.

EQB

In the Matter of the
Application for Certificate of Site Compatibility
for the Goodhue County Independent Spent Nuclear
Fuel Storage Facility

ORDER OF THE CHAIR

APPOINTMENT OF SITING ADVISORY TASK FORCE AND CHARGE

WHEREAS, on August 17, 1995, the Minnesota Environmental Quality Board accepted the Application for Site Compatibility for the Goodhue County Independent Spent Nuclear Fuel Storage Facility; and

WHEREAS, the Board further authorized the Chair to appoint members and a chair of the Siting Advisory Task Force and to issue a charge to the Task Force; and

WHEREAS, the Board provided public notice of the opportunity for any person to submit nominations for membership on the Task Force.

NOW THEREFORE I HEREBY APPOINT the following persons to the Siting Advisory Task Force for the Goodhue County Independent Spent Nuclear Fuel Storage Facility project:

1. Dewer Baringer, Red Wing
2. Suzanne Blue, Red Wing
3. Willard Bremer, Lake City
4. Jeff Cole, Red Wing
5. Dan Dietrich, Frontenac
6. Kristin Eide-Tollefson, Frontenac
7. Bruce Halstead, Chair, Frontenac
8. Robert Johnson, Lake City
9. Susan Johnson, Red Wing
10. Ralph Lentz, Vice Chair, Lake City
11. Joan Marshman, Frontenac
12. Ken Moss, Red Wing

MORE>

13. John Sandquist, Red Wing

14. Heather Westra, Welch

15. John Wurst, Lake City

FURTHER, I CHARGE the Task Force as follows:

The Siting Advisory Task Force for the Goodhue County Independent Spent Nuclear Fuel Storage Facility project shall assist the Environmental Quality Board in its deliberation of an Application for a Certificate of Site Compatibility, recognizing its advisory role and the established policy of the state to locate nuclear waste storage facilities in an orderly manner compatible with environmental preservation and the efficient use of resources.

The Task Force shall:

- Review the project proposer's Application for a Certificate of Site Compatibility, and evaluate the proposer's preferred and alternate sites and the environmental analysis.

- Determine if any additional sites should be considered, identify such sites, and conduct an environmental review of additional sites consistent with the siting criteria provided in Minn. Rule 4400.3310.

- Identify significant environmental issues associated with the project design and site alternatives which will be addressed in the Environmental Impact Assessment, guided by the "scoping" procedure provided in Minn. Rule 4410.2100.

- Identify a site preferred by the Task Force.

- Prepare a report of the Task Force, including its preferred site recommendation, to be submitted to the Board and to the Administrative Law Judge during the public hearing.

- In conduct of its work, the Task Force shall encourage public and governmental participation at open meetings.

- Establish reasonable attendance expectations for its membership, including a minimum attendance required to vote on a preferred site recommendation.

- Utilize the Board's staff to support the work of the Task Force.

Dated 9-7-95

Cynthia C Jepsen

Cynthia Jepsen, Chair

EQB

In the Matter of the
Application for Certificate of Site Compatibility
for the Goodhue County Independent Spent Nuclear
Fuel Storage Facility

AMENDED ORDER OF THE CHAIR

## APPOINTMENT OF SITING ADVISORY TASK FORCE AND CHARGE

WHEREAS, on September 7, 1995, the Chair of the Minnesota Environmental Quality Board (EQB) issued an order appointing and charging a 15 member Site Advisory Task Force in the above referenced matter; and

WHEREAS, to furthur the objective of attaining a reasonably balanced representation of the community, the Chair added a 16th member, Mr. Jerry Dunbar; and

WHEREAS, after the first meeting of the Task Force, an appointed member, Mr. Ken Moss, resigned due to personal scheduling conflicts with meetings of the Task Force; and

WHEREAS, the Site Advisory Task Force, by concensus, has requested that the charge be amended to extend to the Task Force the option of not identifying a preferred site, and the Chair of the EQB concurs.

NOW THEREFORE I HEREBY AMEND APPOINTMENTS to the Siting Advisory Task Force for the Goodhue County Independent Spent Nuclear Fuel Storage Facility project as follows:

1. Dewey Baringer, Red Wing
2. Suzanne Blue, Red Wing
3. Willard Bremer, Lake City
4. Jeff Cole, Red Wing
5. Dan Dietrich, Frontenac
6. Kristin Eide-Tollefson, Frontenac
7. Bruce Halstead, Chair, Frontenac
8. Robert Johnson, Lake City
9. Susan Johnson, Red Wing
10. Ralph Lentz, Vice Chair, Lake City
11. Joan Marshman, Frontenac

12. Jerry Dunbar, Lake City (new member)

13. John Sandquist, Red Wing

14. Heather Westra, Welch

15. John Wurst, Lake City

FURTHER, I AMEND THE CHARGE to the Task Force as follows:

The Siting Advisory Task Force for the Goodhue County Independent Spent Nuclear Fuel Storage Facility project shall assist the Environmental Quality Board in its deliberation of an Application for a Certificate of Site Compatibility, recognizing its advisory role and the established policy of the state to locate nuclear waste storage facilities in an orderly manner compatible with environmental preservation and the efficient use of resources.

The Task Force shall:

- Review the project proposer's Application for a Certificate of Site Compatibility, and evaluate the proposer's preferred and alternate sites and the environmental analysis.

- Determine if any additional sites should be considered, identify such sites, and conduct an environmental review of additional sites consistent with the siting criteria provided in Minn. Rule 4400.3310.

- Identify significant environmental issues associated with the project design and site alternatives which will be addressed in the Environmental Impact Assessment, guided by the "scoping" procedure provided in Minn. Rule 4410.2100.

- Identify a site preferred by the Task Force if a majority of the Task Force considers such a recommendation to be justified by the information in the record of its deliberations.

- Prepare a report of the Task Force to be submitted to the Board and to the Administrative Law Judge during the public hearing.

- In conduct of its work, the Task Force shall encourage public and governmental participation at open meetings.

- Establish reasonable attendance expectations for its membership, including a minimum attendance required to vote on a preferred site recommendation.

- Utilize the Board's staff to support the work of the Task Force.

Dated 9-29-95

Cynthia C Jepsen

Cynthia Jepsen, Chair

EQB

In the Matter of the
Application for Certificate of Site
Compatibility for the Goodhue County
Independent Spent Nuclear Fuel Storage Facility
MEQB Docket NSP-ISNFSF-1

SUPPLEMENTAL
ORDER OF THE
CHAIR

ADDITIONAL APPOINTMENTS TO SITE ADVISORY TASK FORCE

WHEREAS, on September 7, 1995, the Chair of the Minnesota Environmental Quality Board (EQB) issued an order appointing and charging a 15-member Site Advisory Task Force in the above referenced matter, and on September 29, 1995 issued an amended order; and

WHEREAS, in the conduct of its charge the Task Force identified candidate alternate sites in three communities which were not represented on the Task Force; and

WHEREAS, representation on the Task Force by all potentially affected communities is considered essential by both the Environmental Quality Board and the current Task Force membership.

WHEREAS, to expedite representation of the three communities, the Chair of Environmental Quality Board determined that an elected township official should be appointed, and that official should be selected by agreement among members of each township board of supervisors.

NOW THEREFORE I HEREBY APPOINT to the Site Advisory Task Force the following additional members:

Al Moorhouse, Stanton Township

Darwin Fox, Welch Township

Charles Fanslow, Hay Creek Township

Dated 1/2/96

Charles Williams, Chair

ENVIRONMENTAL QUALITY BOARD, 550 CEDAR STREET, ST. PAUL, MN 55155 612 296-2603 FAX 612 296-3698 STAFF PROVIDED BY EQB PLANNING


# Procedures, Considerations and Rules For Siting A Dry Cask Storage Facility

Adopted by the Minnesota Environmental Quality Board, October 20, 1994

***The following sections of the Power Plant Siting Act, Minnesota Statutes 116C.51 to 116C.69, have been adopted by the Environmental Quality Board as necessary to designate the site for a dry cask storage facility and to issue a Certificate of Site Compatibility.***

**116C.51 Citation.**

Sections 116C.51 to 116C.69 shall be known as the Minnesota power plant siting act.

**116C.52 Definitions.**

Subdivision 1. Applicability. As used in sections 116C.51 to 116C.68, the terms defined in this section have the meanings given them, unless otherwise provided or indicated by the context.

Subd. 2. Board. "Board" shall mean the Minnesota environmental quality board.

Subd. 3. Construction. "Construction" means any clearing of land, excavation, or other action that would adversely affect the natural environment of the site or route but does not include changes needed for temporary use of sites or routes for nonutility purposes, or uses in securing survey or geological data, including necessary borings to ascertain foundation conditions.

Subd. 5. Large electric power generating plant. "Large electric power generating plant" shall mean electric power generating equipment and associated facilities designed for or capable of operation at a capacity of 50,000 kilowatts or more. ***(Note: A dry cask storage facility is an associated facility. "Dry cask storage facility" means a high-level radioactive waste facility that is located in Goodhue county but not on Prairie Island for storage of spent nuclear fuel produced by a nuclear reactor at Prairie Island nuclear power generating plant. Minn. Stat. §116C.80, Subdivision 1. 1994)***

Subd. 6. Large electric power facilities. "Large electric power facilities" means high voltage transmission lines and large electric power generating plants.

Subd. 7. Person. "Person" shall mean an individual, partnership, joint venture, private or public corporation, association, firm, public service company, cooperative, political subdivision, municipal corporation, government agency, public utility district, or any other entity, public or private, however organized.

Subd. 9. Site. "Site" means the location of a large electric power generating plant.

Subd. 10. Utility. "Utility" shall mean any entity engaged in this state in the generation, transmission or distribution of electric energy including, but not limited to, a private investor owned utility, cooperatively owned utility, and a public or municipally owned utility.

**116C.53 Siting authority.**

Subdivision 1. Policy. The legislature hereby declares it to be the policy of the state to locate large electric power facilities in an orderly manner compatible with environmental preservation and the efficient use of resources. In accordance with this policy the board shall choose locations that minimize adverse human and environmental impact while insuring continuing electric power system reliability and integrity and insuring that electric energy needs are met and fulfilled in an orderly and timely fashion.

Subd. 2. Jurisdiction. The board is hereby given the authority to provide for site and route selection.

Subd. 3. Interstate routes. The board, in discharge of its duties pursuant to sections 116C.51 to 116C.69 may make joint investigations, hold joint hearings within or without the state, and issue joint or concurrent orders in conjunction or concurrence with any official or agency of any state or of the United States. The board may negotiate and enter into any agreements or compacts with agencies of other states, pursuant to any consent of congress, for cooperative efforts in certifying the construction, operation, and maintenance of large electric power facilities in accord with the purposes of sections 116C.51 to 116C.69 and for the enforcement of the respective state laws regarding such facilities.

**116C.57 Designation of sites and routes; procedures; considerations.**

Subdivision 1. Designation of sites suitable for specific facilities; reports. A utility must apply to the board in a form and manner prescribed by the board for designation of a specific site for a specific size and type of facility. The application shall contain at least two proposed sites. Pursuant to sections 116C.57 to 116C.60, the board shall study and evaluate any site proposed by a utility and any other site the board deems necessary which was proposed in a manner consistent with rules adopted by the board concerning the form, content, and timeliness of proposals for alternate sites. The board shall indicate the reasons for any refusal and indicate changes in size or type of facility necessary to allow site designation. Within

a year after the board's acceptance of a utility's application, the board shall decide in accordance with the criteria specified in section 116C.55, subdivision 2, the responsibilities, procedures and considerations specified in section 116C.57, subdivision 4, and the considerations in chapter 116D which proposed site is to be designated. The board may extend for just cause the time limitation for its decision for a period not to exceed six months. When the board designates a site, it shall issue a certificate of site compatibility to the utility with any appropriate conditions. The board shall publish a notice of its decision in the state register within 30 days of site designation. No large electric power generating plant shall be constructed except on a site designated by the board.

Subd. 4. Considerations in designating sites and routes. To facilitate the study, research, evaluation and designation of sites and routes, the board shall be guided by, but not limited to, the following responsibilities, procedures, and considerations:

(1) Evaluation of research and investigations relating to the effects on land, water and air resources of large electric power generating plants and high voltage transmission line routes and the effects of water and air discharges and electric fields resulting from such facilities on public health and welfare, vegetation, animals, materials and aesthetic values, including base line studies, predictive modeling, and monitoring of the water and air mass at proposed and operating sites and routes, evaluation of new or improved methods for minimizing adverse impacts of water and air discharges and other matters pertaining to the effects of power plants on the water and air environment;

(2) Environmental evaluation of sites and routes proposed for future development and expansion and their relationship to the land, water, air and human resources of the state;

(3) Evaluation of the effects of new electric power generation and transmission technologies and systems related to power plants designed to minimize adverse environmental effects;

(5) Analysis of the direct and indirect economic impact of proposed sites and routes including, but not limited to, productive agricultural land lost or impaired;

(6) Evaluation of adverse direct and indirect environmental effects which cannot be avoided should the proposed site and route be accepted;

(7) Evaluation of alternatives to the applicant's proposed site or route proposed pursuant to subdivisions 1 and 2;

(11) Evaluation of irreversible and irretrievable commitments of resources should the proposed site or route be approved; and

(12) Where appropriate, consideration of problems raised by other state and federal agencies and local entities.

(13) If the board's rules are substantially similar to existing rules and regulations of a federal agency to which the utility in the state is subject, the federal rules and regulations shall be applied by the board.

(14) No site or route shall be designated which violates state agency rules.

Subd. 6. Recording of survey points. The permanent location of monuments or markers found or placed by a utility in a survey of right-of-way for a route shall be placed on record in the office of the county recorder or registrar of titles. No fee shall be charged to the utility for recording this information.

**116C.58 Public hearings; notice.**

The board shall hold at least one public hearing in each county where a site or route is being considered for designation pursuant to section 116C.57. Notice and agenda of public hearings and public meetings of the board held in each county shall be given by the board at least ten days in advance but no earlier than 45 days prior to such hearings or meetings. Notice shall be by publication in a legal newspaper of general circulation in the county in which the public hearing or public meeting is to be held and by certified mailed notice to chief executives of the regional development commissions, counties, organized towns and the incorporated municipalities in which a site or route is proposed. All hearings held for designating a site or route or for exempting a route shall be conducted by an administrative law judge from the office of administrative hearings pursuant to the contested case procedures of chapter 14. Any person may appear at the hearings and present testimony and exhibits and may question witnesses without the necessity of intervening as a formal party to the proceedings.

**116C.59 Public participation.**

Subdivision 1. Advisory task force. The board may appoint one or more advisory task forces to assist it in carrying out its duties. Task forces appointed to evaluate sites or routes considered for designation shall be comprised of as many persons as may be designated by the board, but at least one representative from each of the following: Regional development commissions, counties and municipal corporations and one town board member from each county in which a site or route is proposed to be located. No officer, agent, or employee of a utility shall serve on an advisory task force. Reimbursement for expenses incurred shall be made pursuant to the rules governing state employees. The task forces expire as provided in section 15.059, subdivision 6.

Subd. 2. Other public participation. The board shall adopt broad spectrum citizen participation as a principal of operation. The form of public participation shall not be limited to public hearings and advisory task forces and shall be consistent with the board's rules and guidelines as provided for in section 116C.66.

Subd. 3. Public advisor. The board shall designate one staff person for the sole purpose of assisting and advising those affected and interested citizens on how to effectively participate in site or route proceedings.

Subd. 4. Scientific advisory task force. The board may appoint one or more advisory task forces composed of technical and scientific experts to conduct research and make recommendations concerning generic issues such as health and safety, underground routes, double circuiting and long-range route and site planning. Reimbursement for expenses incurred shall be made pursuant to the rules governing reimbursement of state employees. The task forces expire as provided in section 15.059, subdivision 6.

**116C.60 Public meetings; transcript of proceedings; written records.**

Meetings of the board, including hearings, shall be open to the public. Minutes shall be kept of board meetings and a complete record of public hearings shall be kept. All books, records, files, and correspondence of the board shall be available for public inspection at any reasonable time. The council shall also be subject to section 471.705.

**116C.61 Local regulation; state permits; state agency participation.**

Subdivision 1. Regional, county and local ordinances, rules, regulations; primary responsibility and regulation of site designation, improvement and use. To assure the paramount and controlling effect of the provisions herein over other state agencies, regional, county and local governments, and special purpose government districts, the issuance of a certificate of site compatibility or transmission line construction permit and subsequent purchase and use of such site or route locations for large electric power generating plant and high voltage transmission line purposes shall be the sole site approval required to be obtained by the utility. Such certificate or permit shall supersede and preempt all zoning, building, or land use rules, regulations, or ordinances promulgated by regional, county, local and special purpose government.

Subd. 2. Facility licensing. Notwithstanding anything herein to the contrary, utilities shall obtain state permits that may be required to construct and operate large electric power generating plants and high voltage transmission lines. A state agency in processing a utility's facility permit application shall be bound to the decisions of the board, with respect to the site or route designation, and with respect to other matters for which authority has been granted to the board by sections 116C.51 to 116C.69.

Subd. 3. State agency participation. State agencies authorized to issue permits required for construction or operation of large electric power generating plants or high voltage transmission lines shall participate in and present the position of the agency at public hearings and all other activities of the board on specific site or route designations of the board, which position shall clearly state whether the site or route being considered for designation or permit approval for a certain size and type of facility will be in compliance with state agency standards, rules or policies.

**116C.62 Improvement of sites and routes.**

Utilities which have acquired a site or route in accordance with sections 116C.51 to 116C.69 may proceed to construct or improve the site or route for the intended purposes at any time, subject to section 116C.61, subdivision 2, provided that if the construction and improvement commences more than four years after a certificate or permit for the site or route has been issued then the utility must certify to the board that the site or route continues to meet the conditions upon which the certificate of site compatibility or transmission line construction permit was issued.

**116C.63 Eminent domain powers; right of condemnation.**

Subdivision 1. Nothing in this section shall invalidate the right of eminent domain vested in utilities by statute or common law existing as of May 24, 1973, except to the extent modified herein. The right of eminent domain shall continue to exist for utilities and may be used according to law to accomplish any of the purposes and objectives of sections 116C.51 to 116C.69, including acquisition of the right to utilize existing high voltage transmission facilities which are capable of expansion or modification to accommodate both existing and proposed conductors. Notwithstanding any law to the contrary, all easement interests shall revert to the then fee owner if a route is not used for high voltage transmission line purposes for a period of five years.

Subd. 2. In eminent domain proceedings by a utility for the acquisition of real property proposed for construction of a route or a site, the proceedings shall be conducted in the manner prescribed in chapter 117, except as otherwise specifically provided in this section.

Subd. 3. When such property is acquired by eminent domain proceedings or voluntary purchase and the amount the owner shall receive for the property is finally determined, the owner who is entitled to payment may elect to have the amount paid in not more than ten annual installments, with interest on the deferred installments, at the rate of eight percent per annum on the unpaid balance, by submitting a written request to the utility before any payment has been made. After the first installment is paid the petitioner may make its final certificate, as provided by law, in the same manner as though the entire amount had been paid.

Subd. 4. When private real property that is an agricultural or nonagricultural homestead, nonhomestead agricultural land, rental residential property, and both commercial and noncommercial seasonal residential recreational property, as those terms are defined in section 273.13 is proposed to be acquired for the construction of a site or route by eminent domain proceedings, the fee owner, or when applicable, the fee owner with the written consent of the contract for deed vendee, or the contract for deed vendee with the written consent of the fee owner, shall have the option to require the utility to condemn a fee interest in any amount of contiguous, commercially viable land which the owner or vendee wholly owns or has contracted to own in undivided fee and elects in writing to transfer to the utility within 60 days after receipt of the notice of the objects of the petition filed pursuant to section 117.055. Commercial

viability shall be determined without regard to the presence of the utility route or site. The owner or, when applicable, the contract vendee shall have only one such option and may not expand or otherwise modify an election without the consent of the utility. The required acquisition of land pursuant to this subdivision shall be considered an acquisition for a public purpose and for use in the utility's business, for purposes of chapter 117 and section 500.24, respectively; provided that a utility shall divest itself completely of all such lands used for farming or capable of being used for farming not later than the time it can receive the market value paid at the time of acquisition of lands less any diminution in value by reason of the presence of the utility route or site. Upon the owner's election made under this subdivision, the easement interest over and adjacent to the lands designated by the owner to be acquired in fee, sought in the condemnation petition for a high voltage transmission line right-of-way shall automatically be converted into a fee taking.

Subd. 5. A utility shall notify by certified mail each person who has transferred any interest in real property to the utility after July 1, 1974, but prior to the effective date of Laws 1977, chapter 439, for the purpose of a site or route that the person may elect in writing within 90 days after receipt of notice to require the utility to acquire any remaining contiguous parcel of land pursuant to this section or to return any payment to the utility and require it to make installment payments pursuant to this section.

**116C.64 Failure to act.**

If the board fails to act within the times specified in section 116C.57, any affected utility may seek an order of the district court requiring the board to designate or refuse to designate a site or route.

**116C.645 Revocation or suspension.**

A site certificate or construction permit may be revoked or suspended by the board after adequate notice of the alleged grounds for revocation or suspension and a full and fair hearing in which the affected utility has an opportunity to confront any witness and respond to any evidence against it and to present rebuttal or mitigating evidence upon a finding by the board of:

(1) Any false statement knowingly made in the application or in accompanying statements or studies required of the applicant, if a true statement would have warranted a change in the board's findings;

(2) Failure to comply with material conditions of the site certificate or construction permit, or failure to maintain health and safety standards; or

(3) Any material violation of the provisions of sections 116C.51 to 116C.69, any rule promulgated pursuant thereto, or any order of the board.

**116C.65 Judicial review.**

Any utility, party or person aggrieved by the issuance of a certificate or emergency certificate of site compatibility or transmission line construction permit from the board or a certification of continuing suitability filed by a utility with the board or by a final order in accordance with any rules promulgated by the board, may appeal to the court of appeals in accordance with chapter 14. The appeal shall be filed within 60 days after the publication in the State Register of notice of the issuance of the certificate or permit by the board or certification filed with the board or the filing of any final order by the board.

**116C.66 Rules.**

The chief administrative law judge shall, prior to January 1, 1978, adopt procedural rules for public hearings relating to the site and route designation process and to the route exemption process. The rules shall attempt to maximize citizen participation in these processes.

**116C.68 Enforcement, penalties.**

Subdivision 1. Any person who violates sections 116C.51 to 116C.69 or any rule promulgated hereunder, or knowingly submits false information in any report required by sections 116C.51 to 116C.69 is guilty of a misdemeanor for the first offense and a gross misdemeanor for the second and each subsequent offense. Each day of violation shall constitute a separate offense.

Subd. 2. The provisions of sections 116C.51 to 116C.69 or any rules promulgated hereunder may be enforced by injunction, action to compel performance or other appropriate action in the district court of the county wherein the violation takes place. The attorney general shall bring any action under this subdivision upon the request of the board.

Subd. 3. When the court finds that any person has violated sections 116C.51 to 116C.69, any rule hereunder, knowingly submitted false information in any report required by sections 116C.51 to 116C.69 or has violated any court order issued under sections 116C.51 to 116C.69, the court may impose a civil penalty of not more than $10,000 for each violation. These penalties shall be paid to the general fund in the state treasury.

*The following sections of Minnesota Rules, Chapter 4400, have been adopted by the Environmental Quality Board as necessary to designate the site for a dry cask storage facility and to issue a Certificate of Site Compatibility.*

**4400.0200 DEFINITIONS.**

Subpart 1. **Scope.** As used in this chapter, the following terms have the meanings given them.

Subp. 2. **Act.** "Act" means the Power Plant Siting Act of 1973, as amended, Minnesota Statutes, sections 116C.51 to 116C.69.

Subp. 3. **Board.** "Board" means the Minnesota Environmental Quality Board.

Subp. 4. **Community benefits.** "Community benefits" means those benefits to the local community, other than economic development, that result from power plant design or location. Examples include use of community solid waste as a supplemental fuel, joint water supply, improving the economic viability of existing rail lines, and increased tax base.

Subp. 5. **Construction.** "Construction" means:

A. any clearing of land, excavation, or other improvement that would adversely affect the natural environment of a site or route but does not include changes needed for temporary use of sites or routes for non-utility purposes, or uses in securing survey or geological data, including necessary boring, to ascertain foundation conditions; or

Subp. 6. **Developed portion of plant site.** "Developed portion of plant site" means the portion of the LEPGP site, exclusive of makeup water storage reservoirs or cooling ponds, where structures or other facilities or land uses necessary for plant operation preclude crop production.

Subp. 6a. **Environmental impact assessment; EIA.** "Environmental impact assessment" or "EIA" means a detailed written statement that describes proposed HVTLs and LEPGPs and satisfies the requirements of Minnesota Statutes, section 116D.04.

Subp. 7. **File.** "File" means to deliver 40 copies to the office of the chair of the board.

Subp. 9. **Large electric power facilities.** "Large electric power facilities" means high voltage transmission lines and large electric power generating plants.

Subp. 10. **Large electric power generating plant; LEPGP.** "Large electric power generating plant" and "LEPGP" mean electric power generating equipment and associated facilities designed for or capable of operation at a capacity of 50,000 kilowatts or more. ***(Note: A dry cask facility is an associated facility. "Dry cask storage facility" means a high-level radioactive waste facility that is located in Goodhue county but not on Prairie Island for storage of spent nuclear fuel produced by a nuclear reactor at the Prairie Island nuclear power generating plant. Minn. Stat. §116C.80, Subdivision 1. 1994)***

Subp. 12. **Person.** "Person" means any individual, partnership, joint venture, private or public corporation, association, firm, public service company, cooperative, political subdivision, municipal corporation, government agency, public utility district, or any other entity, public or private, however organized.

Subp. 13. **Prime farmland.** "Prime farmland" means those soils that meet the specifications of Code of Federal Regulations 1980, title 7, section 657.5 (a).

Subp. 14. **Public adviser.** "Public adviser" means a staff person designated by the board for the sole purpose of assisting and advising affected or interested citizens on how to effectively participate in the site or route designation processes.

Subp. 18. **Site.** "Site" means an area of land required for the construction and operation of an LEPGP.

Subp. 19. **Technical assumptions.** "Technical assumptions" means the assumptions necessary to evaluate resource requirements of LEPGPS of a specified capacity, fuel type, and design and to evaluate the availability of resources to meet those requirements.

Subp. 20. **Utility.** "Utility" means any entity engaged in this state in the generation, transmission, or distribution of electric energy including, but not limited to, a private investor owned utility, a cooperatively owned utility, a public or municipally owned utility, or a private corporation.

## 4400.0300 PURPOSE AND AUTHORITY.

Parts 4400.0200 to 4400.4900 are prescribed by the Minnesota Environmental Quality Board pursuant to the authority granted to the board in the Power Plant Siting Act, Minnesota Statutes, sections 116C.51 to 116C.69, to give effect to the purposes of the act.

It is the purpose of the act and the policy of the state to locate large electric power facilities in an orderly manner compatible with environmental preservation and the efficient use of resources. In accordance with this policy, the board shall choose locations that minimize adverse human and environmental impact while ensuring continuing electric power system reliability and integrity and ensuring that electric energy needs are met and fulfilled in an orderly and timely fashion. The board shall provide for broad spectrum citizen participation as a principle of operation. To

ensure effective citizen participation, the board shall maintain a public education program on, but not limited to, the considerations identified in Minnesota Statutes, section 116C.57, subdivision 4.

SITE DESIGNATION AND CERTIFICATE OF SITE COMPATIBILITY

4400.2600 APPLICATIONS FOR SITE DESIGNATION AND CERTIFICATE OF SITE COMPATIBILITY.

Subpart 1. **Contents.** An application shall be filed that includes any information necessary to make the evaluation required in part 4400.3310 and the following:

A. a statement of proposed ownership of the facility as of the day of filing and an affidavit authorizing the applicant to act on behalf of those planning to participate in the project;

B. the size and type of the proposed LEPGP;

C. at least two proposed sites for the proposed LEPGP;

D. the engineering and operational design for the LEPGP at each of the proposed sites;

E. a cost analysis of the LEPGP at each proposed site;

F. an engineering analysis of each of the proposed sites;

G. a description of the environmental setting and the potential human and natural environmental impacts of each site and measures proposed by the applicant to mitigate adverse effects, presented in the order shown in part 4400.3310;

H. a listing and brief description of federal and state permits that may be required for each proposed site; and

I. the certificate of need if available, or an acknowledgment of the receipt of a substantially complete certificate of need application by the Public Utilities Commission, if a certificate of need is required by Minnesota Statutes, Chapter 216B.

Subp. 1a. **Distribution.** A copy of the application shall be provided by board staff to each member of the board.

**4400.2710 ACCEPTANCE OF APPLICATION FOR SITE DESIGNATION AND CERTIFICATE OF SITE COMPATIBILITY.**

Subpart 1. **Board action required.** The board shall either accept or reject an application at its first regularly scheduled meeting after the application is filed with the board, provided the application is filed at least 21 days before that meeting.

Subp. 2. **Rejection of application.** If the board rejects the application, the board shall inform the applicant in writing which deficiencies, if corrected, will allow the application to be accepted. If the applicant has corrected the deficiencies or provided the board with the required information 14 days in advance of a regularly scheduled meeting, the board must reconsider acceptance of the application at that meeting. If the applicant fails to meet the conditions established by the board for reconsideration of the rejected application, the rejection shall stand.

If the rejection stands, the applicant may reapply at any time. If the board fails to act within the times specified in this subpart, the application shall be considered accepted.

Subp. 3. **Additional information.** On acceptance of the application, the board shall proceed with the actions required in parts 4400.2800 to 4400.3500. The applicant shall provide additional relevant information that the board considers necessary to process the application.

**4400.2720 BOARD ACTION UPON ACCEPTANCE.**

On acceptance of an application for site designation and a certificate of site compatibility, the board shall designate a project leader who shall serve as an independent representative of the board during the formal siting proceedings. The project leader shall be responsible for coordinating assigned staff responsibilities during the siting process and in preparing the EIA. The project leader shall ensure that the record of the proceedings is fully developed and responsive to all issues raised in the process. The project leader may intervene as a party in the public hearing if appropriate. Positions taken or representations made by the project leader during the siting process are not binding on the board.

**4400.2800 SITE ADVISORY TASK FORCE.**

Upon acceptance of an application for site designation and a certificate of site compatibility, the board may appoint a site advisory task force and its chair consistent with the act and part 4405.0800. The board shall provide guidance to the task force in the form of a charge. Site advisory task forces are advisory and are to assist the board in evaluating the application and alternatives, and in determining the scope of the EIA prepared under part 4400.3210.

**4400.2900 PUBLIC ADVISER.**

On acceptance of an application for site designation and a certificate of site compatibility, the board shall designate a public adviser. The public adviser shall be available to any person to advise that person on how to effectively participate in the siting process. The public adviser shall not give legal advice or advice which may affect the legal rights of the person being advised or act as an advocate.

**4400.3000 INFORMATION MEETINGS.**

The board shall hold at least two information meetings. After acceptance of an application for site designation and a certificate of site compatibility, the board shall hold at least one information meeting in the area affected by the applicant's proposal to explain the site designation process, receive comments on the scope of the EIA, and to respond to questions raised by the public.

Before the public hearings held to consider the sites approved for consideration by the board, the board shall hold an information meeting in each county in which a site is proposed to be located

to explain the site designation process, receive comments on issues and alternatives described in the EIA, and to respond to questions raised by the public.

**4400.3100 SITE PROPOSALS.**

Subpart 1. **Acceptance for consideration.** The board shall accept for consideration the sites proposed by the applicant and may accept for consideration any other site which is proposed in accord with this part. Only sites which have been accepted by the board prior to notice of the public hearing shall be considered at the public hearing. Sites accepted shall be identified by the board in accordance with part 4400.3710. In order that a site be included in the public hearing record, any proposer of a site which has been accepted for consideration at the public hearing by the board shall make a presentation of facts on the merits of the proposal at the public hearing.

Subp. 2. **Agency and advisory task force site proposals.** The board member agencies, power plant siting staff, and the site advisory task force may propose sites directly to the board. Site proposals made by the site advisory task force must be made no later than 105 days after acceptance of the application by the board.

Subp. 3. **Other sources of site proposals.** Any other person may propose a site as provided in this subpart:

A. The proposed site must be set out specifically on the appropriate general county highway map available from the Minnesota Department of Transportation or on United States Geological Survey topographical maps.

B. The proposal must contain the data and analysis required in parts 4400.2600 and 4400.3310 with the exception of part 4400.2600, subpart 1, items C and E, unless the information is the same as provided by the applicant.

C. The proposal must be presented to the chair of the board within 70 days of acceptance of the application by the board.

Subp. 4. **Adequate preparation of proposal.** Within ten days of receipt of a site proposal, the chair of the board shall determine if the proposal is adequately prepared in accord with this part. If the chair of the board determines that it is adequately prepared, the chair shall forward the proposal to the board for its consideration at its next meeting. If the chair of the board determines that the proposal is not adequately prepared, the chair shall inform the proposer of any inadequacies in the proposal. The proposer shall have 15 days to provide additional information to the chair of the board. The chair of the board shall determine within ten days whether the amended proposal is adequately prepared. If the chair of the board then determines that the proposal is not adequately prepared, the proposer may appeal to the board at its next meeting to determine the adequacy of the proposal.

## 4400.3200 PUBLIC HEARINGS.

Public hearings held by the board under parts 4400.2600 to 4400.3500 shall be held for the purposes of collecting and verifying data and establishing a complete and accurate record upon which to base a decision. The hearing shall be conducted by an independent administrative law judge from the Office of Administrative Hearings. The conduct of these hearings shall be as prescribed by chapter 1405.

## 4400.3210 ENVIRONMENTAL IMPACT ASSESSMENT FOR LEPGP.

Subpart 1. **Record of hearings.** An environmental impact assessment (EIA) must be prepared for inclusion in the record of the public hearing under Minnesota Statutes, section 116C.58.

Subp. 2. **Contents.** The EIA must contain:

A. a summary of the project description provided in the project proposer's application;

B. a summary of the certificate of need decision, if one was required and is available; the EIA shall not consider need for the project and other issues determined by the Public Utilities Commission;

C. a description of the applicant's proposed sites and any alternative sites approved by the board for consideration at public hearing;

D. a description of feasible alternative designs;

E. an analysis of the potential human and natural environmental effects of each alternative site or design. The analysis must include those issues identified by the site advisory task force or by any interested person during the first public information meeting held under part 4400.3000;

F. a description of mitigative measures that could reasonably eliminate or minimize potential adverse effects;

G. a discussion of all known governmental permits and approvals required; and

H. an explanation of the board's siting process and how the public can participate, and specifically, how public comments on the EIA will be received for inclusion in the record of the public hearing.

Subp. 3. **Notice of availability.** The chair or the chair's designee shall provide notice of the availability of the EIA and how the public can participate in its review. The notice must be provided according to Minnesota Statutes, section 116C.58, and part 4400.3710, and may be provided in the notice of the hearing required. Notice must also be published in the EQB Monitor.

Subp. 4. **Distribution.** When notice of availability is provided under subpart 3, the EIA must be distributed to each member of the board and by certified mail to the persons receiving notice. At least one copy must be available for public review at the last public information meeting held before the public hearing and during the public hearing conducted under Minnesota Statutes, section 116C.58.

Subp. 5. **Comments.** The comment period begins when notice of availability of the EIA is published in the EQB Monitor and closes at the end of the oral portion of the public hearing. At least 30 days must be provided for comments. All comments become part of the hearing record as provided in part 1405.1800, subpart 5. The hearing record remains open until responses have been provided to all relevant comments which address deficiencies in the EIA pursuant to subpart 2. The date shall be set by the administrative law judge under part 1405.1400.

Subp. 6. **Adequacy.** Prior to designating a site and issuing a certificate of site compatibility for an LEPGP, the board shall make a finding and conclusion that the EIA, comments on the EIA, and responses to comments:

A. have adequately addressed significant environmental issues identified by the site advisory task force and the public under parts 4400.2800 and 4400.3000;

B. have been prepared in compliance with the requirements of this part; and

C. have addressed the issues raised on the scope of the EIA so that all issues have been analyzed.

Subp. 7. **Cooperative processes.** The chair or the chair's designee shall cooperate with federal agencies to the fullest extent possible to reduce duplication between Minnesota Statutes, Chapter 116D, and the National Environmental Policy Act, United States Code, Title 42, sections 4321 to 4361.

Subp. 8. **Costs.** The board shall assess the project proposer for its reasonable costs of preparing and distributing the EIA pursuant to part 4410.6000.

**4400.3310 SITING CONSIDERATIONS.**

Subpart 1. **Considerations.** To facilitate the evaluation and designation of LEPGP sites, the board shall be guided by the act and the following considerations:

A. effects on human settlement, including but not limited to, displacement, noise, aesthetics, community benefits, cultural values, recreation, and public services;

B. effects on public health and safety;

C. effects on land-based economies, including but not limited to, agriculture, forestry, tourism, and mining;

D. archaeological and historic resources;

E. effects on the natural environment;

F. rare and unique natural resources;

G. cumulative present and future demands on air and water resources;

H. application of design options which maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of generating capacity;

I. use of existing LEPGP sites;

J. use of existing transportation, pipeline, and electrical transmission systems;

K. costs of constructing and operating the facility which are dependent on design and site; and

L. adverse human and natural environmental effects which cannot be avoided.

Subp. 2. **Site exclusions.** The following resources within the state have been designated for preservation by action of the state or federal government for the benefit of the people and for future generations:

A. national parks;
B. national historic sites and landmarks;
C. national historic districts;
D. national wildlife refuges;
E. national monuments;
F. national wild, scenic, and recreational riverways;
G. state wild, scenic, and recreational rivers and their land use districts;
H. state parks;
I. nature conservancy preserves;
J. state scientific and natural areas; and
K. state and national wilderness areas.

These areas shall not be designated as a site for an LEPGP except for use for water intake or discharge facilities. If the board includes any of these areas within a site for use for water intake or discharge facilities, it may impose appropriate conditions in the certificate of site compatibility which protect these areas for the purpose for which they were designated. The board shall also consider the adverse effects of proposed sites on these areas which are located wholly outside of the boundaries of these areas.

Subp. 3. **Site exclusions when alternative sites exist.** Certain resources within the state shall not be designated for LEPGP sites unless all feasible and prudent alternatives would have greater adverse human and environmental impact. Designation of a site in these areas shall be consistent with Minnesota Statutes, section 116C.53, subdivision 1, and shall include conditions to minimize impacts which adversely affect the unique character of these areas. Economic considerations alone shall not justify approval of these areas. These areas are:

A. state registered historic sites;
B. state historic districts;
C. state wildlife management areas (except in cases where the plant cooling water is to be used for wildlife management purposes);
D. county parks;
E. metropolitan parks;
F. designated state and federal recreational trails;
G. designated trout streams; and
H. the rivers identified in Minnesota Statutes, section 85.32, subdivision 1.

Subp. 4. **Prime farmland exclusion.** When there exists a feasible and prudent alternative with less adverse environmental and noncompensable human effects, no LEPGP site shall be designated where the developed portion of the plant site includes more than 0.5 acres of prime farmland per megawatt of net generating capacity, and no makeup water storage reservoir or cooling pond site shall include more than 0.5 acres of prime farmland per megawatt of net generating capacity. These provisions do not apply to areas located within home rule charter or statutory cities; areas located within two miles of home rule charter or statutory cities of the first, second, and third class; or areas designated for orderly annexation under Minnesota Statutes, section 414.0325.

Subp. 5. **Sufficient water supply required.** No site shall be designated that does not have reasonable access to a proven water supply sufficient for plant operation. No use of groundwater shall be permitted where removal of groundwater results in material adverse effects on groundwater in and adjacent to the area, as determined in each case. The use of groundwater for high consumption purposes, such as cooling, shall be avoided if feasible and prudent surface water alternatives less harmful to the environment exist. Groundwater use to supplement available surface water shall be permitted if the cumulative impact minimizes environmental harm.

**4400.3400 SITE DESIGNATION AND ISSUANCE OF CERTIFICATE OF SITE COMPATIBILITY.**

Within one year after the board's acceptance of an application for a certificate of site compatibility, the board shall act on that application. When the board designates a site it shall issue a certificate of site compatibility with any appropriate conditions. The board's decision shall be based on the record, part 4400.3310, and the act. The board shall give the reasons for its decision in written findings of fact. If the board refuses to designate a site, it shall indicate the reasons for the refusal and indicate the necessary changes in size or type of facility to allow site designation.

**4400.3500 CERTIFICATE COMPLIANCE.**

Following site designation and issuance of a certificate of site compatibility, the board may require the permittee to supply plans and information as it deems necessary to determine whether or not the LEPGP is in compliance with the conditions of the certificate of site compatibility.

**4400.3710 NOTICES.**

Subpart 1. **When to notice.** The chair or the chair's designee shall provide notice consistent with the act at the following points in the routing and siting processes:

A. within 20 days of acceptance of any application filed with the board under the act, except an exemption application;

B. public information meetings;

C. availability of EIA;

D. public hearing; and

E. board designation of a site or route.

Subp. 2. **Content of notices.** All notices shall be provided consistent with the act, except for subpart 1, item E, and shall include, but not be limited to, the following information:

A. identification of the applicant;

B. date, time, and location of any action, meeting, or public hearing being noticed;

C. a brief description of the proposed large electric power facility;

D. a map showing the location of the proposed facility;

E. procedures for participating in the routing or siting process and for interested persons to be placed on a mailing list for future notices;

F. locations where documents are available for public review; and

G. the name and function of the public advisor and the address and telephone number where that person can be reached.

Subp. 3. **Proposals required to be noticed.** For purposes of providing notice, a route, route segment, or site proposal shall be any route, route segment, or site proposed by the applicant or accepted by the board under part 4400.1100 or 4400.3100.

## 4400.4000 DELAY IN ROUTE OR SITE CONSTRUCTION.

If construction and improvement of a route or site have not commenced four years after the construction permit or site certificate has been issued by the board, the board shall suspend the certificate or permit. If at that time, or at a time subsequent, the utility decides to construct the proposed large electric power facility, it shall certify to the board that there have been no significant changes in any material aspects of the conditions or circumstances existing when the permit or certificate was issued. If the board determines that there are no significant changes, it shall reinstate the permit or certificate. If the board determines that there is a significant change, it may order a new hearing and consider the matter further, or it may require a new application.

## 4400.4100 MINOR ALTERATIONS IN CONSTRUCTION PERMIT OR CERTIFICATE OF SITE COMPATIBILITY.

Following issuance of a construction permit for an HVTL or a certificate of site compatibility for an LEPGP, a utility may apply to the board for minor alterations on conditions specified in the permit or certificate. The utility shall submit an application for a minor alteration which contains sufficient information for the board to determine within 45 days the following: whether the requested changes are significant enough to warrant board study and approval; whether to order public hearings near the affected area; or whether additional fees shall be assessed.

If the board decides to study the application, the board shall determine within 70 days whether granting the application would be consistent with part 4400.1310 or 4400.3310 and shall grant or deny the utility's application accordingly.

## 4400.4200 REVOCATION OR SUSPENSION OF CERTIFICATE OR PERMIT.

Subpart 1. **Initiation of action to revoke or suspend.** The board may initiate action to consider revocation or suspension of a construction permit or certificate of site compatibility on its own motion or upon the request of any person who has made a prima facie showing by affidavit and documentation that a violation of the act has occurred under Minnesota Statutes, section 116C.645 or this chapter.

Subp. 2. **Hearing.** If the board initiates action to consider revocation or suspension of a construction permit or certificate of site compatibility, it will consider in a hearing under Minnesota Statutes, section 116C.645 the following matters:

A. whether a violation of any of the conditions in Minnesota Statutes, section 116C.645 has occurred;

B. whether the violation will result in any significant additional adverse environmental effects;

C. whether the results of the violation can be corrected or ameliorated; and

D. whether a suspension or revocation of a permit or certificate will impair the utility's electrical power system reliability.

Subp. 3. **Finding of violation.** If the board finds that a violation of Minnesota Statutes, section 116C.645 or this chapter has occurred, it may revoke or suspend the permit or certificate, require the utility to undertake corrective or ameliorative measures as a condition to avoid revocation or suspension, or require corrective measures and suspend the permit or certificate.

Minnesota Rules 4410 (1991), in part
Environmental Quality Board
Environmental Review

**4410.2100 EIS SCOPING PROCESS.**

Subpart 1. **Purpose.** The scoping process shall be used before the preparation of an EIS to reduce the scope and bulk of an EIS, identify only those issues relevant to the proposed project, define the form, level of detail, content, alternatives, time table for preparation, and preparers or the EIS, and to determine the permits for which information will be developed concurrently with the EIS.

Subp. 2. **EAW as scoping document.** All projects requiring an EIS must have an EAW filed with the RGU. The EAW shall be the basis for the scoping process.

For projects which fall within a mandatory EIS category or if a voluntary EIS is planned, the EAW will be used solely as a scoping document. For such projects, the RGU shall prepare and circulate with the EAW a draft scoping decision document that addresses the contents specified by subpart 6 to the extent that information is already available. The purpose of the draft scoping decision document is to facilitate the delineation of issues and analyses to be contained in the EIS. The information in a draft scoping decision document shall be considered as preliminary and subject to revision based on the entire record of the scoping process.

If the need for an EIS has not been determined the EAW will have two functions:

A. to identify the need for preparing an EIS pursuant to part 4410.1700; and

B. to initiate discussion concerning the scope of the EIS if an EIS is ordered pursuant to part 4410.1700.

Subp. 3. **Scoping period.** If the EIS is being prepared pursuant to part 4410.2000, subpart 2 or 3, item B, the following schedule applies:

A. The 30-day scoping period will begin when the notice of the availability of the EAW is published in accord with part 4410.1500, items A and B. This notice and press release shall include the time, place, and date of the scoping meeting.

B. The RGU shall provide the opportunity for at least one scoping meeting during the scoping period. This meeting shall be held not less than 15 days after publication of the notice of availability of the EAW. All meetings shall be open to the public.

C. A final scoping decision shall be issued within 15 days after the close of the 30-day scoping period.

Subp. 4. **Scoping period for some discretionary EIS's.** If the EIS is being prepared pursuant to part 4410.2000, subpart 3, item A, the following schedule applies:

A. At least ten days but not more than 20 days after notice of a positive declaration is published in the EQB Monitor, a public meeting shall be held to review the scope of the EIS. Notice of the time, date, and place of the scoping meeting shall be published in the EQB Monitor, and a press release shall be provided to a newspaper of general circulation in the area where the project is proposed. All meetings shall be open to the public.

B. Within 30 days after the positive declaration is

published in the EQB Monitor, the RGU shall issue its final decision regarding the scope of the EIS. If the decision of the RGU must be made by a board, council, or other similar body which meets only on a periodic basis, the decision may be made at the next regularly scheduled meeting of the body following the scoping meeting but not more than 45 days after the positive declaration is published in the EQB Monitor.

Subp. 5. **Procedure for scoping.** Written comments suggesting issues for scoping or commenting on the EAW must be filed with the RGU during the scoping period. Interested persons may attend the scoping meeting to exercise their right to comment.

Governmental units and other persons shall be responsible for participating in the scoping process within the time limits and in the manner prescribed in parts 4410.0200 to 4410.6500.

Subp. 6. **Scoping decision; contents.** The scoping decision at the least shall contain:

A. the issues to be addressed in the EIS;

B. time limits for preparation, if they are shorter than those allowed by parts 4410.0200 to 4410.6500;

C. identification of the permits for which information will be gathered concurrently with EIS preparation;

D. identification of the permits for which a record of decision will be required;

E. alternatives that will be addressed in the EIS;

F. identification of potential impact areas resulting from the project itself and from related actions which shall be addressed in the EIS; and

G. identification of necessary studies requiring compilation of existing information or the development of new data that can be generated within a reasonable amount of time and at a reasonable cost.

Subp. 7. **Change in form of EIS.** The form of an EIS may be changed during scoping if circumstances indicate the need or appropriateness of an alternative form.

Subp. 8. **Amendments to scoping decision.** After the scoping decision is made, the RGU shall not amend the decision without the agreement of the proposer unless substantial changes are made in the proposed project that affect the potential significant environmental effects of the project or substantial new information arises relating to the proposed project that significantly affects the potential environmental effects of the proposed project or the availability of prudent and feasible alternatives to the project. If the scoping decision is amended after publication of the EIS preparation notice, notice and a summary of the amendment shall be published in the EQB Monitor within 30 days of the amendment.

Subp. 9. **EIS preparation notice.** An EIS preparation notice shall be published within 45 days after the scoping decision is issued. The notice shall be published in the EQB

Monitor, and a press release shall be provided to at least one newspaper of general circulation in each county where the project will occur. The notice shall contain a summary of the scoping decision.

Subp. 10. **Consultant selection.** The RGU shall be responsible for expediting the selection of consultants for the preparation of the EIS.

Subp. 11. **Modification of project; termination of EIS process.** After initiation of scoping for an EIS, if the proposed project is modified so that an EIS is no longer mandatory, or the reasons for ordering an EIS no longer apply, the RGU may terminate the EIS process through the procedures of this subpart.

The RGU shall send written notice of its intent to terminate the EIS to all persons who submitted comments on the EIS scope and to all persons on the EAW distribution list under part 4410.1500. The notice shall summarize the reasons for the intended termination of the EIS, identify a contact person to whom comments may be sent, and announce the end of the comment period. The EQB staff shall publish notice in the EQB Monitor, and a press release shall be supplied by the RGU to at least one newspaper of general circulation in the area of the project.

A period of not less than 30 days from the date of publication of the notice in the EQB Monitor shall be provided for interested persons to comment on the need for an EIS on the modified project. The RGU shall determine the need for an EIS on the modified project in accordance with part 4410.1700.

**SA:** MS s 116D.04; 116D.045

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MINNESOTA ENVIRONMENTAL QUALITY BOARD
Site Advisory Task Force
Independent Spent Nuclear Fuel Storage Facility

September 14, 1995

Revised
November 11, 1995

# OPERATING PROCEDURES

## 1.0 Definitions

For the purpose of these operating procedures for the Site Advisory Task Force advising the Minnesota Environmental Quality Board regarding the Independent Spent Nuclear Fuel Storage Facility, the following terms have the meanings given them:

1.1 **Board.** "Board" means the Minnesota Environmental Quality Board.

1.2 **Chairperson.** "Chairperson" means the person designated by Chair of the Board to chair Task Force meetings and perform duties as designated or directed by the Board or by rules adopted by the Task Force.

1.3 **Interested Persons.** "Interested Persons" means those persons who have expressed interest in receiving notice of all Task Force meetings or those persons who have expressed interest in a specific project, sub-committee, or action of the Task Force.

1.4 **MEQB Support Staff.** The "MEQB Support Staff" consists of those persons assigned by the Board to provide administrative and logistical services to the Task Force. Representatives from the MEQB Support Staff will attend all regular and special Task Force meetings and will be available to provide additional support to established sub-committees.

1.5 **Person.** "Person" means a natural person, state, municipality, or other governmental unit or political subdivision or other agency or instrumentality, a public or private corporation, partnership, firm, association, or other organization, receiver, trustee, assignee, agent, or other legal representative of the foregoing, and any other entity.

1.6 **Presiding Officer.** "Presiding Officer" means the person who chairs the Task Force meeting in the absence of both the chairperson and vice chairperson.

1.7 **Quorum.** "Quorum" means a majority of the members of the Task Force as established under the Appointment of Siting Advisory Task Force and Charge, dated September 29, 1995, and signed by the Chair of the Minnesota Environmental Quality Board, and duly appointed representatives from Townships in which alternate sites have been proposed, excluding vacancies.

1.8 **Regular Meeting.** "Regular Meeting" means the Task Force meeting regularly scheduled every other Saturday from 8:00am to 12:00pm at locations to be announced unless otherwise changed 14 days in advance.

1.9 **Special Meeting.** "Special Meeting" means meetings of the Task Force other than the regular meetings.

1.10 **Sub-Committee.** "Sub-Committee" means a group of Task Force members, less than a quorum, authorized by the Task Force to accomplish a specific objective.

1.11 **Task Force.** "Task Force" means the Siting Advisory Task Force established on September 29, 1995 by order of the Board Chair in the matter of the Application for Certificate of Site Compatibility for the Goodhue County Independent Spent Nuclear Fuel Storage Facility. The Task Force also includes duly appointed representatives from Townships in which alternate sites have been proposed.

1.12 **Vice Chairperson.** "Vice Chairperson" means the person on the Task Force selected by the Board Chair to serve as Chairperson in the absence of the Chairperson.

## 2.0 Duty of Candor

In all formal and informal negotiations, communications, proceedings, and other dealings between any person and any member, employee, or agent of the Task Force, it is the duty of each person and each member, employee, or agent of the board to act in good faith and with complete truthfulness, accuracy, disclosure, and candor.

## 3.0 Board Officers and Duties

3.1 **Chairperson.** The Chairperson shall preside at Task Force meetings and perform other duties as assigned under rule or as directed by the Task Force.

3.2 **Vice Chairperson.** In the absence or disability of the Chairperson, the Vice Chairperson shall preside at Task Force meetings and perform the other duties of the Chairperson.

3.3 **Presiding Officer.** At a Task Force meeting, if both the Chairperson and Vice Chairperson are absent or are abstaining from discussing or voting on a matter, the Task Force shall elect a Presiding Officer who shall serve only for that meeting or until either the Chairperson or Vice Chairperson is available to chair the meeting.

4.0 Task Force Meeting Procedures

4.1 **Decisions at Open Meetings.** All regular and special Task Force meetings, and Task Force authorized sub-committee meetings must be open to the public. All Task Force decisions must be made at open meetings.

4.2 **Notification of Meetings.** Timely notification of all regular and special Task Force Meetings must be made in the Red Wing Republican Eagle and Lake City Graphic. Responsibility for providing such notification to the newspapers and to interested persons rests with the MEQB Support Staff.

4.3 **Notice of Regular Meetings.** The Chairperson will designate the time and place of each regular meeting. Initially, these meetings will be held every other Saturday from 8:00am to 12:00pm at locations to be announced within Goodhue County. At least five calendar days prior to as regular meeting, the MEQB Support Staff will provide written notice of the time, place, and matters to be considered to all Task Force members, employees, agents, interested persons, and each party to a matter being considered at the meeting. The Chairperson may direct that any regular meeting be rescheduled. Written notice of a rescheduled regular meeting shall be given in the manner described in Paragraph 4.4.

4.4 **Notice of Special Meetings.** The Chairperson, Vice Chairperson, or a majority of the Task Force members may call a special meeting when deemed necessary or desirable. At least three calendar days prior to a special meeting, written notice of the time, place and matters to be considered must be made and served on Task Force members, employees, agents, interested persons, and each party to a matter being considered at the meeting.

4.5 **Agenda Preparation.** The Chairperson shall prepare a proposed agenda of business to be conducted for all meetings of the Task Force. The agenda must include the time and place of the meeting and a list of all matters to be considered. Items may be placed on the agenda by notifying the Chairperson of the matter at least seven calendar days prior to a regular meeting. The Chairperson shall determine whether or not a matter should be placed on the agenda and shall advise the Task Force of all matters not placed on the agenda. A copy of an agenda constitutes written notice of Task Force meetings when served as required in Paragraphs 4.3 and 4.4.

4.6 **Quorum.** A quorum must be present for transaction of Task Force business.

4.7 **Parliamentary Procedure.** Except as specifically provided by this document, the most current revision of Roberts Rules of Order Revised governs any question of parliamentary procedures that may arise at a Task Force meeting.

4.8 **Adoption of Agenda.** The first order of business at the meeting must be adoption of the agenda, which may be amended or modified by the Task Force prior to taking up other business.

4.9 **Public Forum.** The Chairperson will include a portion of time on each regular meeting agenda for persons to present statements on matters which are within the Task Force's jurisdiction, but are not on the agenda. The Chairperson shall determine the limits of time based on the number of people who desire to present statements. For planning purposes, people should try to limit their statements to three to five minutes duration.

4.10 **Voting.** An affirmative vote of a majority of all members of the Task Force is necessary to take action. All members present, including the Chairperson, who have attended at 60% or more of all regular and special meetings shall vote or abstain on every matter presented for Task Force action. When computing a majority of all members of the Task Force, absences and abstentions must be included. Vacancies and members who have attended less than 60% of all regular and special meetings must be excluded. The record of attendance begins with the first meeting attended by a member.

4.11 **Record of Meetings.** The Task Force shall keep full and accurate minutes of all meetings. These minutes shall be included in the Task Force's final report to the Board.

4.12 **Reports.** The Task Force shall prepare a report, including its preferred site recommendations, if appropriate, to be submitted to the Board and to the Administrative Law Judge during the public hearing. Minority recommendations on any issue may also be submitted.

4.13 **Report Preparation.** Interim reports will be prepared and disseminated on a periodic basis for the purpose of Task Force and public review. Comments received after each interim report will be considered for the next interim report. The Chairperson will accept input for the report until close of business on November 18, 1995.

4.13.1 The Chairperson will organize a three person Blue Team from the Task Force members to review the final draft report to ensure the report accurately, completely and properly reflects the information the Task Force wants the EQB to receive. The

Chairperson will designate a Blue Team Leader who, in turn, will designate two team members.

4.13.2 The Chairperson will also organize a Red Team of concerned citizens who are not Task Force members to review the final draft from the perspective of the EQB to evaluate how the EQB might respond to the Task Force report. If necessary, the Red team will also make suggestions on how to improve the report. The Chairperson will designate a Red Team Leader who, in turn, will name other citizens, not to exceed five, to the team.

4.13.3 The Blue and Red Teams will begin their reviews and analyses on December 2, 1995 and report their findings to the Task Force at the regular Saturday meeting on December 16, 1995. Comments accepted by the Task Force will be incorporated into the final draft report. The final report will be disseminated to the Task Force and public on December 30, 1995. The final report will be voted during the January 13, 1996 meeting. The Chairperson will hand deliver the report to the Chair of the EQB on January 15, 1996.

## 5. Task Force Sub-Committees

5.1 **Establishment.** The Chairperson may establish sub-committees to aid in performing Task Force duties. The Chairperson will designate a leader for each sub-committee. The Leader, in coordination with the Chairperson, shall specify the procedures to be followed for each sub-committee.

5.2 **Operating Procedure.** Sub-Committees will be afforded an opportunity to meet at each regular and special Task Force meeting. Sub-Committee meetings other than at regular and special meetings will be announced to the public beforehand at Task Force meetings and the public will be offered an opportunity to attend such meetings. The Leader of each sub-committee, or a designated representative, will provide an oral report to the Task Force at each Task Force meeting.