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6-2500-5462-2  
E-002/CN-91-19

STATE OF MINNESOTA  
OFFICE OF ADMINISTRATIVE HEARINGS

In The Matter of the Application  
of Northern States Power Company  
for a Certificate of Need for  
the Construction of an Independent  
Spent Fuel Storage Facility

FINDINGS OF FACT,  
CONCLUSIONS AND  
RECOMMENDATION

J

The above-entitled matter came on for hearings before Allan W. Klein, Administrative Law Judge from the Office of Administrative Hearings, on November 18, 1991. Evidentiary hearings were held through December 19, 1991. Public hearings were held on December 12, 13 and 16, 1991.

Appearances at the evidentiary hearing were as follows:

Michael J. Ahern and  
Michael J. Bradley  
Attorneys at Law  
Moss & Barnett  
4800 Norwest Center  
90 South Seventh Street  
Minneapolis, Minnesota 55402-4129  
and  
Michael Connelly, Attorney  
Northern States Power Company  
414 Nicollet Mall  
Minneapolis, Minnesota 55401

Northern States Power Company ("NSP")

Richard A. Duncan  
Sandi B. Zellmer  
Faegre & Benson  
Attorneys at Law  
2000 Norwest Center  
90 South Seventh Street  
Minneapolis, Minnesota 55402  
and  
Kurt V. BlueDog and William J. Hardacker  
BlueDog Law Office  
Attorneys at Law  
Suite 555, 5001 West 80th Street  
Bloomington, Minnesota 55437

Prairie Island Mdewakanton  
Sioux Indian Community ("Community")

~ DO NOT DISCARD ~

Ella Savela, Attorney  
Minnesota Public Interest Research Group,  
2512 Delaware Street Southeast  
Minneapolis, Minnesota 55414  
and  
George Crocker  
North American Water Office  
P.O. Box 174  
Lake Elmo, Minnesota 55042

Prairie Island Coalition Against  
Nuclear Storage ("Coalition")

Eric F. Swanson  
and  
Amy V. Kvalseth  
Special Assistant Attorneys General  
1100 Bremer Tower  
Seventh Place and Minnesota Street  
St. Paul, Minnesota 55101

Minnesota Department of  
Public Service ("Department")

Alan R. Mitchell,  
Special Assistant Attorney General  
525 Park Street  
St. Paul, Minnesota 55103

Minnesota Environmental Quality Board  
("MEQB")

Paul G. Zerby  
Special Assistant Attorney General  
Suite 500, 525 Park Street  
St. Paul, Minnesota 55103.

Minnesota Department of Health  
("MDH")

Public hearings for receiving the comments and questions of members of the public were held as follows:

December 12, 1991 ----- Red Wing, Minnesota

December 13, 1991 ----- Prairie Island Indian Reservation  
Welch, Minnesota

December 16, 1991 ----- St. Paul, Minnesota

At the public hearings, the public participated as follows: Forty-five (45) members of the public spoke at the public hearing held in Red Wing;; forty-five (45) members of the public spoke at the public hearing held on the Prairie Island Indian Reservation; and seventy-two (72) members of the public spoke at the public hearing held in St. Paul.

In addition to the oral testimony given at the public hearings, the Administrative Law Judge received several thousand written communications from members of the public, including letters, petitions, resolutions and other written materials. These written submissions have been included by the Administrative Law Judge in a public correspondence file which has been reviewed and summarized separately below. All written correspondences were available for review and comment by the parties to this case and are part of the record that will be transmitted to the Public Utilities Commission.

On December 20, 1991, the record closed for the receipt of factual evidence and public comments. On March 4, 1992, the record closed for the receipt of briefs from the parties. On March 20, the last comment on a post-hearing submission (a legislative committee resolution) was received, and the record closed for all purposes.

Notice is hereby given that, pursuant to Minn. Stat. § 14.61, and the Rules of Practice of the Public Utilities Commission and the Office of Administrative Hearings, exceptions to this Report, if any, by any party adversely affected must be filed within 20 days of the mailing date hereof with the Executive Secretary, Minnesota Public Utilities Commission, 160 East Kellogg Boulevard, St. Paul, Minnesota 55101. Exceptions must be specific and stated and numbered separately. Proposed Findings of Fact, Conclusions and Order should be included, and copies thereof shall be served upon all parties. If desired, a reply to exceptions may be filed and served within ten days after the service of the exceptions to which reply is made. Oral argument before a majority of the Commission will be permitted to all parties adversely affected by the Administrative Law Judge's Recommendation who request such argument. Such request must accompany the filed exceptions or reply, and an original and 13 copies of each document should be filed with the Commission.

The Minnesota Public Utilities Commission ("Commission") will make the final determination of the matter after the expiration of the period for filing exceptions as set forth above, or after oral argument, if such is requested and had in the matter.

Further notice is given that the Commission may, at its own discretion, accept or reject the Administrative Law Judge's Recommendation and that said Recommendation has no legal effect unless expressly adopted by the Commission as its final Order.

#### STATEMENT OF ISSUES

The Notice and Order for Hearing, issued by the Commission on July 18, 1991, set forth the following issue for determination:

Whether NSP's proposed dry cask spent nuclear storage facility meets the need criteria of Minn. Stat. § 216B.243 (1990) and Minn. Rules pts. 7855.0100-7855.0120?

In evaluating this issue, the Commission also asked the parties to consider the applicability of Minn. Stat. § 116D.04, subd. 6 (1990) and Minn. Stat. § 116C.72 (1990). The Commission also expressed an interest regarding the Indian Community's Nuclear Radiation Control Ordinance; energy savings reasonably achievable through conservation; the feasibility of reprocessing used fuel; generating power by means of renewable resources, and other alternatives to above-ground storage; the possibility of the proposed facility becoming permanent due to federal inability to establish a permanent nuclear waste depository; the appropriate standard for risk assessment and for quantifying risk-associated costs; the Company's emergency preparedness; and the eventual costs of transporting the spent fuel from the proposed facility to the permanent federal nuclear waste depository.

The Administrative Law Judge has interpreted the issues to relate solely to the dry cask storage facility, and not to the entire Prairie Island plant.

Based upon all of the proceedings herein, the Administrative Law Judge makes the following:

## FINDINGS OF FACT

### Procedure and Jurisdiction

1. On April 29, 1991, Northern States Power (NSP or Company) formally initiated this proceeding by filing with the Minnesota Public Utilities Commission (Commission) an application for a Certificate of Need (Certificate or CON) to build a nuclear waste storage facility at its Prairie Island nuclear power plant. NSP filed the application pursuant to Minn. Stat. § 216B.243 (1990) and Minn. Rules pt. 7855 (1989). Ex. 1 at 1. In its application, NSP requested authority to install an Independent Spent Fuel Storage Installation (ISFSI), a facility of up to 48 dry metal casks which would hold spent nuclear fuel. Id. The Commission, in a memorandum dated that same day, requested comments on whether the filing should be accepted as substantially complete under Minn. Stat. § 216B.243 and Minn. Rules pt. 7855.
2. The Minnesota Department of Public Service (Department or DPS), the Prairie Island Mdewakanton Sioux Indian Community (Community), the Minnesota Public Interest Research Group (MPIRG), the North American Water Office (NAWO), and Minnesotans for an Energy Efficient Economy (ME3) filed comments. All parties filing comments alleged deficiencies in the filing.
3. On May 29, 1991, the Commission issued its Order Requiring Supplementary Filings To Complete Application, requiring NSP to provide further information before the Commission would accept the application as complete. In response to the Order, the Company submitted supplementary filings on June 12, June 14, and June 28, 1991.
4. All parties who had commented on the original filing, plus Thomas Flood, filed comments on the supplementary filings. The Department recommended acceptance of the supplemented filing as sufficient for a complete filing. The other commentators continued to allege deficiencies of a magnitude that should prohibit acceptance.
5. On July 18, 1991, the Commission issued its Order Accepting Filing As Substantially Complete And Authorizing Executive Secretary To Vary Time Requirements (July 18 Order). The Commission accepted the Company's filing, as supplemented, as being in the proper form and substantially complete. The Commission noted its jurisdiction over this matter under Minn. Stat. § 216B.243 (1990).
6. Also on July 18, 1991, the Commission issued its Notice And Order For Hearing, referring this matter to the Office of Administrative Hearings (OAH) for contested case proceedings.
7. A formal prehearing conference took place before Administrative Law Judge (ALJ) Allan W. Klein on August 1, 1991. Judge Klein had previously conducted an informal planning meeting on April 19 in order to begin the prehearing planning process. On August 23, 1991, the ALJ issued his Prehearing Order establishing the hearing schedule and procedural guidelines

governing the conduct of the case. The August 23 ALJ Order also scheduled public hearings to be held during December in Red Wing, the Prairie Mdwakanton Sioux Indian Reservation, and St. Paul.

8. On September 20, 1991, the ALJ granted intervention to the following parties: Prairie Island Mdwakanton Sioux Indian Community, Department of Public Service, Minnesota Department of Health (MDH), Minnesota Environmental Quality Board (EQB), and Prairie Island Coalition Against Nuclear Storage (PICANS or Coalition). The Coalition is made up of 18 separate groups.

9. Evidentiary hearings commenced in St. Paul on November 18, 1991 and continued through December 19, 1991. There were 18 days of evidentiary hearings.

10. Public hearings were held in Red Wing on December 12, 1991, at the Prairie Island Mdwakanton Sioux Indian Community Reservation on December 13, 1991 and in St. Paul on December 16, 1991.

#### Parallel Proceedings

11. In addition to this CON proceeding, certain other proceedings have occurred or continue to occur before other bodies. These parallel proceedings may affect the Commission's final Order and the Company's ability to pursue the proposed ISFSI. These proceedings include EQB's preparation and approval of an Environmental Impact Statement, Nuclear Regulatory Commission proceedings, and court proceedings concerning the Community's Nuclear Radiation Control Ordinance.

#### Environmental Impact Statement

12. Prior to the Commission's acceptance of NSP's application for a Certificate, the EQB prepared an Environmental Impact Statement (EIS) on NSP's proposal to construct an ISFSI at Prairie Island. The purpose of an EIS is to provide information to interested persons or agencies, to evaluate proposed projects which have the potential for significant environmental effects, to consider alternatives to the project, and to explore methods for reducing environmental impacts. Minn. Rules pt. 4410.2000, subp. 1. Preparation of the EIS, according to the EQB, was not mandatory under Minn. Rules pt. 4410.4400 (1989), but rather was discretionary under Minn. Rules pt. 4410.2000, subp. 3B (1989).

13. NSP and EQB agreed that an EIS should be prepared and EQB was determined to be the Responsible Governmental Unit (RGU) for the preparation of the EIS pursuant to related responsibilities in Minn. Rules pts. 4410.4400, subp. 2 and 4410.0500, subp. 2. In general, the RGU is the governmental unit with greatest responsibility for supervising or approving the project, or with expertise relevant to environmental review. Minn. Rules pt. 4410.0500, subp. 5, B.2.

14. The EIS process began formally on December 21, 1989, when the EQB ordered preparation of an EIS on the proposed ISFSI. On May 17, 1990, the EQB approved the final EIS scoping decision document which identified the issues to be addressed. The EQB staff then prepared a Draft EIS in compliance with Minn. Rules pts. 4410.0200 to 4410.6500. The EQB released the Draft EIS in November, 1990 and received public comments until January, 1991. EQB staff

revised the Draft EIS in response to substantive comments and released its Final EIS (FEIS) in April, 1991. The EQB received comments on the FEIS until May 6, 1991. On May 16, 1991, the EQB found the FEIS (including an addendum) adequate, meaning that it complied with statutory and agency rule guidelines governing environmental impact statements.

15. The FEIS concluded that construction of the ISFSI would not cause significant impacts to the natural and human environment. FEIS at 1.2. It further stated that operation of the ISFSI would deliver a dose of gamma radiation to off-site residents resulting in a cancer risk above the acceptable risk criterion of MDH. Id. However, the FEIS then noted that moving the site at least 200 yards to the south would enable the operation of the ISFSI to achieve the MDH criterion of acceptable risk. Id. NSP subsequently moved the site location from Site I to Site IV, bringing the off-site dose due to operation of the ISFSI within the MDH's acceptable criterion for cancer incidence. Ex. 1 at 33; see also FEIS at Chapter 6A and Figure 3-4.

16. The FEIS is an advisory document to be used by other agencies, including the Commission, in rendering siting and permitting decisions. Minn. Rules pt. 4410.0300, subp. 3.

#### NRC Proceedings

17. On August 31, 1990, NSP in accordance with 10 C.F.R. part 72, filed with the NRC an application to construct and operate an Independent Spent Fuel Storage Installation at the Prairie Island plant site. In conjunction with its August application, NSP submitted its Technical Specifications and Safety Analysis Report (SAR), the document the NRC uses in assessing safety and compliance with technical specifications. NSP also submitted an Environmental Report (ER) as required by 10 C.F.R. part 72.

18. On October 19, 1990, the NRC published notice of its consideration of NSP's August 31 application. 55 Fed. Reg. 42527 (1990). On November 16, 1990, the Department and the EQB filed a Notice of Intervention and a Motion to Intervene. The NRC granted the Motion to Intervene on December 5, 1990. On March 8, 1991, the Department and EQB withdrew their intervention. The Agencies instead entered into an agreement with the NRC and NSP regarding cask decontamination procedures and monitoring, and entered into a cooperation agreement with NRC, NSP and the Community concerning information flow and rights to comment.

19. On October 4, 1991, NSP also submitted an application with NRC to amend its operating license, 10 C.F.R. part 50, section 50.90, to permit upgrade of its auxiliary building crane to handle the TN-40 casks.

20. At this time, the NRC is continuing its investigation into and consideration of NSP's part 72 licensing application, Docket No. 72-10 50-282/306. The NRC is also in the process of reviewing NSP's Environmental Report. Upon completion of its ER review, the NRC will prepare an Environmental Assessment and make its determination as to whether the ISFSI has a significant impact on the environment. Finally, the NRC is also processing NSP's application for the crane upgrade under its 10 C.F.R. part 50 operating license. If the NRC rejects any of NSP's applications, the Company can not proceed with construction of the ISFSI, regardless of Commission action in this proceeding.

## Community Ordinance

21. On or about April 22, 1991, the Community enacted the Prairie Island Indian Community Nuclear Radiation Control Ordinance by Resolution No. 91-37. On July 16, 1991, the Community enacted a Revised Ordinance, dated July 12, 1991, by Resolution No. 91-53 (all references to the Ordinance below will be to the Revised Ordinance unless otherwise noted). The Ordinance requires a party seeking to transport radioactive substances across the Reservation to obtain a license from the Tribal Council in accordance with certain criteria.

22. By Resolution 91-54, passed on July 16, 1991, the Tribal Council requested the Area Director of the Bureau of Indian Affairs (BIA) to review and approve the Ordinance, pursuant to the Community's Constitution. The Acting Area Director of the BIA approved the Ordinance in August, 1991.

23. NSP appealed the BIA Area Director's approval of the Ordinance on September 27, 1991. On December 3, 1991, the Honorable Anita Vogt, Administrative Judge of the BIA, issued an Order Concerning Status of Prairie Island Mdwakanton Sioux Nuclear Radiation Control Ordinance and Order Placing Area Director's Decision Into Immediate Affect. The Order placed the Community's Ordinance into immediate effect and gave NSP the right to immediate judicial review.

24. On December 13, 1991, NSP brought suit in the United States District Court, District of Minnesota, Third Division against the Community. The complaint requested a decree from the Court vacating Judge Vogt's December 3 Order, issuance of a TRO against the Community enjoining them from enforcing the Ordinance, and a declaration and adjudgment finding the Ordinance void and unenforceable on the grounds of preemption under the Hazardous Materials Transportation Act and the Atomic Energy Act and on the grounds of unconstitutionality.

25. On December 17, 1991, The Honorable Edward J. Devitt issued a temporary restraining order against the Community effective until a TRO hearing could be held on December 23, 1991. On December 23, 1991, Judge Devitt issued a preliminary injunction prohibiting the Community from enforcing the Ordinance pending appeal. An appeal has been taken to the Eighth Circuit Court of Appeals. To date, no decision has been entered in that appeal.

## The Company and the Plant

26. The applicant, NSP, owns and operates the Prairie Island nuclear generating plant (Prairie Island or PI). Prairie Island lies within the city limits of Red Wing, Minnesota and abuts the Prairie Island Mdwakanton Sioux Indian Community Reservation. Final Environmental Impact Statement (FEIS) at 1.1.

27. PI consists of two independently controlled nuclear reactors, each with a nominal generating capacity of 530 megawatts (MW). Ex. 121 at 3. They are operated as baseload units. In 1990, PI generated over 7600 gigawatt hours (GWh) of electricity. Ex. 95 at 16. PI provides approximately 20 percent of NSP's current system needs. Ex. 121 at 3.

28. PI's incremental cost (fuel, operating and fixed maintenance costs) of 1.5 cents per KWh is matched only by Monticello's incremental costs. Id., p. 17. Even if total bus-bar costs (capital and operating costs) are considered, PI is less expensive than other generating facilities. Ex. 2, p. 5.10. Because of their low energy production costs, NSP's nuclear generation plants (PI and Monticello) are dispatched before any fossil-fueled capacity and consequently are fully utilized at all times, except during maintenance or refueling outages.

29. In Nuclear News, a recent world-wide comparison of nuclear plants listed PI's two reactor units as the only United States units to rank in the top 10 for load factor. (Load factor is the ratio of the average load in kilowatts carried by an electric power plant during a specific period compared to its peak load during that period. A high load factor is an indication of an efficient, reliable power plant.) PI Unit 2 ranked second in the world with a three-year average load factor of 93.0%, while Unit 1 ranked seventh with a load factor of 89.2%. Ex. 1, p. 17.

30. NSP began construction of the Prairie Island plant in 1968 and began commercial operation of the units in 1973 and 1974. Ex. 121 at 3. PI's plant licenses expire in 2014. Ex. 117 at 8.

31. Prairie Island's two nuclear reactor units each hold 121 fuel assemblies. Ex. 1 at 12. On an approximate 16 month cycle, NSP refuels each unit by replacing 48 spent fuel assemblies with new assemblies. Id. NSP moves the spent fuel assemblies to the spent fuel pool at the plant for storage. Id.

32. Prairie Island began operation with a small holding pool designed to hold a minimal amount of spent fuel. Ex. 121 at 3. At the time, NSP anticipated that this waste would be shipped off-site for reprocessing. Id. However, when it later became clear that reprocessing would not be a viable option, NSP undertook action in both 1977 and 1981 to increase the capacity in its spent fuel pool. Id.

33. The 1977 expansion increased pool capacity from 198 to 687 fuel assemblies. Ex. 121 at 3. The 1981 project further increased pool capacity to 1386 fuel assemblies (or 1582 if a full core down-load is included). Id. The 1981 expansion required a state Certificate of Need, which NSP received from the Minnesota Energy Agency. Docket No. EA-80-001-MG.

34. The current existing pool storage capacity will allow full operation of the PI plant only until 1995. Ex. 1 at 13. Therefore, because of its desire to continue the current level of operations at PI past 1995, the Company filed this Certificate of Need application to secure additional storage capabilities.

35. NSP proposes to increase its spent fuel storage capacity with an Independent Spent Fuel Storage Installation (ISFSI). Ex. 121 at 4. The proposed ISFSI will consist of concrete pads located outside, away from the plant and associated buildings, but on the Prairie Island land boundaries. Id. The top of these concrete pads will be at an elevation above the 1000 year flood level. Ex. 1 at 33. NSP requests authority to store up to 48 dry metal casks on these pads, allowing enough storage capacity for the Company to operate PI at current output levels through at least 2020. Ex. 121 at 4.



36. NSP proposes to use TN-40 casks in this project, designed by Transnuclear, Inc. Ex. 1 at 5. Each cask would store 40 spent fuel assemblies from PI. Id. The casks stand 16 feet 10 inches tall and 8 feet 6 inches wide. Each cask will weigh approximately 122 tons when fully loaded. Id. at 4. These casks contain an internal basket for holding spent fuel assemblies and have walls consisting of 9 and one-half inches of steel. Id. These casks will hold fuel which has been discharged from the reactor for at least 10 years. Id. at 37. Transnuclear was instructed to design the casks with a "design basis" life of 25 years. Tr. 2, p. 35.

37. Once the Company loads and seals the cask, the cask interior is filled with helium. Ex. 1 at 40. The cask has a double seal. Id. The cask cavity will be pressurized above atmospheric pressure, so that if the first seal fails, air would not enter the cask interior. Id. The space between the two cask lid seals is then pressurized to a level greater than the cask cavity pressure. Id. Therefore, failure of either of the two seals would result in a decrease in the pressure between the two seals. Id. This drop in pressure is designed to be detected by a sensor and indicated on a monitoring system located outside the ISFSI. Id. at 41.

38. The entire ISFSI will be surrounded by an earthen berm, with an opening only for entrance and exit from the ISFSI area. Ex. 1 at 34. The berm will be at least 17 feet high, but may be required to be higher in order to completely shield the top of the casks. Id.; Tr. at 79. Two fences will also surround the ISFSI, inside the berm. Ex. 1 at 34. Inside the fenced area, a security intrusion detection system will encompass the ISFSI. Id. The outer fence will hold the cask monitoring panel. Id.

39. The entire facility constitutes a passive system with no active controls except for security and monitoring. Id. at 33. This passive character is a stark contrast to the spent fuel pool, which requires a myriad of pumps and other active devices to control water levels and otherwise operate the pool properly.

### Public Opinion

40. Public opinion, as reflected in this record, is overwhelmingly opposed to the proposed project. Both the speakers at the public hearings and persons who submitted written comments reflected many more opponents than supporters.

41. There were an unusually large number of public comments received. In addition to letters, there were petitions, county/city/township resolutions, and a variety of other communications. For example, of the original letters (as opposed to form letters) received during the month of December, there were 209 opposed, 34 in favor, and 5 undecided. If the signatures on petitions were added, the number opposed would exceed one thousand. If the comments and petitions entered into the record during the public hearings were added to those, the number of people who expressed an opinion, one way or the other, would exceed 5,000, with the vast majority opposed to the project.

42. Aside from the numbers, the thoughtfulness and seriousness of the commentators was equal on both sides. Neither side was dominated by "hot heads" or irrational assertions. Instead, the large majority of comments on both sides reflected a degree of rationality and seriousness that warrants giving weight to their statements.

43. The supporters focussed on the need for the electricity generated at Prairie Island, the safety of the casks and the plant, the fact that the casks are only temporary, and the importance of Prairie Island to the economic wellbeing of the region (the County, the City, the School District, etc.).

44. The opponents focussed on the seriousness of an accident (particularly mentioning the location near the river), the availability of alternatives to provide electricity, and the fact that approval would "take the heat off" DOE to find a permanent site, resulting in the casks remaining at Prairie Island permanently.

## DISCUSSION

The thoughtfulness of the written submissions is of interest. Most go far beyond the "I'm agin' it!!" style that characterizes many rate case submissions. A high percentage of the letters from both proponents and opponents reflect a grasp of the pros and cons, a balancing of them, and an explanation of why the writer ends up on one side or the other.

### Applicable Statutes, Rules, Ordinances and Policies

#### A. Certificate of Need Statutes and Rules

45. The Certificate of Need statute, Minn. Stat. §§ 216B.2421 to 216B.243, authorizes the Commission to grant or deny certificates of need for large energy facilities. Minn. Stat. § 216B.243, subd. 2 provides that no large energy facility shall be sited or constructed in Minnesota without the issuance of a Certificate of Need by the Commission.

46. The Statute defines "large energy facility" to include a nuclear waste storage facility. Minn. Stat § 216B.2421. Thus, Minn. Stat. § 216B.243 governs NSP's application for an ISFSI in this proceeding.

47. Minn. Rules pt. 7855.0120 provides the four criteria to be used by the Commission in determining whether to grant a Certificate of Need application. This rule codifies many of the criteria listed by statute and directs the Commission to consider:

- (1) the effect of the proposed facility on future energy supply;
- (2) alternatives to the proposed facility;
- (3) the overall consequences to society of granting or denying the application; and
- (4) whether the proposed facility complies with relevant policies, rules and regulations of other governmental entities.

The project's compliance with these standards is set forth beginning at Finding 146.

#### B. 1991 Legislative Amendments to Minn. Stat. § 216B.243.

48. In 1991, the Minnesota legislature amended the Certificate of Need statute. 1991 Laws of Minnesota, chapter 235. The Governor signed this legislation on May 28, 1991, after the Company filed the present application. The legislation included a new section to the statute, Minn. Stat. § 216B.243, subd. 3A, concerned specifically with renewable forms of energy. However,

under Minn. Laws 1991, Chapter 235, Article 4, Section 2, the new Subdivision 3A is only applicable to applications filed after July 31, 1991. NSP's application was filed on April 29, 1991, and the supplemental information required by the Commission was filed by NSP in June, 1991. The Commission, by Order dated July 18, 1991, found NSP's application to be substantially complete and in proper form before the effective date of the amendment. It is concluded, therefore, that the new subdivision 3A is not applicable to this proceeding.

### C. Radioactive Waste Management Act

49. Minn. Stat. § 116C.72 requires legislative approval to construct or operate a "radioactive waste management facility" within Minnesota.

50. A "radioactive waste management facility" is defined under Minn. Stat. § 116C.71, Subd. 7, as:

...a geographic site, including buildings, structures, and equipment in or upon which radioactive waste is retrievably or irretrievably disposed by burial in soil or permanently stored.

51. Minn. Stat. § 116C.72 requires legislative approval, therefore, to construct or operate a permanent or below ground high-level radioactive waste storage site in Minnesota.

52. There is a sharp disagreement among the parties over the application of this statute to the ISFSI proposed by NSP. The facts and analysis needed to resolve this disagreement will be set forth below, beginning at Finding 114.

### D. Environmental Rights and Environmental Policy Acts

53. The Minnesota Environmental Rights Act (MERA) 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.

Minn. Stat. § 116B.09, subd. 2.

54. In similar language, the Minnesota Environmental Policy Act (MEPA) 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.

Minn. Stat. § 116D.04, subd. 6.

55. Minn. Stat. § 116B.02, subd. 5 defines "pollution, impairment or destruction" as conduct:

which 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.

56. MERA creates a private right of action for the protection of the air, water, land or other natural resources located within the state of Minnesota from pollution, impairment or destruction. Minn. Stat. § 116B.03, Subd. 1.

57. MERA also allows a party to intervene in an administrative proceeding to challenge conduct that is likely to cause pollution, impairment or destruction. Minn. Stat. § 116B.09.

58. These environmental statutes apply to any state action, including the Certificate of Need proceeding presently before the Commission.

59. In applying the two environmental statutes, the Commission must first determine, as a threshold issue, whether NSP's proposal causes "pollution, impairment or destruction" of natural resources. Minn. Stat. § 116B.02, subd. 5.

60. Whether the proposed ISFSI would cause "pollution, impairment or destruction" of natural resources was the subject of much testimony and argument during the proceeding. The parties disagreed on the question. Factual findings and analysis to resolve the issue is found beginning at Finding 118 below.

E. Prairie Island Mdewakanton Sioux Indian Community  
Nuclear Radiation Control Ordinance

61. As noted above, a temporary injunction has been issued which prohibits the enforcement of this Ordinance. An appeal has been filed, but not yet decided. In the interim, the project may proceed without complying with the Ordinance. NSP has agreed to comply with the Ordinance if it is declared to be valid and applicable to NSP. Ex. 7, at p. 3; NSP Initial Brief, at p. 177. The Commission could easily deal with this by conditioning the Certificate of Need on compliance if the injunction is lifted and the Ordinance is valid and enforceable.

F. Health Department Health Risk "Criterion" or "Policy"

62. For over a decade the Minnesota Department of Health ("MDH") in concert with other state agencies has implemented a policy that carcinogenic risk from any single source of pollution should be insignificant. FEIS at 6.1.

63. Based on studies of acceptable or insignificant risk, the MDH adheres to a standard that no new single pollution source in Minnesota shall create a lifetime cancer risk to surrounding populations of greater than one cancer incident per 100,000 persons. FEIS at 6.1; Tr. 14, p. 170; Tr. 16, pp. 29-30.

64. The MDH's risk standard has not been adopted as a rule within the meaning of Minn. Stat. Ch. 14, the Administrative Procedure Act. Its enforceability and application to this proceeding was the subject of disagreement between the parties. This issue is discussed beginning at below at Finding 126.

DISCUSSION

There are a number of statutes and rules which arguably apply to this application for a Certificate of Need.

All parties agree that the Certificate of Need statute and rules do apply, although there is some disagreement about how specific rules are to be interpreted.

All parties agree that the two environmental laws apply, but the parties differ sharply as to whether the central prohibitions have been triggered or not.

The parties disagree about the applicability of the Radioactive Waste Management Act (no permanent storage without legislative authorization) and the Department of Health's Risk Criterion.

The facts needed to resolve each of the disputed provisions, and the facts needed to answer the Commission's issues as enumerated in the Statement of Issues above, are set forth below. They are generally grouped by statute or rule.

Is this a Permanent Storage Facility Requiring Legislative Authorization?

A. Permanence

65. The design life of the TN-40 casks proposed for use in this project is 25 years. Their maximum life has been estimated to be in the range of 40-100 years, but no detailed analysis has been done to establish a maximum life. Tr. 1, pp. 168-169; Tr. 2, pp. 34-35.

66. None of the witnesses who testified in this proceeding could give a definite date by which fuel would actually be removed from Prairie Island. Tr. 2, p. 115; Tr. 17, pp. 130-31; Tr. 13, p. 68.

67. The commonly used definition of "permanent" is "continuing or enduring without fundamental or marked change: stable," or "lasting." Webster's Ninth New Collegiate Dictionary 876 (1988).

68. Since the commercial nuclear power industry began, there have been significant problems in finding a place to store or dispose of the waste generated. Tr. 17, pp. 84-85, 94; Tr. 6, p. 15; Tr. 12, pp. 51-52; Ex. 66 (Resnikoff Direct) at pp. 3, 6. One of the principal problems has been public opposition. Public opposition to siting a permanent repository has not diminished over the years, and there is no credible basis for believing that it will.

69. When the nation's nuclear reactors were being built, it was anticipated that the spent fuel would be stored in on-site spent fuel storage pools for an initial cooling period of less than two years. Tr. 2, p. 127. See also Tr. 12, pp. 12, 51-52.

70. The federal government assured the nuclear industry that individual reactors would only have to store spent fuel on site for short periods of time because commercial reprocessing of the waste was going to be available in the near future. The intent was a fuel "cycle". Ex. 66 (Resnikoff Direct) at pp. 3-4. That did not turn out to be the case. Tr. 2, p. 127; see also Tr. 1, pp. 47-48.

71. It became apparent in the mid-1970s that reprocessing was not going to be available before the capacity at Prairie Island's fuel pool was exhausted. Ex. 1 at 12; Tr. 2, p. 108.

72. Reprocessing is no longer a viable solution to Prairie Island's waste storage problem. [Resnikoff Rebuttal (Report) at 1-2]; Tr. 17, p. 85. At the present time, there is no reprocessing facility for spent fuel operating in the United States. There are facilities in France and Great Britain. Ex. 1, p. 103.

73. After it became apparent that reprocessing was not going to solve the problem of nuclear waste storage, the federal government announced in 1977 that it would begin accepting spent fuel for permanent disposal in 1983. Tr. 2, p. 110.

74. No permanent disposal site was in fact established by 1983.

75. In 1982 Congress reexamined the nuclear waste situation and passed the Nuclear Waste Policy Act, 42 U.S.C. §§ 10101- 10270, which set strict timelines for developing a repository by the year 1998. Ex. 66 (Resnikoff Direct) at 6.

76. In January 1987, DOE projected a permanent repository in-service date of 2003. Ex. 117, p. 2.

77. In 1987 Congress amended the Act to focus the Department of Energy's efforts on one site, Yucca Mountain, Nevada, with 1998 (not 2003) still the targeted operating date. Ex. 66 (Resnikoff Direct) at 6. This step was taken for political, not technical reasons. Colglazier and Langum, Policy Conflicts in the Process for Siting Nuclear Waste Repositories, 1988 Ann. Rev. Energy 317, 347-48 (attached as Document 2 in Ex. 118).

78. In the five years between the passage of the Waste Policy Act of 1982 and the Waste Policy Act Amendments of 1987 there was no reduction in the time frame for establishing a permanent federal repository. Tr. 17, p. 86.

79. Between 1987 and 1989, a space of two years, there was a further seven-year delay in DOE estimates of the date on which a permanent repository would operate, from 2003 to 2010. Tr. 17, p. 88.

80. Currently, in spite of the Congressionally mandated 1998 date, the Department of Energy estimates that a permanent repository will not be available until at least 2010. Ex. 66 (Resnikoff Direct) at 6; Ex. 117, Attachment B.

81. Neither NSP or the Commission can rely on "firm" policy statements, action plans, or even congressional mandates as setting a date certain by which a federal permanent repository will actually be operating. Tr. 3, p. 28.

82. Every state in which the federal government has seriously attempted to site a permanent repository or a monitored retrievable storage ("MRS") site has responded sooner or later with litigation. Colglazier and Langum, passim.

83. The record reflects serious doubt as to when, if ever, a Yucca Mountain repository will be operational. It is at risk of failure for political, socioeconomic, and technical reasons. Ex. 66 (Resnikoff Direct) at 7; Tr. 3, p. 27.

84. The DOE is currently experiencing major difficulties in Nevada, that can act as a stumbling block to the siting of a facility at Yucca Mountain. Tr. 13, p. 51. The Governor of Nevada has pledged "to exercise every legal remedy" to oppose the siting effort at Yucca Mountain. Status of the U. S. Radioactive Waste Management Program: Current Issues and Challenge, a speech by John W. Bartlett, Director of OCRWM, March 26, 1991 (attached as Document 9 to Ex. 118).

85. There have already been three cases brought before the Ninth Circuit Court of Appeals, and more are anticipated. Under any outcome, the litigation is certain to cause delays and expense. Bartlett, op. cit.

86. Even if Nevada is unsuccessful in its attempts to block the current siting plans, the federal government may determine at any point in time that Yucca Mountain is an unsuitable site for a permanent repository. Tr. 17, pp. 66-67.

87. The DOE is currently trying to determine whether the rock formation at Yucca Mountain is stable enough and has the properties required to isolate the spent fuel from the environment for the necessary period of time (essentially forever). Tr. 2, p. 137.

88. If Nevada is unsuccessful in blocking the current federal siting plan, and Yucca Mountain does prove to be technologically acceptable, there will likely still be substantial delays beyond 2010 before the site is actually operational. Tr. 17, p. 102. Even Mr. Schwartz, the expert sponsored by NSP, conceded that 2010 was "optimistic". Tr. 2, p. 111.

89. In order for the DOE program to achieve the 2010 date for an operating federal permanent repository, DOE needs to have its budget requests fully funded. If Congress appropriates money at less than the levels requested by DOE, the 2010 target date for repository operation would be in jeopardy. For fiscal year 1992, Congress has authorized only \$170 million for DOE's budget to develop a permanent waste repository, as opposed to the \$400 million DOE had requested. Tr. 17, pp. 103-105; Ex. 119.

90. Mr. Larson estimated that operation of the Yucca Mountain site as a permanent repository may not occur before 2037, i.e. 27 years' slippage past the current scheduled opening date of 2010. Tr. 17, pp. 53-54, 58, 120. This estimate was based on an analysis of the slippage to date in the Department of Energy's schedules for opening a permanent repository (1.5 years of slippage for each year that goes by). Using the slippage figures from 1985 to 1989, schedule slippage was approximately 3.0 years for every year elapsed, and in the period from 1987 to 1989 DOE was losing 3.5 years on its schedule for every year that elapsed in real time. Tr. 17, pp. 53-54, 58, 120.

91. Even if Yucca Mountain is found to have the proper characteristics, and does become operational, there may be a need for a second repository because of the legal limit on the amount of fuel that the Yucca Mountain repository is allowed to hold. Tr. 13, p. 40.

92. Current law places a capacity limit of 70,000 metric tons of waste on Yucca Mountain. This limit includes both defense and commercial waste. Id.; Tr. 3, pp. 21, 161.

93. The Yucca Mountain storage facility would reach maximum capacity under current storage schedules before all of Prairie Island's waste is taken. Tr. 3, pp. 32-33.

94. If the Nevada site is rejected, the Department of Energy has no backup site for a permanent repository. Ex. 66 (Resnikoff Direct) at 6. Congress would have to readdress the issue and reinitiate the site characterization process for another site. Tr. 2, p. 188.

95. If Yucca Mountain is determined to be unsuitable, the information that DOE has learned about siting a repository would not necessarily reduce the time required for siting an alternate repository. Tr. 17, p. 69.



However, there have been significant changes in DOE management and reporting structures which hold out the hope that past delays could be reduced. See Tr. 2, pp. 138, 141, 171. Certain legal issues have been settled and would not have to be relitigated. Tr. 2, p. 112.

96. If a new site must be found, the political concerns which surrounded the initial decision on siting a federal waste storage facility at Yucca Mountain would most likely arise again over the new site. See Tr. 17, p. 82. As the DOE focuses on a specific site for a high-level radioactive waste facility and begins site investigation studies, local political and legal opposition to the effort grows stronger. Tr. 17, p. 119.

97. The Department's expert Mr. Larson analyzed three scenarios for possible in-service dates of a federal permanent repository: an "Adjusted DOE Schedule" [at Yucca Mountain]; an "Alternate Site Schedule;" and an "Indefinite Schedule." [Larson Direct at 6-8]. The ranges of in-service dates for each scenario were as follows:

Adjusted DOE Schedule:	2015-2055
Alternate Site Schedule:	2029-2084
Indefinite Schedule:	2074 or later

98. Mr. Larson's analysis did not attempt to give any sort of probability distribution of the likelihood of a permanent repository operating in any specific year within any of the ranges of years which he presents in the scenarios in his testimony. Tr. 17, p. 107. He did not have a "best estimate" of when or whether DOE would remove spent fuel from Prairie Island. Tr. 17, p. 130. Mr. Larson's analysis did not identify any upper-bound limit for the "Indefinite" scenario, and Mr. Larson agreed that a common definition of "indefinite" is that no one knows when it will end. Tr. 17, pp. 74-77, 110.

99. Mr. Larson's analysis did not attempt to estimate probabilities of occurrence of the various scenarios he outlined. Tr. 17, p. 65.

100. A "stop gap" interim proposal is for the establishment of a monitored retrievable storage system (MRS). However, under the Nuclear Waste Policy Act Amendments, no MRS can be operated until construction of a permanent repository is begun. 42 U.S.C. 10243(d)(4), 10245.

101. If Congress doesn't change existing law, the likelihood of having an operating MRS facility by any given date is directly linked to the likelihood of having a permanent repository under construction. Tr. 17, p. 111. There are proposals currently before Congress to remove the linkage between an MRS and a permanent repository. It is unknown whether this will occur. Tr. 2, p. 196.

102. The first step in the process for a MRS facility is for any interested governmental unit or tribe to request a \$100,000 grant to be used to determine the suitability of their site and to help them decide whether they desire an MRS. At the time this record closed, two grant requests had been received and approved. Those were for the Mescalero Indian Tribe in New Mexico, and Grant County in North Dakota. Schwartz, Tr. 2, p. 155. Subsequently, the DOE received five additional grant requests. Specifically, additional grant applications have been received from the Chickasaw Indian Nation of Oklahoma; Fremont County, Wyoming; the Prairie Island Indian

Community; the Sac and Fox Nation of Oklahoma; and the Yakima Indian Nation of Washington. To allow additional grant applications, the deadline for applying was been extended to March 31, 1992. It is unknown how many requests were finally filed by the new deadline, or whether any of the requests have been withdrawn. If one of the "volunteer" sites were to be found suitable, Congress would be likely to remove the linkage between an MRS and a permanent facility.

103. Mr. Schwartz admits that there is no assurance that an MRS will be sited by 1998. Tr. 2, pp. 157, 182-83. He agrees that one should not rely on DOE's projected 1998 date for accepting fuel at an MRS as the basis for planning. Tr. 3, p. 67.

104. Mr. Larson examined three scenarios regarding the in-service date for an MRS: "Adjusted DOE Schedule;" "Repository-Linked Scheduled;" and "Indefinite Schedule." The Repository-Linked Schedule reflects current law. The Adjusted DOE Schedule, to be met, would require new congressional action. Mr. Larson's estimated in-service date ranges for an MRS were as follows:

Adjusted DOE Schedule:	1998-2012
Repository-Linked Schedule:	2007-2036
Indefinite Schedule:	No date given

Ex. 117 at 11-12, as modified by Tr. 17, p. 39.

105. In Mr. Larson's indefinite MRS scenario, there is no upper bound year by which he can state with certainty that an MRS will be operating. Tr. 17, pp. 114-115.

106. As with his permanent repository scenarios, Mr. Larson did not attempt to estimate the probability of occurrence of any given scenario, or the probability of an MRS actually going into service on any given year within any of the date ranges given in his three scenarios. Tr. 17, pp. 65, 107.

107. If present federal law is not changed, the critical path identified by DOE to site and construct an MRS facility will come to a halt in September 1992 (after identifying candidate sites) unless and until a permanent repository site has been recommended to the President. Tr. 17, pp. 144-145.

108. Given fears that an MRS will end up being a de facto permanent repository due to failure of the Yucca Mountain program, it is likely that states will oppose siting of an MRS within their borders every bit as ferociously as they have fought siting of a permanent repository. Ex. 117, p. 12; Colglazier and Langum at 354 ("[I]t is as difficult politically to site a centralized [MRS] as it is to site a repository.").

109. If the MRS remains linked to the permanent repository and the repository is indefinitely delayed, then the MRS will be indefinitely delayed too. Ex. 117, p. 12.

110. The record does not support reliance on a timely MRS to solve Prairie Island's waste storage problem.

111. Ultimately, someday, the problem of permanent storage will be addressed because the reality of aging spent fuel pools will force it. But when that will happen, and how it will happen, is unknown. It is possible that dry cask storage could be used as the method of storing spent fuel well into the future. There has not been demonstrated to be a reasonable likelihood that there will be a federal permanent repository in the predictable future. Tr. 13, p. 21.

112. In all likelihood, DOE will not take spent fuel away from Prairie Island in the predictable future. Tr. 13, p. 68.

113. It is also possible that the federal government will abandon efforts to develop a permanent repository and pursue other methods for handling nuclear waste. Ex. 117, p. 8. The NRC has indicated its belief that nuclear generating plants could store spent fuel on-site for at least 100 years without significant environmental impact. Id. This assessment of on-site storage capabilities can be viewed as one alternative to a permanent repository, at least in the near term, and provides some definition to Mr. Larson's indefinite scenario. Id. Tr. 17, pp. 75-76.

#### DISCUSSION

NSP is caught in a quagmire that is not of its own making -- the inability of the Federal government to meet deadlines. The past two decades have been one missed deadline after another, and the future does not appear to be substantially different. NSP does not have much control over the course or outcome of the Federal effort, yet it is NSP (and its ratepayers and affected neighbors) who are being asked to adopt stop-gap solutions. During the public hearings, many persons berated NSP for the current situation. Their frustration and anger are misdirected. It is the Federal process that deserves the blame, not NSP.

There is a substantial risk that the Federal effort at Yucca Mountain will fail, and that Federal policymakers will abandon the search for a single permanent repository, and instead look for new ways to deal with the expanding quantities of waste accumulating around the country. If Prairie Island already has some dry casks in operation, the path of least resistance for the Federal (and State) decisionmakers will be to just let NSP continue to add more dry casks. There is no restrictive limit on the number of casks that can be accommodated at the site, at least within the range of 50 or 100 or 125 casks. It will be irresistible to allow an increase in the number of casks, once the first ones are in place, if the Federal repository is not able to accept the waste. And once the casks are there, it will always be easiest to just leave them there indefinitely. As the Governor of South Carolina stated in 1982, ". . . [t]here is a basic law of nuclear waste often overlooked -- all waste remains where it is first put." Ex. 118, Document 2 at p. 323. This is the conclusion arrived at by Dr. Resnikoff. When asked for his best estimate of when the fuel would be removed from Prairie Island, he replied "never". Mr. Schwartz initially had no "best estimate" when asked, but the next day he offered two ranges: 2021-2023 at Yucca Mountain, or 2028-2030 at an alternate site. Mr. Larson was unwilling to give a best estimate, instead favoring the ranges noted in the findings. The Administrative Law Judge believes Mr. Resnikoff's estimate is the most likely to be correct.

In summary, this record fails to support a finding that the casks will only be temporary. How long into the future they will remain is unknown and unknowable. But it is more likely than not that they would remain for the reasonably foreseeable future.

#### B. Legislative Authorization.

114. Minn. Stat. §§ 116C.71, subd. 7, and 116C.72 require legislative authorization before radioactive wastes can be retrievably or irretrievably disposed by burial in soil or permanently stored.

115. Minn. Stat. § 116C.71, subd. 16, defines "dispose" and "disposal" to mean permanent or temporary placement of a site "other than a point of generation".

116. The application of the "point of generation" exclusion to permanent storage facilities is ambiguous and unclear. It is appropriate to look to other factors (enumerated in Minn. Stat. § 645.16) in an attempt to ascertain the intent of the legislation.

117. Based upon the legislative history of the 1984 additions to the law as adopted in 1977, it is concluded that the intent of the legislature was not to alter the 1977 requirement that legislative authorization be required for permanent storage of high level nuclear wastes even if those wastes are to be stored within the property boundaries of the Prairie Island plant.

#### DISCUSSION

In 1977, the law requiring legislative approval for permanent storage facilities was enacted. At that time, there was concern that the Federal government might want to site a permanent repository in Minnesota. The law, as adopted in 1977, was simple: it prohibited the construction or operation of a "radioactive waste management facility" unless expressly authorized by the legislature.

A "radioactive waste management facility", was defined as a site where radioactive waste is: "retrievably or irretrievably disposed by burial in soil or permanently stored."

That law remained in effect, unchanged, until 1984. Then, under the threat of renewed Federal interest in certain areas of northern Minnesota for a possible second (after Yucca Mountain) repository site, the legislature added additional provisions to guarantee a state role in the exploration and investigation of any possible site. New provisions also further regulated the transportation of waste through the state.

In the course of presenting the 1984 bill to the Senate Subcommittee on Environmental Protection (a subcommittee of the Senate Agriculture and Natural Resources Committee), the Senate author, Senator Merriam, explained that the 1984 changes were in the form of additions to the 1977 law, but that there was no intent to alter the existing 1977 provisions. He said:

In Section 2, we get into the definitions. I might add that we are proposing that this new law be integrated with existing law having to do with high-level radioactive waste and the current law,

codified in 116C.71 to .74, essentially says two things. Number one, you can't construct a radioactive waste management facility within the state without express authorization by the legislature, and number two, you can't transport high-level radioactive waste into the state for the purposes of disposal or temporary storage in excess of 12 months. We don't propose to change those provisions in any meaningful way, but to allow the flexibility that will enable us to participate more fully in this Department of Energy process.

Hearing on S.F. No. 1258 before the Senate Subcommittee on Environmental Protection, 73rd Sess. (Minnesota Senate tape for January 24, 1984).

However, the 1984 additions did make a change which NSP, DPS and EQB believe did affect the scope of the 1977 law. The 1984 bill added a definition of "dispose" or "disposal". Those terms had not been defined in the 1977 law. A definition was added because the 1984 act prohibited "disposal studies" unless certain State involvement had occurred. The 1984 bill defined "dispose" or "disposal" to mean:

The permanent or temporary placement of high-level radioactive waste at a site within the state other than a point of generation.

In his explanation to the subcommittee, Senator Merriam explained this as follows:

We define "dispose" and "disposal" to be that permanent, [or] temporary placement of high-level radioactive waste at a site within the State other than a point of generation. Of course, we have two places in this state that are points of generation -- the two NSP nuclear power plants, Prairie Island and Moticello.

Id.

In the Certificate of Need proceeding, the parties have vigorously debated the question of whether or not the Radioactive Waste Management Act, in its current form, requires legislative approval for permanent storage of spent fuel at Prairie Island. On the one hand, the Community and the Coalition argue that the legislative intent in both 1977 and 1984 was to preserve the status quo at the time the bills were passed -- that spent fuel could be stored in the spent fuel pool because it was only temporary, and that it would be shipped out of state for permanent disposal pursuant to the federal promises. They argue that the creation of an independent storage facility, the ISFSI proposed in this proceeding, is something totally different from the

spent fuel pool. They point out that the name NSP has chosen for it begins with the word "independent", and that regardless of the language used, it is an independent structure located outside of the power plant and away from the buildings. On the other hand, NSP and the Department argue that it is ridiculous to say that the fuel stored at the ISFSI is not stored "at the point of generation", and that the 1984 additions created an exemption from the need to obtain legislative authorization for storage anywhere within the plant's boundaries.

The application of the words to the facts here is ambiguous and unclear. In the analysis set forth in Minn. Stat. § 645.16 and Tuma v. Commissioner of Economic Security, 386 N.W.2d 702, 706 (Minn. 1986), it is appropriate to consider other factors in an attempt to determine legislative intent. See also, Cass R. Sunstein, Interpreting Statutes in the Regulatory State, 103 Harvard Law Review, 405 (1989).

The parties have thoroughly researched the legislative history of the 1984 amendments, and the Administrative Law Judge has listened to the most detailed explanation of them, the Senate Subcommittee discussion set forth above.

It is evident from the discussion before the Senate Subcommittee in 1984 (which included a representative from NSP, a Max DeLong), that it was the common understanding of Senator Merriam, the other legislators who spoke, and NSP that NSP would be shipping its high-level waste out of Minnesota to a federal repository. Indeed, Mr. DeLong's comments addressed the transportation aspects of the bill in detail. Nowhere in that discussion was there any talk of dry cask storage or the possibility that the waste would not be shipped out of Minnesota. The only important piece of evidence regarding legislative intent that can be gleaned from that discussion is Senator Merriam's statement, quoted above, that he did not intend to alter the 1977 provisions by adding the 1984 material.

The reading proposed by NSP, DPS and MEQB -- that the 1984 addition created an exclusion from the 1977 prohibition -- would allow another unintended result. It would allow NSP to permanently store not only its own wastes, but also wastes from other states, at the two NSP plants. The Administrative Law Judge hastens to add that he is certain that NSP does not intend to do this. NSP has entered into covenants with the City of Red Wing and others whereby it expressly agrees not to do this. Federal law would not permit it without extensive proceedings, and if the Federal government began investigations, other provisions of state law would be triggered. The point is raised only because it could be argued that NSP's reading of the statute would theoretically allow Prairie Island and Monticello to be used for exactly what the legislature was trying to prevent in both 1977 and 1984.

In summary, it is concluded that the proposed project is not removed from the application of the 1977 law by virtue of the 1984 definition of "dispose", and thus, in light of the Findings on permanence, the legislature must authorize the construction of the proposed ISFSI.

#### Environmental Statutes

118. The Minnesota Environmental Rights Act (MERA) 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.

Minn. Stat. § 116B.09, subd. 2.

119. In similar language, the Minnesota Environmental Policy Act (MEPA) 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.

Minn. Stat. § 116D.04, subd. 6.

120. Minn. Stat. § 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.

121. These environmental statutes apply to any state action, including the Certificate of Need proceeding presently before the Commission. These laws require that the Commission first determine whether NSP's proposal would cause pollution, impairment or destruction of natural resources. Then, if the

Commission finds NSP's proposal causes such pollution, the Commission must determine whether a feasible and prudent alternative exists which does not cause pollution, impairment or destruction of natural resources. Finally, if all alternatives cause such pollution, the Commission must determine which alternative causes the least damage.

122. The Commission must first determine, as a threshold issue, whether NSP's proposal causes "pollution, impairment or destruction" of natural resources. "Pollution, impairment or destruction" can be proven in two ways, either of which triggers the statutes. The first is to prove the violation (or likely violation) of an environmental standard, limitation, rule, order, license, stipulation agreement or permit. The second is to prove that the proposal would materially adversely affect, or is likely to materially adversely affect, the environment. Minn. Stat. § 116B.02, subd. 5.

123. The record demonstrates that this project will not cause pollution, impairment or destruction of natural resources as defined by statute. Specifically, the Commission has the benefit of both a final environmental impact statement (FEIS) prepared by EQB and extensive testimony on the impacts of this facility on which to base this decision.

124. The FEIS found that no significant environmental impacts result from construction of the ISFSI. FEIS at 1.2. The FEIS also found that if NSP moved the ISFSI site at least 200 yards to the south, as NSP subsequently did, any risk of radiation exposure from the ISFSI would be within acceptable limits. Id. In addition the FEIS assessed whether operation of the ISFSI would impact off-site land use and vegetation, wildlife, water bodies and aquatic resources, employment, fugitive dust, noise, cultural resources, and climate. Ex. 2 at 4.7-4.13. The FEIS noted no material adverse effects or likely material adverse effects in those areas. Id. In addition, the FEIS analyzed whether the ISFSI would create any gaseous, liquid, or solid radioactive wastes and emissions that would impact the environment. Id. at 4.1. The FEIS found that Prairie Island's existing control systems and low level waste streams would handle any such emissions or wastes created during normal operation of the ISFSI. Id. Analysis regarding natural calamities operating on the casks indicated no material adverse effects were likely to occur. Id. at 4.13-4.16. Similarly, the FEIS concluded that accidents would not result in a likely material adverse effect on the environment. Id. at 4.19-4.20. These FEIS analyses and findings support the conclusion that the ISFSI will not cause environmental pollution, impairment, or destruction as defined by statute. However, a more detailed examination of evidence from the hearing is set forth below.

125. The first method of proving "pollution, impairment or destruction" under the statutes is to prove the violation (or likely violation) of an environmental quality standard or rule. The only such standard that might trigger the statutes is the Department of Health's cancer risk standard. The DOH standard would require the proposed storage facility to not "violate the criterion that no single environmental source should pose a cancer risk to any individual greater than 1 in 100,000". Ex. 104, p.3.

126. The MDH calculated a radiation dose limitation of 0.054 millirem ("mrem") per year based in part on that criterion, and in part on a series of other assumptions. Ex. 104, pp. 6, 7. In other words, the maximum dose that



would still meet the standard is 0.054 mrem/year. It is found that the average radiation dose to the nearest resident to the ISFSI will be 0.016 mrem/year. Ex. 1 at 61.

127. Initially, NSP proposed to locate the facility at what is referred to as Alternative Site I. At that site, the dose to the nearest off-site resident would have been 0.34 to 0.42 mrem per year. Pennington, Tr. 2, p. 43; Ex. 105. NSP later moved the site to Alternative Site IV. Ex. 3, p. S-88; Pennington, Tr. 2, p. 21. After the move, the nearest resident is located 0.45 miles northwest of the ISFSI. It is that resident who would be subjected to the 0.016 mrem per year dose. Ex. 96.

128. The MDH recognizes that "the estimated amounts of radiation from the proposed facility are so low, they will not be distinguishable from background levels." MDH Initial Brief at 20. In addition, the MDH testified that background radiation near the ISFSI site ranges from 200-300 mrem annually and that level could vary by more than 5 mrems year to year. Tr. 16, p. 117. Such a variation, according to MDH, would suggest that any changes occurring in radiation levels could be due to random background variation, and would therefore prevent determination of whether radiation from the ISFSI was or was not included in the variation. Id.

129. Further, the ability to even measure radiation at the levels projected for the ISFSI appears extremely questionable. Testimony indicated that dosimeters (devices for measuring radiation) can measure background radiation only to an accuracy of about 1 mrem, which is considerably greater than the estimated annual dose from the ISFSI to the nearest resident. Tr. 3, pp. 106, 137.

130. Even assuming that radiation dose risk attributable to the ISFSI could be distinguished from background radiation, the levels emitted by this facility would not materially adversely affect the environment.

131. Mr. Minor estimated annual population dose consequences arising from various accidents and from normal operation and presented the results in person-rem per year. Ex. 77, Table 4 at 45. The MDH converted those calculated dose consequences into lifetime carcinogenic risk and found that none of the accidents resulted in a carcinogenic health risk for any individual exceeding 1 in 100,000. Tr. 16, pp. 105-108; Ex. 107. At this low level, a radiation source such as the ISFSI does not represent a significant health risk to any individual. FEIS at 6.1; Tr. 16, pp. 107-108.

132. In order to satisfy MDH's rule, it was also necessary for NSP to refine the NRC's method ("NRC methodology") for calculating the ionizing radiation dose from the storage facility. As a consequence, the record contains the annual dose provided to the NRC for both the original and the current site, and a best estimate for the original and the current site.

133. The NRC calculation and the best estimates are used for different purposes. The NRC methodology is based on worst case assumptions. It incorporates a number of conservative assumptions so that during actual use the NRC's standards cannot be exceeded. At the same time, the NRC standards are significantly higher than the MDH standard. The NRC has established a dose limit of 25 mrem/year for the nearest resident.

134. It was unnecessary for NSP to refine its dose analysis filed with the NRC since using the NRC methodology results in a dose of only .08 mrem, which is only 0.3% of the NRC limit of 25 mrem.

135. It has been suggested that the 0.016 mrem best estimate understates the actual annual dose because it assumes the nearest resident is, at all times, shielded by housing material. It is asserted that residents of the Reservation are hunters and generally are outdoors a substantial period of time and, therefore, the shielding factor could understate the actual dose received. However, the dose estimates are conservative in two respects which more than offset the possibility of individuals being outdoors.

136. First, the dose calculation assumes that the closest resident is at home 24 hours a day, 365 days a year, for a period of 70 years. That is, it gives no credit for leaving the residence to go to work, the store, vacations, or even to visit the next door neighbor. Pennington, Tr. 2, pp. 80-81. Second, the dose calculation assumed the berm is 16 only feet tall. In fact, the berm will be at least 17-20 feet high. Increasing the berm reduces the dose. Pennington, Tr. 2, p. 46.

137. The berm was originally proposed for only two sides of the ISFSI. Later, NSP agreed to extend it to all four sides, so it would encircle the entire ISFSI, with the exception of an opening for entrance and exit. Dr. Resnikoff originally asserted that NSP had understated the dose by at least 25%. He was concerned that NSP had miscalculated the impact of cask scatter and concrete scatter (the impact of the casks and the concrete pads on the radiation dose). Ex. 66, pp. 17-19. However, during cross-examination, Dr. Resnikoff agreed that his calculations had not taken into consideration NSP's subsequent decision to encircle the entire storage facility with the earthen berm. The berm reduces the 25% figure to "closer to zero." Tr. 13, p. 56.

138. All of the witnesses agree that the new four-sided berm eliminates all direct radiation, all ground scatter, all cask scatter, and all neutron radiation. Ex. 14, pp. 6-9; Tr. 1, pp. 188-89; Ex. 77, p. 10; Tr. 13, pp. 55-56, 79, 89. The only remaining dose results from skyshine. Ex. 77, p. 10; Tr. 13, pp. 45-46. The berm would not have a top or cover. Skyshine is radiation which is emitted upward and out over the berm and then is reflected back downward.

139. Since the actual dose is .016 mrem/year and the MDH standard would allow up to .054 mrem/year, the standard has been met.

140. But even if the MDH standard were not met, it would be improper to apply it to this proceeding. The MDH has not complied with the Administrative Procedures Act, Minn. Stat. Ch. 14 (the "APA"), in adopting its Health Risk Standard. Therefore, the MDH's standard is invalid and unenforceable. The purpose of the APA is to afford interested and affected parties the opportunity for notice and comment and the scrutiny which the process affords. Had the MDH followed the procedures required by Minn. Stat. Ch. 14, all persons, including NSP, would have been given the opportunity to express their concerns, and the rule would have been subjected to independent scrutiny by the OAH or the Attorney General. Attempting to enforce a standard without going through the required procedures, constitutes improper rulemaking and violates Minn. Stat. Ch. 14. See, Swenson v. State Department of Public Welfare, 329 N.W.2d 320, 324 (Minn. 1983); Monk & Excelsior v. Minnesota Board of Health, 225 N.W.2d 821, 825 (1975); and McKee v. Likins, 261 N.W.2d 566, 577 (Minn. 1977).

141. One of the benefits of reviewing rules through the rulemaking process is the opportunity it affords to identify areas of vagueness and get them clarified before the rule must be applied to a specific case. One of the most common areas of vagueness in technical standards such as the MDH standard is the question of how the measurements are made and what assumptions are made. As noted above, there were a variety of numbers put forward as the radiation exposure to the nearest resident. They varied because of different assumptions. Is it appropriate to assume, for example, that the nearest resident stays at home 24 hours per day, 365 days per year, for a period of 70 years? If not, what adjustments should be made to account for time spent away from home, at work, at stores, etc.? Those are the kinds of questions that get answered in a rulemaking proceeding. They have not been answered in the case of the Department's health risk standard.

142. In summary, the Department of Health's standard is legally unenforceable and cannot be considered as a standard that, even if violated, would trigger a conclusion of "pollution, impairment or destruction." However, even if it were a validly adopted rule, the most credible evidence on the record here leads to the conclusion that at the alternate site and with the four-sided berm as currently proposed, the standard is not violated.

143. The second way to prove "pollution, impairment or destruction" of natural resources is to show that the proposed conduct is likely to "materially adversely affect the environment". Under this method, it is not necessary to show the violation of a rule. Instead, the method allows for the application of the environmental laws in situations where there is no rule, but where protection is nonetheless warranted. For example, in the mid-1970s, there was no rule relating to impulsive noise that would apply to the operation of a skeet shooting range. But the courts upheld the application of the environmental laws to the operation, using this second method, upon a showing that the operation materially impaired the quietude in the area and had other adverse consequences. Minn. Pub. Int. Research Group v. White Bear Rod & Gun Club, 247 N. W. 2d 762 (1977).

144. There was no showing that the proposed project is likely to "materially adversely affect the environment." The most serious likely adverse effect (aside from the potential health effects, which are discussed separately above) would be the effect of the Project on the Mdewakanton Sioux Communities' historical and cultural resources. Such resources are protected under the Act and case law. However, the Act requires a finding that they be "materially" adversely affected. The Administrative Law Judge has reviewed the record, including the public hearings held at Prairie Island, and cannot find sufficient facts to conclude that this project is likely to materially adversely affect the protected resources. The addition of the storage facility is not the same as the construction of the plant itself. The construction of the plant had a far greater impact on the resources than would the "construction" of the ISFSI. See, for example, State, by Drabik v. Martz, 451 N.W.2d 893 (Minn. App. 1990). The ISFSI alone is not likely to materially adversely affect the environment.

145. A second potential impact might be the effect of radioactivity from the casks on the soil in the berm and the soil under the pad. However, the FEIS dismissed this concern in a brief paragraph (Ch. 4 E. at p. 4.18), and it has not been seriously pursued by any of the parties. None of the other effects mentioned during the hearing process are "material" so as to constitute "pollution, impairment or destruction" and thus trigger the protection of the environmental laws.

## DISCUSSION

There are two ways of showing "pollution, impairment or destruction", thereby triggering the central operative provisions of MERA and MEPA. The first is violation of a rule or standard. The second is a showing of a likely "material" adverse impact.

The only rule or standard seriously raised was the Department of Health standard. It is not a rule. Minn. Stat. § 14.05 requires that the Administrative Procedure Act be used to adopt rules. This has not been done by the Department, and thus the standard is unenforceable. Moreover, it has been met as a result of the changes in location and the change in the berm.

It could be argued that even if the standard could not be enforced as a rule, it still ought to be enough to trigger the environmental statutes. Such a result would be absurd. The environmental statutes were adopted before the 1975 adoption of the modern Administrative Procedure Act. In the pre-1975 regulatory system, it made sense to establish triggering standards by a violation of a "standard, limitation, rule, order, license", etc. After 1975, however, there was a sharp distinction drawn between "rules" and other forms of agency statements, such as "guidelines", "policies", etc. Rules are enforceable, whereas the others are not. The serious consequences of triggering the environmental laws, in the post-1975 period, is reserved for agency statements that have undergone the scrutiny of the rulemaking process. The MDH standard has not received that scrutiny. It cannot be used to trigger the environmental statutes.

The second method of triggering the laws is used when there is no applicable rule. It only requires a showing that there is likely to be a material adverse affect on the environment. It was taken from the Michigan Environmental Protection Act, which was the model for many of provisions in the Minnesota statutes. The Michigan Supreme Court, in Ray v. Mason County Drain Commissioner, 393 Mich. 294, 224 N.W.2d 883 (1975), discussed the discretion given to the courts in determining if there has been a violation of environmental rights in the absence of established standards or statutes. The Michigan court stated:

The legislature in establishing environmental rights set the parameters for the standard of environmental quality but did not attempt to set forth an elaborate scheme of detailed provisions designed to cover every conceivable type of environmental pollution or impairment. Rather, the legislature spoke as precisely as the subject matter permits and in its wisdom left to the courts the important task of giving substance to the standard by developing a common law of environmental quality. The Act allows the courts to fashion standards in the context of actual problems as they arise in individual cases and to take into consideration changes in technology which the legislature at the time of the Act's passage could not hope to foresee.

224 N.W.2d 883, at 888.

In Minnesota, a "common law" has developed. The common law requires a prima facie showing of "pollution, impairment or destruction". In many cases, this has been easy. See, for example, County of Freeborn by Tuveson v. Bryson, 297 Minn. 218, 210 N.W.2d 290 (1973); and County of Freeborn by Tuveson v. Bryson, 309 Minn. 178, 243 N.W.2d 316 (1976); and Urban Council on Mobility v. Minnesota Department of Natural Resources, 289 N.W.2d 729 (1980). In those cases, the impact of building a road or highway across a wetland or a lake were obviously negative and material. In other cases, however, it has not been so easy to make a prima facie case of environmental impairment. For example, in State, by Skeie v. Minnkota Power Coop., Inc., 281 N.W.2d 372 (1979), the Supreme Court affirmed a trial court holding that Skeie had failed to make out a prima facie case when he only demonstrated that the use of his cultivated fields would be made more difficult because of the presence of a proposed power line. He did not show that the power line would make the soil sterile, or cause it to erode, or limit its cropping potential in a significant and irreversible way. Skeie did show some permanent, but minor, impacts but the court dismissed them because the law requires that the adverse impacts be "material".

EQB stated that the Commission should consider the intensity of the debate concerning possible environmental impacts in determining whether or not the ISFSI will actually have such impacts. EQB cites In re Winona County Municipal Solid Waste Incinerator, 442 N.W.2d 344 (Minn. 1989), for the proposition that the mere presence of a dispute over pollution effects can be a factor in deciding whether a project is likely to cause pollution, impairment or destruction. EQB Initial Brief at 9. However, in Winona County, the MPCA Board had denied requests for a hearing. The court's decision focused on the need for a contested case hearing due to the presence of disputed facts. The court did not cite the existence of the controversy as evidence that the proposed project would per se cause pollution. See Winona County at 349.

In the current case, while the safety and pollution effects of the ISFSI have been highly disputed, the parties disputing the safety and pollution effects of the ISFSI have had opportunities before both the EQB and the ALJ to present evidence in support of their positions (and on pure safety questions will have still another opportunity before the NRC). Therefore, the rationale which caused the Winona County court to remand for a hearing has already been satisfied in this case. The mere fact that there is substantial controversy over a proposal does not mean that it automatically will "materially adversely affect the environment". What it does mean is that the regulatory system should take a "hard look" at the proposal, which certainly has been done in the case of the Prairie Island ISFSI.

It has also been suggested that the fact that an EIS was prepared points to the conclusion that there will be "pollution, impairment or destruction." MEQB Brief, at p. 9. This is asserted because EISs are only prepared on those projects where there is a potential for significant environmental effects, pursuant to Minn. Stat. § 116D.04, subd. 2a (1990). This logic, however, is faulty because the purpose of an in-depth EIS is to identify, analyze and evaluate the possible effects. It is entirely consistent with the preparation of an EIS that, after the study is completed, there is ultimately a conclusion that there are no material effects.

As noted above, this is not a situation where we are examining the impact of the plant itself on the resources. Instead, our inquiry must be limited to the impact of the ISFSI only. Under that test, there has been no showing that the impact would be material.

### Certificate of Need Criteria

146. Both the Certificate of Need statute, Minn. Stat. § 216B.243 (1990) and a Commission rules provide a lengthy list of factors to consider in assessing need. The clearest grouping of them occurs in the Commission's rules. Minn. Rules pt. 7855.0120 provide four basic criteria which the Commission must analyze in a Certificate of Need proceeding:

- (1) The effect of the facility on the future adequacy, reliability, safety, or efficiency of energy supply (subp. A);
- (2) Alternatives to the proposed facility (subp. B);
- (3) The consequences to society of granting or denying the Certificate for the proposed facility (subp. C); and
- (4) Whether the facility will comply with policies, rules, and regulations of other state and federal agencies and local governments (subp. D).

### Criterion 1 - Energy Supply

147. Minn. Rules pt. 7855.0120, subp. A provides that the Commission should grant a Certificate of Need to an applicant if the Commission determines that:

The probable direct or indirect result of denial would be an adverse effect upon the future adequacy, reliability, safety, or efficiency or energy supply to the applicant, to the applicant's customers, or to the people of Minnesota and neighboring states.

148. The Company's application for a Certificate of Need requests authority to install up to 48 storage casks, which would allow the plant to operate at full capacity until the year 2020 or beyond. Ex. 121 at 4.

149. In various places in its testimony, NSP discussed the need for 16 casks (Ex. 6 at 5), 22 casks (880 assemblies in dry storage divided by 40 assemblies per cask) (Ex. 1 at 155), 29 casks (id. at 157), 31 casks (id. at 159) 32 casks (id. at 156), 37 casks (id. at 158), and 38 casks (id. at 160). The various numbers reflect the tremendous uncertainty over the federal siting effort. NSP witness Ms. Hirschberger, NSP's manager of energy resource planning, stated that she has not discussed any scenarios under which the Company would actually need to use all 48 casks. Tr. 4, p. 125.

150. The Department recommended that the Commission limit NSP's Certificate to 14 casks. Ex. 121 at 15. However, this was premised on the federal government's ability to begin accepting spent fuel in 1998. If DOE begins accepting this waste in 1998, as required by law, at high acceptance rates, then NSP would not need more than 14 casks at Prairie Island. Id.; Ex. 54 at 32. This is an extremely unlikely scenario.

151. The state's energy needs can be met by NSP with a combination of alternatives, including a "stretch out" of Prairie Island's remaining spent fuel pool storage, as discussed immediately below.

## Criterion 2 - Alternatives

152. The second criterion of the Certificate of Need Rules, Minn. Rules pt. 7855.0120 subpt. B, directs the Commission to consider alternatives to the proposed facility.

### A. Stretch-out of the Remaining Storage Space

153. Prairie Island can continue to operate beyond 1995 by conserving existing pool fuel storage space. Tr. 1, p. 53 ; Tr. 3, p. 154 ; Tr. 5, pp.152-53 ; Tr. 7,p. 131 ; see also Exs. 7 and 8; Tr. 17, pp. 185-87, 188-89, 155-56; Ex. 67, at Tab 3).

154. It is likely, but not known with certainty, that one of Prairie Island's two reactors could be mothballed for several years, then later restarted. Tr. 4, p. 145.

155. Commission Rule 7855.0100, the "no forced shutdown" rule, even if applicable to this proceeding, is not implicated by a "stretch-out" alternative.

156. The stretch-out alternative's existence means that other alternatives to the Project do not have to provide 7,600 gigawatt-hours ("GWh") per year of power by 1995. It allows more time to phase in alternative sources of energy and determine the course of federal efforts while continuing to receive significant power output from Prairie Island even if no new fuel storage is added.

## DISCUSSION

The stretch-out alternative, in conjunction with other alternatives, provides the Commission (and the Legislature) with a very important commodity: time. Only the passage of time will allow for reasonable certainty regarding the federal effort at Yucca Mountain, or at an MRS site. Almost all of the witnesses agreed that we will know a lot more about the likely success or failure of the federal efforts by the year 2000, and thus will be in a better position to weigh the alternatives and decide what is best. To the extent that Prairie Island operates at reduced capacity, it will produce less spent fuel, and the remaining capacity in the spent fuel pool will take longer to be filled.

The stretch-out alternative also avoids dealing with a problematic rule, Minn. Rule pt. 7855.0100, which is the "no forced shutdown" rule. It provides that:

In the case of an application ... 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.

There was a disagreement over the applicability of this rule to the current application. There is substantial doubt that the proposed ISFSI constitutes "expansion . . . of a facility". However, resolving that disagreement definitively would prolong this report unnecessarily. It is sufficient to say that if the Commission includes the stretch-out alternative as a part of its resolution, it is not forcing a shutdown.

### B. Conservation

157. All parties agreed that the "technical potential" exists to replace the energy and capacity of Prairie Island with conservation. However, these technical potential estimates do not consider the costs of DSM measures or the ability of existing institutions to capture these potential savings. Further, these estimates assume that the best currently available technologies achieve full and immediate adoption and use. Thus, while all of the conservation witnesses agreed that significant technical potential exists, the parties differed greatly in their views of the amount of DSM savings which NSP can actually achieve.

158. The record of this proceeding closed, for purposes of evidence on conservation, in December. There have been developments since then, but they are not in the record, nor have then been the subject of administrative notice. Therefore, disparities between current developments and this report do exist. However, for purposes of determining the ability of conservation to replace part of Prairie Island's output, the new information is not important enough to warrant reopening the record or taking administrative notice. Should the Commission desire to take notice of more recent developments, they may do so.

159. The amount of conservation which is actually achievable will always be less than the amount that is technologically possible. Tr. 11, p. 149. Further, it would be imprudent to make decisions based on pure technical potential, without any consideration to marketplace obstacles. Id. at 165-166. It is found that the Commission must consider that amount of conservation which a company can actually achieve when evaluating the strength of that particular resource option.

160. The record demonstrates that NSP has significantly underestimated the achievable potential for cost-effective demand-side management within its service territory. It is found that NSP can achieve 5400 gigawatt hours (GWh) of energy savings by the year 2010, as opposed to the Company's goal of 3700 GWh. Compare Ex. 95 at 15 and Tr. 7, p. 45.

161. This estimate (by Mr. Crandall) of achievable conservation uses several analytical approaches. Ex. 95 at 15. Mr. Crandall first examined the DSM target values for NSP-Wisconsin and the total costs for Company influenced DSM programs in order to estimate the cost per delivered unit of saved energy for NSP-Wisconsin over the 1991 to 2010 timeframe. Id. Mr. Crandall then



applied these target energy savings to the entire NSP system and determined that NSP-Minnesota could achieve similar amounts of DSM, at equivalent costs, to those projected by NSP-Wisconsin. Id.

162. Mr. Crandall compared the results of this analysis, based on NSP-Wisconsin filings, with an analysis of data from numerous sources concerning DSM potential in other states and regions. This analysis further supported Mr. Crandall's determination that NSP-Minnesota could achieve 5400 GWh of energy savings by the year 2010. Id. at 16.

163. Even this amount of DSM energy savings does not fully offset the potential loss of "full bore" generation from the Prairie Island nuclear units. Ex. 95 at 16. In 1990, PI produced over 7600 GWh of energy. Id. In contrast, DSM can provide only energy savings of 5400 GWh by the year 2010. Id. Thus, conservation alone can not replace all of the energy delivered by Prairie Island by the year 2010, the end point of Mr. Crandall's analysis. Id. at 17.

164. There was substantial debate over projections of the amount of energy Prairie Island will produce and therefore the amount of conservation necessary to replace Prairie Island. This debate centered on the appropriate capacity factor to use when projecting Prairie Island's operations into the future. A capacity factor reflects the percentage of the time a power plant actually produces energy. Therefore, when applied to a plant's rated capacity, the capacity factor can project the energy output from that plant.

165. By the year 2000, the Prairie Island plant will be nearly 30 years old. No commercial nuclear plant operating in the United States today has operated for 30 years. No commercial reactor built earlier than 1968 (24 years ago) is operating today. Ex. 67, (Hansen Rebuttal), at 5-6; Ex. 67, Tab 1, at 7-10.

166. Every other nuclear plant in the country of Prairie Island's vintage has suffered significant declines in capacity factors due to age-related deterioration. However, as noted above, Prairie Island has, to date, performed above-average for its type and vintage.

167. Community witness Mr. Komanoff is a nationally recognized expert on capacity factors of nuclear plants. He testified to two different plausible scenarios for PI's capacity factor over the next decade. Ex. 67, Tab 1, page 11. First, Mr. Komanoff applied a statistical model by which he projected a 10 year average capacity factor for Prairie Island until the year 2000 of 73 percent. Id. Mr. Komanoff derived this average figure from a picture of steadily declining capacity factors over that decade, reaching a low point of 64 percent in the year 2000. This 64 percent capacity factor still translates to over 5940 GWh of energy production in the year 2000 (1060 MW capacity times 8760 hours times 64 percent capacity factor).

168. Mr. Komanoff's second scenario projects higher capacity factors for Prairie Island through this period, recognizing the high operations the plant has experienced in the past. Under this scenario, PI would average an 80 percent capacity factor over the decade, declining to 75 percent by the year 2000. Ex. 67 at Attachment 1, page 11. This 75 percent capacity factor translates to over 6900 GWh of energy production. It is found that the second Komanoff scenario, which has capacity factors declining to 75 percent in 2000,

is the most likely to occur. That means that as Prairie Island gets older, NSP will have to replace a portion of its output regardless of whether this Certificate is granted or denied. Ex. 67 (Hansen rebuttal), at p. 5.

### C. Other Energy Supply Options

169. The record contains considerable discussion of various renewable energy options, primarily wind and biomass. There is substantial credible evidence that wind, in some Minnesota locations, does currently have the potential to be a realistic power producer, which can be relied on as a part of a combination of sources to replace a part of Prairie Island. Biomass, on the other hand, may have good long term potential, but it was not demonstrated to be reliable enough to be counted on.

170. Wind power is today a practical technological resource. In California since the early 1980s utilities have installed approximately 1,600 MW of wind generation capacity. Tr. 8, pp. 8, 10; Ex. 47, Attach. B. The 1,600 megawatts of installed wind capacity in California produce approximately 2,700 GWh/yr. of power output. Tr. 8, p. 36.

171. Most of the wind generation capacity in California was installed between 1982 and 1987, a 5 year period. Tr. 9, p. 37. However, Pacific Gas & Electric and Southern California Edison project installing close to 1000 MW of additional wind capacity in the state. Tr. 8, pp. 71-72.

172. Modern wind turbines produce power at wind speeds of between 8 and 27 m.p.h., and a well located and well maintained wind turbine will have an average annual capacity factor of 39%, ranging up to 50%. Tr. 8, pp. 7, 20-22, 25-26.

173. Buffalo Ridge, located near Pipestone in the southwest corner of the state, is a better wind resource than California. The land is flatter, the wind blows harder, more frequently, and is more evenly distributed than at wind sites in California. Tr. 5, pp. 49, 56; Tr. 8, pp. 21, 38.

174. The coincidence of the wind resource in NSP's service territory to NSP's system peaks is as good as the coincidence of the wind resource in California to California utility system peaks. Tr. 8, pp. 54-55.

175. Wind speeds below 8 or 9 miles per hour on the Buffalo Ridge are very rare. Wind speed is in excess of such speeds 85% of the time. The average wind speed is 16.5 to 17 miles per hour. Tr. 8, p. 65.

176. Although Buffalo Ridge is a better wind resource than California, there are more wind turbines operating in California in part because of regulatory actions taken by the California Energy Commission during the 1980's. Tr. 8, pp. 48-49.

177. Land availability is not a limiting factor in the development of the windpower resource in southwestern Minnesota. On a wind energy farm, roughly 5% of the total land mass is used for the actual spotting of the turbines. The remaining 95% of the land can be used for other activities such as farming. Tr. 8, pp. 43-44.

178. For wind generation on Buffalo Ridge one would need 3 megawatts of wind generating capacity to equal 1 megawatt of baseload nuclear or coal capacity. Tr. 8, pp. 37-38, 53.

179. Capacity factors higher than 39% can be achieved from wind sites on Buffalo Ridge, because the Buffalo Ridge sites are better and have more evenly distributed wind than sites in California do. Tr. 8, p., 21.

180. Even in July, the average wind speed on Buffalo Ridge is 15.6 miles per hour, sufficient to produce wind power. Tr. 8, p. 22.

181. The incremental costs of power production from windpower are competitive with the incremental costs of production from coal and nuclear power plants. Tr. 8, p. 30. The cost per kilowatt-hour of wind power production is about 1.2¢ per kilowatt-hour. Tr. 8, p. 32; see also Juhl Direct at Ex. B. Compare Ex. 1, p. 17, Fig. 2.

182. If windpower capital costs are amortized over the 35-40 years used for amortization of conventional fossil fuel and nuclear plants, the installed cost per kilowatt-hour of wind (including capital cost) would be in a range of 3¢ to 4¢ per kilowatt-hour. Tr. 8, pp. 56-57.

183. The costs of wind generation will likely continue declining into the future, as they have over the last 5 years. Tr. 8, p. 11.

184. Marrying wind to natural gas technology is a technologically viable option to replace baseload coal or nuclear plants with wind energy. Tr. 8, pp. 33, 53, 68.

185. A system combining wind turbines with gas turbines would, in order to totally replace Prairie Island's power output, not have to produce more than 8,000 gigawatt-hours of power annually. Tr. 8, p. 85.

186. If a combined wind generation and natural gas system is built, and all fuel costs and capital costs are considered, the cost of the combined wind and natural gas system is comparable at a 1 to 1 ratio with the cost of traditional coal or nuclear baseload plants. Tr. 8, pp. 89, 93.

187. NSP acknowledges that it is possible to partner a gas turbine peaking plant with wind turbines to ensure reliable energy output from a wind energy system (Tr. 5, p. 9) but has done no study of this alternative.

188. There are currently 16,000 to 17,000 wind turbines installed in California ranging in capacity from 25 to 500 or 600 kilowatts per turbine. Tr. 8, p. 40.

189. NSP has three operating wind energy turbines.

190. NSP installed the three wind turbines that it does operate primarily because of the stipulation settlement agreement of the Sherco 3 Certificate of Need proceeding. Tr. 8, p. 59.

191. The only current plans NSP has to build wind power between now and 1999 are for a second generation experimental wind plant of 10 megawatts in 1996. Tr. 5, p. 133.

192. Wind power does have the achievable potential to supply substantial quantities of power and capacity to NSP. While the amount suggested by Mr. Juhl (who claimed up to 4,800 megawatts could be installed within 5 years under an aggressive program, Tr. 8, pp. 8-9 and 69) is so much greater than past efforts here as to be unrealistic, a more modest amount, in the range of 200 to 250 megawatts, is credible and realistic if certain financial matters can be worked out. Juhl, alone, has suggested he could do 50 Mw, and 200-250 Mw is possible. The availability of municipal bonding and long amortization periods are examples of the types of tools needed to overcome obstacles. Tr. 8, pp. 32 and 56-57.

193. NSP did not combine wind power with any other alternative to see if the combination could replace the Project. Tr. 3, pp. 156, 184-185.

194. Purchased power resources appear to be declining into the future. Mid-Continent Area Power Pool (MAPP) forecasts indicate that some level of available capacity exists at the end of the decade if one includes proposed as well as committed capacity. Ex. 101. However, MAPP forecasts show a definite decline in available purchased power over this time frame. Tr. 10, pp. 237-38. Purchased power alone is not a viable long-term alternative to NSP's proposal, but it can be used as a part of a multi-part approach to replacing some PI capacity, particularly in the short-term.

#### D. Other Storage Options

195. Two broad methods of storing spent nuclear fuel exist: dry storage or pool storage. Additional pool storage discussed in the hearing included re-racking and two-tiered racking.

196. NSP has already reracked its pool twice, and has also conducted a fuel rod consolidation demonstration project. Ex. 1, pp. 12, 94. Originally, the spent fuel pool was intended to hold a total of 202 fuel assemblies. Id., p. 12. As a result of the two rerackings, the pool's capacity has increased to 1,354 spent fuel assemblies. Id., p. 13.

197. A third reracking can increase storage capacity by 20%. Id., p. 89.

198. The use of two-tiered racks would require additional structural supports to the spent fuel pool walls. Two-tiered racks permit 35% additional storage capacity. Id., p. 91.

199. The fuel rod consolidation proposal also increases pool capacity by approximately 35%. Id., p. 95.

200. From a technical standpoint, two-tiered racks are not desirable. No other utility like PI has attempted it. Id., Tr. 1, p. 58. In addition, the principal safety mechanism used in pool storage is the water covering the fuel racks. With two-tiered racks, there is less water coverage. Id., pp. 111-12.

201. All three alternatives cause substantially more worker exposure to radiation. Therefore, from an employee safety standpoint, all three alternatives are less desirable than dry cask storage. Id., pp. 112, 117-18. Further, the additional fuel handling required increases the risks of an accident. Tr. 12, pp. 89, 100. However, NSP has successfully reracked twice before, under the same constraints.

202. Fuel rod consolidation is very time and labor intensive. It requires employees to be in the spent fuel pool area essentially 100% of the time. They would either be working on refueling or on the fuel rod consolidation process. Tr. 1, p. 118.

203. A further problem caused by increasing existing pool storage is that it results in a large volume of low-level waste. Tr. 1, p. 117; Tr. 13, p. 14.

204. Temporary dry cask storage appears safer than pool storage for several reasons. See Tr. 13, pp. 6-12. First, the casks will hold only fuel which has cooled ten years or more, thereby reducing both the radiation and heat emitted compared to the pool. Tr. 12, pp. 91-92. Second, the cask structure itself surrounding the fuel rods has a reasonable chance of preventing most interactions between the fuel, compared to the pool. Id. The pool packs fuel assemblies closer together and uses water for cooling, which increases corrosion. If the pool loses water, substantial thermal reactions may occur. Id. at 91-92, 97-98. Finally, dry cask storage cools the spent fuel by entirely passive means. Ex. 77 at 7. Since there are no active systems needed to assure adequate cooling, only environmental stresses which exceed design limits or errors in design, fabrication, or installation of the dry storage casks can result in accidents with consequences to the public. Ex. 77 at 7.

#### E. Reprocessing

205. When NSP built Prairie Island, it planned for minimal spent fuel storage. Instead, the Company (and the entire commercial nuclear power industry) intended to reprocess this waste. Reprocessing entails recycling spent nuclear fuel by extracting, to the extent possible, the unused uranium and plutonium which is then re-enriched and manufactured into new fuel pellets or the recovered uranium and plutonium are sold. Ex. 54 at 36-38. The fission products that remain after extraction of the uranium and plutonium constitute "waste." This waste is formed into vitrified logs, which comprise approximately 20 percent of the volume of the original spent fuel but remain highly radioactive. Ex. 54 at 38. The logs would be returned to the utility, requiring storage until DOE accepted it for an MRS or permanent repository. Id. at 38.

206. The United States abandoned all plans for reprocessing after President Carter prohibited these activities in 1977. See Ex. 121 at 3. Although reprocessing activities were allowed again in 1981, no viable reprocessing industry exists in the United States at this time. Id.; Ex. 1 at 102-103. Currently only two fuel reprocessing facilities exist world wide, one in Great Britain and one in France. Id. at 37. Thus, to reprocess its spent fuel, NSP would first have to obtain a 10 C.F.R. pt. 110 NRC license to export the spent fuel to one of the available facilities. Ex. 54 at 38. In addition, NSP would have to transport the fuel. Id. Since the current contracts of the reprocessing facilities abroad have a backlog of 10 to 12 years before reprocessing could occur, NSP would either have to hold the fuel on site until it could be shipped for reprocessing or contract to have it shipped now and stored at the reprocessing facility. Id. at 38. Once reprocessing occurred, NSP would have to import the remaining HLW and store it until DOE accepted it. Id.

207. Costs associated with the reprocessing alternative are difficult to estimate accurately. Direct costs vary considerably depending on assumptions and would increase if DOE surcharges increased. Ex. 54 at 39-40 and schedules

23-26; Tr. 9, p. 133. Externalities increase those costs by an indeterminate amount. Tr. 9, pp. 122-23. Even without those variables, looking at only internal costs of reprocessing compared with the internal costs of the ISFSI, reprocessing imposes five times the cost of an ISFSI. Tr. 10, p. 238; Ex. 54, Schedule 26 compared to Schedule 16.

208. No party seriously advocated adoption of the reprocessing alternative. It is found that the absence of a domestic reprocessing facility, the uncertain costs of reprocessing, the difficulties associated with export licensing and transportation, and the continued problem of storage of high-level radioactive waste at the end of the process renders reprocessing nonviable.

### Criterion 3 - Consequences Of Granting Or Denying Certificate

209. The third criteria of Minn. Rules pt. 7855.0120 requires an applicant to demonstrate:

by a preponderance of the evidence on the record that the consequences of granting the certificate of need for the proposed facility, or a suitable modification thereof, are more favorable to society than the consequences of denying the certificate.

Minn. Rules pt. 7855.0120, subp. C.

210. If the dry cask storage were temporary, then NSP has shown that consequences of granting it are more favorable than the consequences of denying it. However, if the dry casks storage ends up being permanent, then NSP has failed to show that it would be more favorable than pursuing the Coalition's and Community's proposals to avoid it with a combination of alternatives.

211. The consequences of granting the Certificate if the dry casks storage turns out to be temporary are continued operation of Prairie Island at full capacity, which has cost savings for NSP's ratepayers. NSP would be able to avoid the costs of alternatives, most of which (except for the stretch-out portion) are more expensive than continued operation of Prairie Island at full capacity.

212. If the dry cask storage turns out to be permanent, then the consequences of granting the Certificate are not more favorable to society than the consequences of denying it. Since the casks only have a design life of 25 years, and an unknown (but no more than 100 year) maximum life, the fuel will have to be transferred into new casks at some point. The cost of those casks, and the cost of the transfer, are unknown.

213. NSP does not have to shut down the plant, at least immediately or in 1995, if the Certificate is not granted. It can stretch out the plant's operation by reducing its output. It can stretch out the plant's operational life even longer by reracking or otherwise expanding the storage capacity.

214. Granting the proposed Certificate would reduce the pressure on the Federal government to fulfill its obligations and provide for the ultimate storage of this material. No party disagreed with the proposition that

permanent storage is best accomplished in a permanent repository, such as is being sought at Yucca Mountain. It is better than the spent fuel pool, and it is better than the dry casks. The most favorable outcome for NSP and Minnesota would be for the Federal government to successfully complete its siting process. Denying the Certificate at this time is more likely to hasten that completion than granting it.

#### Criterion 4 - Compliance With Other Laws

215. The final criteria of the Certificate of Need Rules requires that the proposed facility comply with relevant rules and regulations of other state and federal agencies and local governments. Minn. Rules pt. 7855.0120, subp. D. As noted above, the proposed facility does comply with the Department of Health's criterion, even though it is not enforceable because it is not a validly adopted rule. The Prairie Island Indian Community Ordinance is presently unenforceable. If the injunction were lifted, and the Ordinance went back into effect, then NSP would either have to comply with it, or avoid it (there were preliminary indications NSP might construct an alternate road that avoided the Reservation). It would be appropriate for the Commission to condition any Certificate on NSP's receiving the appropriate license amendments from the NRC, and on a showing that NSP has filed an amended emergency preparedness plan with the NRC.

#### Costs

216. In considering the costs imposed by NSP's proposal, the Commission shall take a social cost approach to its decisionmaking. This social cost approach considers all the costs imposed by a project, both internal and external. Ex. 121 at 7. Internal (or direct) costs include those items requiring the operator of the project to spend money, such as siting, development, and construction costs. Id. External (or indirect) costs include those costs imposed on society by a project, but which do not require the operator to spend money. Id. Examples of external costs include items such as environmental damage and reduced productivity in the economy. Id.

217. The Commission has adopted a social cost approach in other types of proceedings. The integrated resource planning (IRP) process currently being implemented by the Commission reflects this type of cost analysis. See Minn. Rules pts. 7843.0100-7843.0600. Further, the Commission is currently in the process of revising its cogeneration rules to incorporate environmental considerations in buy-back rates for wind energy. Ex. 121 at 8. Through these actions, the Commission has recognized the need to adopt a social cost approach when making resource decisions.

218. The Company presented the Commission with the internal costs of its project. Ex. 121 at 8; see also Ex. 31 at 7-8. NSP acknowledged that external costs of nuclear power exist, Tr. 4, p. 119 and recognized that "addressing externalities in some manner can serve a valid and appropriate foundation for making decisions among resource options." Ex. 31 at 7. Arriving at a societal cost is a difficult task, but without it, the Commission does not have all of the necessary information to determine true the comparative costs.

219. The Department has performed a detailed cost analysis of both the direct costs and the indirect costs of the ISFSI. However, no party has performed a similarly detailed cost study for the various mixes of

alternatives that could be used to stretch out the plant's operation and avoid the ISFSI. The Administrative Law Judge finds the Department's analysis of direct costs to be valid, with one minor exception. The Department had included a \$70,000 per year cost for compliance with the Community's Ordinance. Ex. 54, pp. 18-20 and Schedule 16, line 23. Inclusion of that amount is not appropriate in light of the court injunction. It must be subtracted from the Department's estimates, and then the net present value recalculated. It is, however, not a material change.

220. The Department also analyzed the indirect costs of the proposal. Those estimates are found to be valid, without exception.

221. It is not possible to accurately predict the total societal cost of combinations of alternative sources unless each source is "priced" and the quantity of each source is specified. No party has done that. The Department did analyze a number of alternative scenarios, but none of them consisted of a mix such as conservation, alternative sources of energy, power purchases and stretch-out. Tr. 17, p. 186; Tr. 18, p. 161.

222. The Administrative Law Judge recommends to the Commission that, to the extent it feels a need for a cost comparison, it order the parties to attempt to stipulate to some conceptual basis for comparing the relative costs of a mix of alternatives, which would include a stretch-out of the plant's capacity. If the parties could agree on the outcome of such a study, this recommendation would not require additional contested case hearings.

#### DISCUSSION

The Administrative Law Judge recognizes the serious difficulties of preparing both internal and external cost studies for a mix of alternatives. The Department indicated that it had already expended substantial resources in its effort, and Commissioner Sanda is to be commended for allocating those resources to this case. To do a precise least cost study using alternatives would be daunting. However, it would appear to be a more reasonable task if the Commission could be given a rough idea of the relative costs of several possible combinations. This would not require the kind of effort needed for a precise least cost study. The Department's existing analysis (Ex. 98) could be the starting point for this study.

The parties cooperated extremely well during the prehearing and hearing phases of this proceeding, and if the Commission feels it needs this information, it is hoped the parties could cooperate and agree on at least some rough idea of the relative costs.

Based on the foregoing Findings, the Administrative Law Judge makes the following:

#### CONCLUSIONS

1. The Administrative Law Judge and the Minnesota Public Utilities Commission have jurisdiction over the subject of this hearing pursuant to Minn. Stat. § 237.16.

2. The Commission gave proper notice of the hearing in this matter, has fulfilled all relevant, substantive and procedural requirements of law or rule, and has the authority to take the action proposed herein.



3. This proceeding involves a determination of whether NSP's application for a certificate of need should be granted. The factors the Commission must consider in making a determination in this matter are contained in Minn. Stat. § 216B.243, and Minn. Rule, pts. 7855.0100 to 7855.0120, and the other statutes and rules discussed in the Findings.

4. It is unknown when, if ever, the DOE may remove PI's spent fuel. The proposed ISFSI constitutes a "radioactive waste management facility" within the meaning of Minn. Stat. § 116C.72, thus requiring the authorization of the Minnesota legislature prior to its construction. Without such authorization, the proposal does not meet the requirements of Minn. Stat. § 216B.243, subd 3 (8) and Minn. Rule 7855.0120.

5. NSP's forecasts of demand are accurate. However, the Applicant has failed to show, by a preponderance of the evidence that the adequacy of the state's energy supply will be adversely affected if its application is not granted immediately.

6. Existing or expected sources of power and conservation programs can replace the need for additional storage capacity under a "stretch-out" scenario.

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.

9. The need for dry cask storage is not the result of promotional activities by NSP.

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.

11. Denying or not granting the Certificate of Need is more favorable to society than the consequences of granting it until either one of two events occurs:

the legislature authorizes construction of the ISFSI; or,

the Commission finds that 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.

If either of those two events occurs, then the consequences of granting it are more favorable than the consequences of denying it, and the Commission ought to grant the proposed Certificate of Need.

12. Any of the foregoing Findings more properly considered a Conclusion, and any of the Conclusions more properly considered a Finding, are hereby adopted as such.

THIS REPORT IS NOT AN ORDER AND NO AUTHORITY IS GRANTED HEREIN. THE PUBLIC UTILITIES COMMISSION WILL ISSUE THE ORDER OF AUTHORITY WHICH MAY ADOPT OR DIFFER FROM THE FOLLOWING RECOMMENDATIONS.

Based on the foregoing Conclusions, the Administrative Law Judge makes the following:

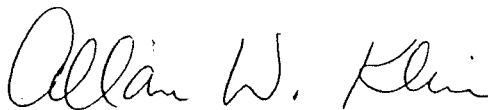
#### RECOMMENDATIONS

1. That the 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.

3. That if the Commission feels it needs comparable cost data, it order the parties to meet and confer in an attempt to stipulate to a comparison of the relative total costs of several possible combinations of alternatives which would include a stretch-out of the existing storage capacity.

Dated this 10<sup>th</sup> day of April, 1992.



ALLAN W. KLEIN  
Administrative Law Judge

Court Reported: Janet Shaddix Elling and Lori Case  
Janet E. Shaddix & Associates

#### MEMORANDUM

I. The essentials of the Findings and Conclusions can be summarized as follows:

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, and would be eligible to receive a Certificate of Need. 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. Neither the Commission nor NSP can control the timing or direction of the federal siting effort. Once the casks are in place, the path of least resistance is to leave them there indefinitely.

5. A reasonable alternative would be to wait and see whether the federal government can, in fact, progress its effort to the point that the Commission can be satisfied that the dry cask storage will be only temporary. It is possible to stretch-out Prairie Island and use other alternatives to meet energy needs while we wait and see how the federal effort is progressing. However, the cost of this wait and see approach is greater than the dry cask approach, but that cost has not been fully developed in this record.

II. The record supports the issuance of the Certificate except for the permanence problem. 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.

III. There had been fears at the start of the proceeding that this case would be bogged down in disputes over federal preemption. That did not occur, and does not seem likely to occur in light of the approaches taken by the parties. The parties have avoided direct challenges to the preemption issue by focussing on legitimate state matters such as need and cost. Therefore, the issue has not been addressed above.

A.W.K.