BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

David C. Boyd	Chair
J. Dennis O'Brien	Commissioner
Thomas Pugh	Commissioner
Phyllis A. Reha	Commissioner
Betsy Wergin	Commissioner

In the Matter of the Application of Northern States Power Company d/b/a Xcel Energy for Certificate of Need for an Extended Power Uprate at the Prairie Island Nuclear Generating Plant	ISSUE DATE: December 18, 2009 DOCKET NO. E-002/CN-08-509 DOCKET NO. E-002/CN-08-510
In the Matter of the Application of Northern States Power Company d/b/a Xcel Energy for Certificate of Need for Additional Dry Cask Storage at the Prairie Island Nuclear Generating Plant	DOCKET NO. E-002/GS-08-690 ORDER ACCEPTING ENVIRONMENTAL IMPACT STATEMENT, AND GRANTING CERTIFICATES OF NEED AND SITE PERMIT WITH CONDITIONS
In the Matter of the Application of Northern States Power Company d/b/a Xcel Energy for an LEPGP Site Permit for the Extended Power Uprate Project at the Prairie Island Nuclear Generating Plant	

PROCEDURAL HISTORY

I. Initial Proceedings

On May 16, 2008, Northern States Power Company d/b/a Xcel Energy (Xcel) applied for two Certificates of Need pertaining to its Prairie Island Nuclear Generating Plant (PINGP).[1] One certificate would establish the need for an extended power uprate[2] to increase the generating capacity of the Unit 1 reactor in 2012 and the Unit 2 reactor in 2015. The other certificate would establish the need for additional secure containers, called "dry casks," to store spent nuclear fuel at

[1] Exh. 100, Application for Certificates of Need (CN Application).

[2] The federal Nuclear Regulatory Commission (NRC) uses the term "extended power uprate" to refer to the process of authorizing a commercial nuclear power plant to increase its generating capacity by 7 to 20 percent pursuant to 10 C.F.R. Part 50. See United States Nuclear Regulatory Commission, Review Standard 001 (December 2003), http://www.nrc.gov/reactors/operating/licensing/power-uprates/rs-001-rev-0-dec2003.pdf

the plant's Independent Spent Fuel Storage Installation (ISFSI).[3] Xcel supplemented its application on July 14. The Commission assigned these matters to Docket Nos. E-002/CN-08-509 and 08-510, respectively.

On July 22, 2008, the Commission issued an order accepting Xcel's application as substantially complete pending an additional filing and, by separate order, referred the matter to the Office of Administrative Hearings for a contested case proceeding.[4] That Office assigned Administrative Law (ALJ) Judge Richard C. Luis to hear the case.

On August 1, 2008, Xcel applied for a Site Permit, authorizing the proposed location for the proposed extended power uprate.[5] The Commission assigned this matter to Docket No. E-002/CN-08-690.

On August 15, 2008, the Commission issued an Order accepting the Site Permit Application as complete, referring the site permit matter to the Office of Administrative Hearings for a contested case proceeding.[6] That Office assigned ALJ Luis to hear this case as well.

In its August 15 order the Commission also authorized the Energy Facilities Permitting (EFP) staff of the Minnesota Department of Commerce's Office of Energy Security (OES) to initiate the full review process under Minn. Rules Chap. 7849. As part of this process, the EFP staff convened a public meeting for the three dockets to provide information, explain the staff's role in analyzing how the proposed projects might affect the environment, and solicit suggestions for establishing the scope of the staff's environmental analysis. The Commission later authorized the formation of an advisory task force of citizens to work with EFP staff to help determine the appropriate scope of the environmental analysis.[7]

II. The Parties and their Representatives

The following parties filed testimony or memoranda in this case:

- Northern States Power d/b/a Xcel Energy (Xcel), an investor-owned regulated utility represented by B. Andrew Brown and Sarah J. Kerbeshian, Attorneys at Law, Dorsey and Whitney, LLP.

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[3] The NRC defines an "independent spent fuel storage installation" as a complex designed and constructed for the interim storage of, among other things, spent nuclear fuel. 10 C.F.R. §72.3. The term "independent" distinguishes such storage facilities from storage pools that are part of a nuclear reactor plant.

[4] Exh. 105, Order Accepting Application as Substantially Complete Pending Supplemental Filing, this docket; Exh. 106, Notice and Order for Hearing, this docket.

[5] Exh. 107, Site Permit Application.

[6] Exh. 109, Order Accepting Site Permit Application.

[7] Exh. 114, Order Authorizing Formation of Advisory Task Force (October 10, 2008), issued pursuant to Minn. Stat. § 216E.09, subd. 1, and Minn. Rules, part 7849.7100, subp. 3.

- The Office of Energy Security (OES) of the Minnesota Department of Commerce, represented by Julia Anderson, Assistant Attorney General (addressing Docket Nos. E-002/CN-08-509 and CN-08-510).

- OES Energy Facilities Planning (EFP) Division, represented by Robert Roche, Assistant Attorney General (addressing Docket No. E-002/GS-08-690).

- The Prairie Island Indian Community (the Community), a federally-recognized Native American tribal government with approximately 250 members living within three miles of the plant. The Community is represented by David Aafedt, Attorney at Law, Winthrop & Weinstine, P.A., and Philip R. Mahowald, the Community's General Counsel (addressing Docket Nos. E-002/CN-08-509 and GS-08-690).

- The City of Red Wing (Red Wing), represented by Thomas P. Harlan, Attorney at Law, Madigan, Dahl & Harlan, P.A.

- Gerdau Ameristeel Corporation and Marathon Petroleum Company, LLC (collectively, Xcel Large Industrials or XLI), two industrial firms that consume a large amount of electric energy. XLI is represented by Andrew P Moratzka, Attorney at Law, MacKall, Crouse & Moore, PLC.

In addition, the ALJ received comments from two entities that did not intervene as parties in these cases:

- The Minnesota Chamber of Commerce, represented by David Olson, president.

- The Prairie Island Nuclear Generating Plant Study Group (Study Group), a collection of citizens, including members of the Advisory Task Force appointed to comment on the scope of environmental review of the nuclear uprate and nuclear cask increase who continued to meet after the completion of their formal report. The Study Group is represented by Paula Goodman Maccabee, Attorney at Law, Just Change Consulting.

III. Proceedings before the Administrative Law Judge

The ALJ consolidated the three dockets for purposes of contested case proceedings.[8] The ALJ issued prehearing orders establishing deadlines for providing public notice, for convening public hearings, for filing written testimony and for the evidentiary hearings.

On November 18, 2008, the OES issued an order establishing the appropriate scope of the environmental review it would conduct (Scoping Decision).[9] In particular, OES elected to prepare a single Environmental Impact Statement pursuant to Minn. Rules, part 7849.7100, addressing the environmental consequences of all three dockets. OES issued its draft Environmental Impact Statement on March 16, 2009.

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[8] ALJ's First Prehearing Order at ¶ 5 (Oct. 3, 2008).

[9] Exh. 115, Scoping Decision.

On December 1, 2008, the *State Register* published a Notice of Filing, Public Comment Period and Public Meeting. This Notice contained information on these dockets and informed the public about methods of commenting on the proceeding.[10] On April 9, 2009, the OES issued a Notice of Public Hearings that was then published in the *Saint Paul Pioneer Press*, the *Ellsworth Pierce County Herald*, the *Hastings Star Gazette*, the *Lake City Graphic*, the *Red Wing Republican Eagle*, and the state's *Environmental Quality Board Monitor*, and mailed to people who had requested to be included in the contact lists for these dockets. On May 14, the ALJ convened public hearings on these matters in the cities of Red Wing and Welch, receiving both oral and written statements from the public.

Parties filed direct, rebuttal, and surrebuttal testimony in writing and the ALJ held evidentiary hearings in St. Paul from June 8 – 12, and again on June 29. The parties filed initial and reply post-hearing briefs and proposed findings and conclusions. The Study Group offered advisory briefs. In addition, various parties proposed supplementing the record with evidence that was not presented at the hearings, including the following:

- OES filed its final Environmental Impact Statement.
- The Study Group offered supplemental evidence.
- Xcel offered two affidavits to respond to late-filed evidence provided by the Community.
- The Community asked that the record incorporate the Department of Health's revised Environmental Monitoring Report 2007-2008 – reporting the levels of various potential health hazards around Xcel's Monticello and Prairie Island nuclear generators -- when the report became available.

On October 21, 2009, the ALJ issued his report. He accepted various late-filed documents into the record and recommended accepting the Environmental Monitoring Report when it became available. On the basis of the existing record, the ALJ recommended that the Commission issue to Xcel a Certificate of Need and Site Permit for increasing the generating capacity of the Prairie Island Nuclear Generating Plant, as well as a Certificate of Need for expansion of the dry cask spent fuel storage facility at the plant. But he made these recommendations subject to the following conditions:

- As part of its annual compliance filing on nuclear waste management,[11] Xcel would file an emergency response plan, including a statement as to Xcel's reliance on outside entities – such as the City of Red Wing – and their resources.

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[10] Ex. 118, Notice of Filing, Public Comment Period and Public Meeting as published in *State Register* at 33 SR 977.

[11] See *In the Matter of a Certificate of Need for Construction of an Independent Spent Fuel Storage Installation*, Docket No. E-002/CN-91-19.

- Xcel would expand its practice of monitoring the groundwater around the Prairie Island Plant for increased levels of tritium -- a radioactive form of hydrogen that is a byproduct of the plant's operation, and that can be harmful if ingested in sufficient quantities.

- Xcel would study how the plant's discharge of warm water into the Mississippi River affects the formation of ice on Lake Pepin, downstream of the plant.

- During any construction, Xcel would adhere to its "Excavation and Trenching Controls" to protect archeological and historic resources.

IV. Proceedings Before the Commission

On October 22, 2009, the Director of the OES issued an order finding that OES's final Environmental Impact Statement adequately addressed the significant environmental issues and alternatives identified in the Scoping Decision developed pursuant to Minn. Rules, part 4410.2100. And on October 27, the Director issued an additional order finding that the design and operation of the spent fuel storage facility are adequate to guard against prohibited groundwater contamination.

By November 5, 2009, the Commission had received exceptions to the ALJ's report from the City of Red Wing, the Community, the OES, and Xcel, as well as an advisory brief from the Study Group. As part of its exceptions Xcel 1) attached the Department of Health's revised Environmental Monitoring Report 2007-2008, and 2) stated that it now intended to seek to increase the generating capacity of Prairie Island Unit I in 2014 rather than 2012.

On November 12, 2009, the Commission heard argument from the City of Red Wing, the Community, the OES, the Study Group, Xcel, and members of the public. The Commission also received an explanation from George Johns, supervisor of the Radioactive Materials Unit of the Minnesota Department of Health, regarding recent revisions to the Department's Environmental Monitoring Report 2007-2008. After inviting questions from the parties, the Commission took administrative notice of the revised report.[12] The record closed for purposes of Minn. Stat. § 14.61, subd. 2.

Having reviewed the entire record herein, and having heard the arguments of all parties, the Commission makes the following findings, conclusions, and order.

FINDINGS AND CONCLUSIONS

I. FACTUAL BACKGROUND

Xcel owns and operates the Prairie Island Nuclear Generating Plant, an 1,100-megawatt, nuclear-powered pressurized water reactor electric generating plant located within the City of Red Wing, in Goodhue County, Minnesota.[13] In the 1970s Xcel received licenses to operate Units 1 and 2 until

[12] Transcript of November 12, 2009, at 9 – 13.

[13] While Xcel previously retained another firm to operate the plant, Xcel now operates the plant itself. See Exh. 100, CN Application at 1-3, 3-1; Exh. 128 (Xcel witness Bomberger Direct) at 3-4.

2013 and 2014, respectively, from the federal Nuclear Regulatory Commission (NRC). The NRC regulates the use of nuclear materials.[14]

Similar to fossil fuel-powered generating plants, a nuclear plant generates electricity by heating water to form steam which then turns the blades of a turbine. But unlike a fossil fuel plant, a nuclear plant derives heat from a nuclear reaction involving the chemical element uranium.

To fuel its nuclear plants, Xcel buys arrays of hollow steel rods filled with pellets of uranium. The rate of the nuclear reaction depends upon the amount of uranium, and on Xcel's operations. Xcel can reduce the rate of the nuclear reaction (and reduce the amount of electricity generated) by moving materials that absorb radiation closer to these rods; conversely, Xcel can accelerate the reaction by withdrawing the radiation-absorbing materials. In addition, the reaction gradually slows over time as more of the rods' uranium decays into other elements. Consequently every 18 months or so Xcel stops the reaction at one of the units to replace some of the fuel arrays.

While the spent fuel may not emit radiation at a sufficient rate to power a commercial electric generator, it continues to emit sufficient radiation to be a potential health hazard. Xcel retains the spent fuel arrays in a water pool for approximately 10 years as their radioactivity diminishes. Thereafter Xcel puts the arrays into dry casks and stores them in the adjoining Independent Spent Fuel Storage Installation.[15]

Located just west of the Prairie Island Plant cooling towers, this installation consists of a lighted, monitored 250,000 square foot area surrounded by two fences and a 17-foot earthen berm. Xcel installs storage casks within this area on two reinforced concrete pads. These pads, measuring 216 feet long, 36 feet wide and 3 feet thick, provide support for up to 48 casks.

Minnesota law requires Xcel to remove the spent fuel from the site as soon as another storage site becomes available.[16] Xcel has been making payments to the Nuclear Waste Fund administered by the United States Department of Energy (DOE) for the construction of a permanent storage facility; Xcel is currently in litigation with the DOE over delays in establishing such a site.

Xcel has already received federal authorization to place 48 casks at the Prairie Island storage installation, and state authorization for 29 casks. Xcel has filled 25 of these casks to date. Xcel predicts that the capacity of the 29 authorized casks, combined with the capacity of the Prairie Island pools, will be sufficient to store the spent fuel generated at the Prairie Island Plant through the end of the current operating licenses in 2013 and 2014. If no other storage facility becomes available by the time Xcel decommissions the Prairie Island Plant, Xcel anticipates adding another 34 casks to the storage facility to hold the remaining spent fuel and other waste. (Neither the 29 previously authorized casks nor the 34 "decommissioning" casks are the subject of the current proceeding.)

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[14] See generally Chapter 10 of the Code of Federal Regulations.

[15] Exh. 100, CN Application at 3-7.

[16] See Minn. Stat. §§ 116C.777 (also prohibiting transporting spent fuel to Xcel's nuclear generating plant at Monticello), 116C.83, subd. 4(a); *In the Matter of the Certificate of Need for Construction of an Independent Spent Fuel Storage Installation*, Docket No. E-002/CN-91-19.

On April 15, 2008, Xcel asked the NRC to extend the operating licenses for each unit for an additional 20 years.[17] Xcel also intends to seek a variety of related regulatory approvals, some of which are discussed below.

II. XCEL'S PROPOSALS

The current proceeding addresses two plans regarding the Prairie Island Plant for which Xcel requires Commission approval: Xcel proposes to increase the storage capacity of the Independent Spent Fuel Storage Installation. In addition, Xcel proposes to increase the Prairie Island Plant's generating capacity.

A. Expansion of spent fuel storage capacity

As part of its proposal to extend the life of the Prairie Island Plant for an additional 20 years,[18] Xcel proposes to increase the storage capacity of the Independent Spent Fuel Storage Installation by up to 35 casks, from 29 to 64. These casks would have sufficient capacity to hold the additional spent fuel that the Prairie Island Plant would generate if Units 1 and 2 continued to operate until 2033 and 2034, respectively.[19]

Xcel states that the installation currently has enough space on its concrete pads to accommodate 48 casks, sufficient to continue operations through 2022. But to support the additional 16 casks, as well as any anticipated casks required for eventual decommissioning, Xcel proposes to build two more reinforced concrete pads in 2020 adjoining the existing pads. Each new pad would measure 216 feet long, 18 feet wide and 3 feet thick. This project would involve excavating the pad area and digging trenches for concrete ductbanks and associated electrical conduit.

Xcel will need NRC authorization for various aspects of its proposal. Xcel has already requested authorization to begin using a newer type of storage cask. Xcel will also ask the NRC to renew Xcel's license to operate its Independent Spent Fuel Storage Installation; Xcel's current license expires in 2013. And eventually Xcel will need NRC approval in order to expand the capacity of the Independent Spent Fuel Storage Installation beyond 48 casks.

B. Plant Uprate

Xcel also proposes to increase the generating capacity of Unit 1 and Unit 2 by 82 MW each, for a combined increase of 164 MW.

Decades of reactor safety technology improvements, plant performance feedback, and improved fuel and core designs have shown how reactors such as the Prairie Island Plant can safely generate more power than the NRC previously thought possible. Nuclear power plants throughout the

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[17] Exh. 100, CN Application at 1-4, 1-5. The NRC has yet to rule on Xcel's request.

[18] 4 Trans. 109-110 (Xcel witness Engelking).

[19] Ex. 100, CN Application.

United States have sought NRC approval to increase the power generation limits stated in their NRC licenses. As of April 2008, the NRC had completed its review of 118 power uprate projects.[20]

As explained further in the Site Permit, attached, Xcel proposes to expand the generating capacity of the Prairie Island Plant by 1) acquiring fuel assemblies with thicker rods of uranium, thereby permitting the generation of greater heat and therefore more steam to turn the turbines, and 2) improving its plant to convert steam into electric energy more efficiently.[21] Xcel estimates that it would cost $322 million to implement this uprate proposal.

Xcel had initially proposed to uprate Units 1 and 2 during refueling outages scheduled in 2012 and 2015, respectively.[22] Expected delays in securing federal regulatory approval, among other things, have prompted Xcel to propose delaying the Unit 1 uprate until its next scheduled outage in 2014.[23]

As part of its Site Permit, Xcel agrees to abide by the various substantive and procedural conditions set forth in the OES's draft Site Permit, which generally include the ALJ's Recommendations.

III. LEGAL BACKGROUND

A. Overview

Xcel must demonstrate need for both the additional generating capacity represented by the proposed extended power uprate and the additional storage capacity represented by the proposed addition to the spent fuel storage facility. Both projects require certificates of need. The application for a certificate of need for the nuclear uprate is governed by Minn. Stat. §§ 116C.83 and 216B.243 and Minnesota Rules, Chapter 7849. The application for a certificate of need for the storage expansion is governed by Minn. Stat. § 216B.243 and Minnesota Rules Chapter 7855.

The proposed extended power uprate also requires a site permit. The site permit application is governed by Minn. Stat. § 116C.83, Minn. Stat. Chapter 216E, and Minnesota Rules Chapter 7850.

In evaluating an application for a Certificate of Need or a Site Permit, the Commission receives assistance from other state agencies. Where material facts are in dispute, for example, the Commission refers cases to the Office of Administrative Hearings to conduct a contested case proceeding.[24] And various rules provide for the Department of Commerce to prepare an environmental review or environmental impact statement regarding these proposals.

B. Certificate of Need

Anyone seeking to build a "large energy facility" must first obtain a Certificate of Need from this

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[20] Ex. 100, CN Application at 3B-28.

[21] *Id.* at 2-3, 3B-30 to -31.

[22] *Id.*, 1-9, 3B-29.

[23] Xcel Exceptions.

[24] See, for example, Minn. Rules, part 7829.1000.

Commission pursuant to Minn. Stat. § 216B.243 and related rules. The term "large energy facility" encompasses, among other things,

- A new electric power generating plant, combination of new plants, or modification to existing plants creating the capacity to generate an additional 50 megawatts (MW) or more,[25] and
- A facility to store nuclear waste,[26] including the expansion[27] of an existing facility's capacity by 20% or more.[28]

Because Xcel seeks to increase the Prairie Island Plant's generating capacity by 164 MW, and to increase the number of casks at its storage facility from 29 to 64, Xcel must obtain Certificates of Need for both the uprate and waste storage projects before proceeding.

Minn. Stat. § 216B.243, subds. 3, 3a and 3b, state as follows:

> *Subd. 3. Showing required for construction. No proposed large energy facility shall be certified for construction unless the applicant can show that demand for electricity cannot be met more cost effectively through energy conservation and load-management measures and unless the applicant has otherwise justified its need. In assessing need, the commission shall evaluate:*
>
> *(1) the accuracy of the long-range energy demand forecasts on which the necessity for the facility is based;*
>
> *(2) the effect of existing or possible energy conservation programs under sections 216C.05 to 216C.30 and this section or other federal or state legislation on long-term energy demand;*
>
> *(3) the relationship of the proposed facility to overall state energy needs, as described in the most recent state energy policy and conservation report prepared under section 216C.18, or, in the case of a high-voltage transmission line, the relationship of the proposed line to regional energy needs, as presented in the transmission plan submitted under section 216B.2425;*
>
> *(4) promotional activities that may have given rise to the demand for this facility;*
>
> *(5) benefits of this facility, including its uses to protect or enhance environmental quality, and to increase reliability of energy supply in Minnesota and the region;*

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[25] Minn. Stat. § 216B.2421, subd. 2(1); Minn. Rules, part 7849.0030. By statute, a Certificate of Need is required for new generation plant with a capacity of 50,000 kilowatts, which equals 50 MW.

[26] Minn. Stat. §§ 116C.83, subd. 2; 216B.2421, subd. 2(8).

[27] Minn. Stat. § 116C.83, subd. 1 (granting Xcel's sufficient dry cask storage capacity at the Prairie Island Plant to permit continued operations until 2014); see also § 116C.77 (Legislative authorization for a Prairie Island storage facility).

[28] Minn. Rules, part 7855.0030, subp. 1(I); see also Minn. Stat. §§ 116C.83, subd. 2; 216B.2421, subd. 2(8); 216B.243.

(6) possible alternatives for satisfying the energy demand or transmission needs, including but not limited to potential for increased efficiency and upgrading of existing energy generation and transmission facilities, load-management programs, and distributed generation;

(7) the policies, rules, and regulations of other state and federal agencies and local governments;

(8) any feasible combination of energy conservation improvements, required under section 216B.241, that can (i) replace part or all of the energy to be provided by the proposed facility, and (ii) compete with it economically;

(9) with respect to a high-voltage transmission line, the benefits of enhanced regional reliability, access, or deliverability to the extent these factors improve the robustness of the transmission system or lower costs for electric consumers in Minnesota;

(10) whether the applicant or applicants are in compliance with applicable provisions of sections 216B.1691 and 216B.2425, subdivision 7, and have filed or will file by a date certain an application for certificate of need under this section or for certification as a priority electric transmission project under section 216B.2425 for any transmission facilities or upgrades identified under section 216B.2425, subdivision 7;

(11) whether the applicant has made the demonstrations required under subdivision 3a; and

(12) if the applicant is proposing a nonrenewable generating plant, the applicant's assessment of the risk of environmental costs and regulation on that proposed facility over the expected useful life of the plant, including a proposed means of allocating costs associated with that risk.

Subd. 3a. Use of renewable resource. The commission may not issue a certificate of need under this section for a large energy facility that generates electric power by means of a nonrenewable energy source, or that transmits electric power generated by means of a nonrenewable energy source, unless the applicant for the certificate has demonstrated to the commission's satisfaction that it has explored the possibility of generating power by means of renewable energy sources and has demonstrated that the alternative selected is less expensive (including environmental costs) than power generated by a renewable energy source. For purposes of this subdivision, "renewable energy source" includes hydro, wind, solar, and geothermal energy and the use of trees or other vegetation as fuel.

Subd. 3b. Nuclear power plant; new construction prohibited; relicensing.

(a) The commission may not issue a certificate of need for the construction of a new nuclear-powered electric generating plant.

(b) Any certificate of need for additional storage of spent nuclear fuel for a facility seeking a license extension shall address the impacts of continued operations over the period for which approval is sought.

Under Minn. Stat. § 216B.243, subd. 3 (1), an applicant demonstrates need for a proposed facility by, among other things, forecasting the amount of electricity customers will demand. But the Legislature has adopted policies designed to influence how a utility meets its customers' demands. In particular –

- The Renewable Energy Standard (RES) provides for Minnesota utilities to acquire an increased share of their electricity from renewable sources, and specifically provides for Xcel to serve 30% of its retail customer needs in Minnesota with energy from renewable sources by 2025.[29] The Legislature encourages utilities to acquire some or all of this energy from small, locally-owned generators using renewable energy sources, called Community-Based Energy Developments (C-BED).[30]

- In addition, the law requires utilities to adopt conservation programs designed to displace 1 - 1.5% of the energy their customers would otherwise use.[31]

However, the statute also permits utilities to seek to delay or vary the requirements of these laws if implementation would prove to be impossible or unduly expensive.[32]

Ultimately, the Commission acts on an application for a Certificate of Need application by approving it, approving it with conditions, or rejecting it.[33]

Different rules explain how these standards apply to different types of large energy facilities. Minn. Rules Chapter 7849 applies to large electric generating facilities (among other things), Chapter 7855 applies to nuclear waste storage facilities (among other things), and the two rule chapters prescribe slightly different factors for the Commission's consideration, as discussed further below.

C. Site Permit

No one may build an electric power generating plant, or combination of plants, with the capacity to generate 50 MW or more,[34] or increase the generating capacity of such plants[35] by more than 10% or 100 MW[36] except on a site approved by the Commission.[37] Because Xcel seeks to increase the generating capacity of its Prairie Island Plant by 164 MW, Xcel requires a Site Permit.

In evaluating a Site Permit application, the Commission is guided by the state's goals to conserve resources, minimize environmental impacts, minimize human settlement and other land use

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[29] Minn. Stat. § 216B.1691.

[30] Minn. Stat. § 216B.1612, subd. 5.

[31] Minn. Stat. §§ 216B.2401, 216B.241.

[32] Minn. Stat. §§ 216B.1612, subd. 5(2a), 216B.2401, 216B.241.

[33] Minn Stat. §§ 216B.243, subd. 5; 216E.03, subd. 10(b).

[34] Notwithstanding ALJ's Report, Finding 302, a Site Permit is required for plants capable of generating 50 MW or more. Minn. Stat. §§ 216B.2421, subd. 2(1), 216E.01, subd. 5.

[35] Minn. Rules, part 7850.1300, subp. 3.C.

[36] Minn. Rules, part 7850.1500, subp. 1.C(2).

[37] Minn. Stat. § 216E.03, subd. 1; Minn. Rules, part 7850.1300, subp. 1.

conflicts, and ensure the state's electric energy security through efficient, cost-effective power supply and electric transmission infrastructure,[38] in addition to the following:

> *(1) evaluation of research and investigations relating to the effects on land, water and air resources of large electric power generating plants and high-voltage transmission lines and the effects of water and air discharges and electric and magnetic fields resulting from such facilities on public health and welfare, vegetation, animals, materials and aesthetic values, including baseline studies, predictive modeling, and evaluation of new or improved methods for minimizing adverse impacts of water and air discharges and other matters pertaining to the effects of power plants on the water and air environment;*
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> *(2) environmental evaluation of sites and routes proposed for future development and expansion and their relationship to the land, water, air and human resources of the state;*
>
> *(3) evaluation of the effects of new electric power generation and transmission technologies and systems related to power plants designed to minimize adverse environmental effects;*
>
> *(4) evaluation of the potential for beneficial uses of waste energy from proposed large electric power generating plants;*
>
> *(5) analysis of the direct and indirect economic impact of proposed sites and routes including, but not limited to, productive agricultural land lost or impaired;*
>
> *(6) evaluation of adverse direct and indirect environmental effects that cannot be avoided should the proposed site and route be accepted;*
>
> *(7) evaluation of alternatives to the applicant's proposed site or route proposed pursuant to subdivisions 1 and 2;*
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> *(8) evaluation of potential routes that would use or parallel existing railroad and highway rights-of-way;*
>
> *(9) evaluation of governmental survey lines and other natural division lines of agricultural land so as to minimize interference with agricultural operations;*
>
> *(10) evaluation of the future needs for additional high-voltage transmission lines in the same general area as any proposed route, and the advisability of ordering the construction of structures capable of expansion in transmission capacity through multiple circuiting or design modifications;*
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> *(11) evaluation of irreversible and irretrievable commitments of resources should the proposed site or route be approved; and*
>
> *(12) when appropriate, consideration of problems raised by other state and federal agencies and local entities.*[39]

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[38] Minn. Stat. § 216E.03, subd. 7(a); Minn. Rules, part 7850.1100.

[39] Minn. Stat. § 216E.03, subd. 7(b).

An applicant must demonstrate that its proposed expansion would comply with all relevant environmental review and environmental protection laws.[40] The Commissioner of the Department of Commerce must prepare an Environmental Impact Statement on each proposed large electric generating plant, studying any site proposed by an applicant and other sites as the Commission deems necessary.[41] The Commission must then rule on whether the final EIS was prepared in compliance with relevant procedures, adequately addresses the issues and alternatives identified in the Scoping Decision, and responds to timely substantive comments received in response to the draft EIS.[42]

The Commission may grant a Site Permit subject to conditions.[43] However, the Commission may not designate a site that conflicts with state agency rules.[44]

IV. Certificate of Need for Nuclear Waste Storage Facility

The Commission will first take up the issue of the need for additional storage at the Prairie Island Independent Spent Fuel Storage Installation. In the absence of this approval, Xcel would shortly need to discontinue operations at its Prairie Island Plant due to a lack of storage capacity for its spent fuel, thereby rendering moot any analysis of expanding Prairie Island's generating capacity.

In determining whether to grant the requested Certificate of Need the Commission considers the criteria set forth in Minn. Rules, part 7855.0120:

> *A. the probable direct or indirect result of denial would be an adverse effect upon the future adequacy, reliability, safety, or efficiency of energy supply to the applicant, to the applicant's customers, or to the people of Minnesota and neighboring states, considering:*
>
> *(1) the accuracy of the applicant's forecast of demand for the energy or service that would be supplied by the proposed facility;*
>
> *(2) the effects of existing or expected conservation programs of the applicant, the state government, or the federal government;*
>
> *(3) the effects of promotional practices in creating a need for the proposed facility, particularly promotional practices that have occurred since 1974;*
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> *(4) the ability of current facilities and planned facilities not requiring certificates of need to meet the future demand; and*
>
> *(5) the effect of the proposed facility, or a suitable modification thereof, in making efficient use of resources;*

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[40] Minn. Stat. § 116C.83, subd. 6(a) (citing Minn. Stat. Chap. 115, 115B, 116, 116B, 116C, 116D, and 216B, and rules associated with those chapters, but excluding statutes and rules that apply specifically to a radioactive waste management facility as defined in § 116C.71, subd 7); Minn. Rules, part 7850.1200 (citing chap. 4410 and parts 7849.1000 - .2100).

[41] Minn. Stat. § 216E.03, subd. 5.

[42] Minn. Rules, parts 7850.2500, subp. 10; 7850.2700, subp. 2.

[43] *Id,* subd. 10(a).

[44] *Id,* subd. 7(d).

B. a more reasonable and prudent alternative to the proposed facility has not been demonstrated by a preponderance of the evidence on the record by parties or persons other than the applicant, considering:

(1) the appropriateness of the size, the type, and the timing of the proposed facility compared to those of reasonable alternatives;

(2) the cost of the proposed facility and the cost of energy to be supplied by the proposed facility compared to the costs of reasonable alternatives and the cost of energy that would be supplied by reasonable alternatives;

(3) the effects of the proposed facility upon the natural and socioeconomic environments compared to the effects of reasonable alternatives; and

(4) the expected reliability of the proposed facility compared to the expected reliability of reasonable alternatives;

C. it has been demonstrated 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, considering:

(1) the relationship of the proposed facility, or a suitable modification thereof, to overall state energy needs;

(2) the effects of the proposed facility, or a suitable modification thereof, upon the natural and socioeconomic environments compared to the effects of not building the facility;

(3) the effects of the proposed facility, or a suitable modification thereof, in inducing future development; and

(4) the socially beneficial uses of the output of the proposed facility, or a suitable modification thereof, including its uses to protect or enhance environmental quality; and

D. it has not been demonstrated on the record that the design, construction, operation, or retirement of the proposed facility will fail to comply with those relevant policies, rules, and regulations of other state and federal agencies and local governments.

The Commission's decision is guided by the Certificate of Need criteria – even if this might lead to the shutdown of a nuclear generating facility[45] – although the Commission may exclude criteria inapplicable to a given project.[46] The Commission may also consider an applicant's past performance and current compliance with Minnesota's renewable energy objectives and standards.[47] And the Commission considers only those alternatives proposed before the close of the public

[45] Minn. Stat. § 116C.83, subd. 2; compare Minn. Rules, part 7855.0100 ("In the case of an application for a certificate of need for an expansion of a nuclear waste storage ... 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") which predates the statute.

[46] Minn. Rules, part 7855.0100.

[47] Minn. Stat. § 116C.83, subd. 2 (citing § 216B.1691).

hearings and for which there exists substantial evidence on the record with respect to each of the criteria listed above.[48]

Xcel may not seek to demonstrate need for expanding the capacity of the spent fuel storage facility at Prairie Island on the basis of spent nuclear fuel from any other facility.[49] And Xcel's proposal must reflect a design to facilitate shipping the waste out of state without interrupting the plant's operation.[50]

Xcel must demonstrate that its proposed expansion would comply with all relevant environmental review and protection laws.[51] The Commissioner of Minnesota's Department of Commerce must arrange for the preparation of an Environmental Impact Statement (EIS) that complies with Minn. Stat. Chap. 116D, and make a finding that he is satisfied the EIS adequately addresses the environmental impact of the proposed expansion of storage facilities.[52] In particular, Xcel may not proceed with its plans until the Commissioner makes a finding that Xcel's proposal is designed to guard against increasing the concentration of radioactive elements in the groundwater above specified levels.[53]

Any Certificate the Commission might grant Xcel for additional nuclear waste storage would not become effective until next June 1, in order to provide the Legislature with an opportunity to review the decision.[54]

The Commission's analysis is as follows:

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

(1) the accuracy of the applicant's forecast of demand for the energy or service that would be supplied by the proposed facility;
(2) the effects of existing or expected conservation programs of the applicant, the state government, or the federal government;
(3) the effects of promotional practices in creating a need for the proposed facility, particularly promotional practices that have occurred since 1974;

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[48] Minn. Rules, part 7850.0110.

[49] Minn. Stat. § 116C.83, subd. 4(b).

[50] Minn. Stat. § 116C.83, subd. 4(a).

[51] Minn. Stat. § 116C.83, subd. 6 (citing Minn. Stat. Chap. 115, 115B, 116, 116B, 116C, 116D, and 216B, and rules associated with those chapters, but excluding statutes and rules that apply specifically to a radioactive waste management facility as defined in § 116C.71, subd 7.)

[52] Minn. Stat. § 116C.83, subd. 6(b).

[53] Minn. Stat. § 116C.83, subds. 5 (citing § 116C.76) and 6(b).

[54] Minn. Stat. § 116C.83, subd. 3.

(4) the ability of current facilities and planned facilities not requiring certificates of need to meet the future demand; and

(5) the effect of the proposed facility, or a suitable modification thereof, in making efficient use of resources

Both Xcel and OES prepared forecasts of the amount of energy Xcel customers will consume, and the peak rate at which Xcel's customers will demand energy. Xcel began with the 15-year forecast from Xcel's most recent resource plan.[55] (Minnesota's energy utilities periodically file resource plans for Commission review; these plans describe the measures the utility is taking to anticipate customer demand and to identify the most prudent combination of resources to meet that demand.[56]) Xcel then revised and re-revised the forecast to reflect newer data, including data about higher fuel and construction costs, a slowing economy, and Xcel's higher goals for promoting conservation.[57]

OES independently confirmed the reasonableness of Xcel's energy and demand forecast for the purposes of demonstrating need. OES suspects that refining Xcel's methodology would demonstrate additional demand for electricity, but concludes that this level of refinement would be superfluous because Xcel is able to demonstrate that its proposals are needed without that level of refinement.[58] Otherwise, no party challenged Xcel's or the OES's forecast methodology.[59]

Xcel claims, and OES confirms, that the analysis demonstrating the merits of maintaining Prairie Island's 1,100 MW of baseload capacity did not result from Xcel's promotional practices.[60]

Both OES and Xcel then used the Strategist Capacity Expansion computer model to identify an optimal mix of resources to meet the forecasted demand. They considered a variety of current and planned resources that do not require a Certificate of Need. In particular, OES directed its model to consider a variety of generators that rely on renewable sources of energy, as well as on distributed generation – that is, a collection of smaller generators distributed throughout Xcel's service area – as provided for in Minn. Stat. §§ 216B.2426 and 216B.169, subd. 1. Both OES's and Xcel's analyses demonstrated that renewing the operating license of the Prairie Island Plant for 20 years is the most cost-effective approach to serve customer demand.

The Community and the Study Group challenge this analysis. They note that since the time Xcel filed its initial application, Xcel has reduced its demand forecasts. For example, Xcel has reduced its forecasted demand for 2023 by 1,549 MW – more than the total capacity of the Prairie Island Plant with uprates.

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[55] Exh. 125 (Xcel reply comments from *In the Matter of Northern States Power Company d/b/a Xcel Energy's Application for Approval of its 2008-2022 Resource Plan*, Docket No. E-002/RP-07-1572).

[56] Minn. Stat. § 216B.2422.

[57] Exh. 121 (Xcel supplemental filing of March 20, 2009); ALJ's Report, Finding 85.

[58] Exh. 506 (OES witness Ham Direct) at 2, 4; ALJ's Report, Finding 89.

[59] ALJ's Report, Finding 90.

[60] Exh. 100, CN Application at 9-7; Exh. 514, (OES witness Rakow direct) at 40-41; ALJ's Report, Finding 94.

The ALJ found no conflict between the observations of the Community and the Study Group, on the one hand, and the analysis of the OES and Xcel on the other. The record demonstrates that demand for power in Xcel's service area – especially baseload power – will most likely continue to grow, albeit less quickly than initially anticipated. But more significantly, demand growth is not the sole basis for demonstrating need. As discussed further below, the Prairie Island Plant provides benefits for Xcel's generation portfolio beyond its 1,100 MW generating capacity.

On the basis of this analysis, the ALJ concluded,

> Xcel has shown that continued operation of the Prairie Island Plant provides significant financial and environmental benefits to Xcel's customers. Denial of the requested Certificate of Need for additional storage would require a shutdown of the Prairie Island Plant in 2013-2014. Such a shutdown would result in a less economically efficient regional power system and an increase in adverse impacts on the environment. Xcel has demonstrated that denial of the requested Certificate of Need for additional storage would adversely affect the future adequacy, reliability, safety and efficiency of the energy supply to Xcel, its customers, and the people of Minnesota and neighboring states.[61]

The Commission concurs.

B. A more reasonable and prudent alternative to the proposed facility has not been demonstrated by a preponderance of the evidence on the record by parties or persons other than the applicant, considering:

(1) the appropriateness of the size, the type, and the timing of the proposed facility compared to those of reasonable alternatives;
(2) the cost of the proposed facility and the cost of energy to be supplied by the proposed facility compared to the costs of reasonable alternatives and the cost of energy that would be supplied by reasonable alternatives;
(3) the effects of the proposed facility upon the natural and socioeconomic environments compared to the effects of reasonable alternatives; and
(4) the expected reliability of the proposed facility compared to the expected reliability of reasonable alternatives.

In evaluating this matter the Commission is guided by the record, and especially the Environmental Impact Statement prepared by OES to analyze both Xcel's proposal to add new waste fuel storage capacity and the proposal to add more generating capacity. As previously noted, the Director of OES found that the final EIS adequately addressed the significant environmental issues and alternatives identified in the Scoping Decision developed pursuant to Minn. Rules, part 4410.2100. In addition, the Director found that the design and operation of the spent fuel storage facility are adequate to guard against prohibited groundwater contamination.

[61] ALJ's Report, Finding 103.

As part of this analysis, the ALJ considered alternatives to extending the operating life of the Prairie Island Plant as well as alternatives to storing more spent fuel in dry casks in the Independent Spent Fuel Storage Installation.

First, both OES and Xcel explored a variety of ways Xcel might replace the 1,100 MW and 8.5 million MWh that the Prairie Island Plant currently provides. As analyzed by the Strategist model, none of the various alternatives considered – including fossil fueled alternatives, renewably fueled alternatives, and combinations – approaches the cost-effectiveness of Xcel's proposal to extend the life of the Prairie Island Plant.

The Study Group argues that Xcel has failed to demonstrate that all the alternatives that rely on renewable sources of energy are "not in the public interest" as required by Minn. Stat. § 216B.2422, subd. 4. The Study Group argues that public policy favors increasing the state's reliance on community-based and rural wind energy development.[62] In particular, the Study Group favors replacing the nuclear generators at Prairie Island with gas-powered generators, to be used to back up the supply of electricity from new wind turbines and perhaps a fleet of smaller generators powered from renewable sources, dispersed throughout Xcel's service area (dispersed renewable generation).

The Study Group concedes that alternative proposals would cost more that Xcel's estimate of the cost to extend the operating life of the Prairie Island Plant. But the Study Group argues that Xcel's analysis fails to incorporate all the costs associated with such an extension. They emphasize the cost of decommissioning the Prairie Island Plant, the cost of storing and securing spent fuel, potential health threats from the radiation associated with that storage, potential pollution from the storage facility, and the anxiety experienced by at least some of those who live near the plant and the storage facility.

Nevertheless, Xcel argues that it has in place appropriate mechanisms and procedures for managing the risks of radiation within the plant. And for most people outside the plant gates, the additional radiation exposure is nearly indistinguishable from the levels of radiation that occur in nature (background levels of radiation).
Moreover, the record demonstrates that the Prairie Island Plant has advantages that more than compensate for its disadvantages. In particular, the record demonstrates that the Prairie Island Plant provides a high level of reliability with low operating costs. Thus, while Xcel's nuclear reactors represent just 15% of its generating capacity, they provide 28% of the energy consumed by Xcel's retail customers.

In addition, these reactors do not emit greenhouse gases, particulates, or other emissions typical of fossil fueled generators. Not only is this beneficial to human health and the environment, but it hedges the financial risks Xcel and its ratepayers face from fluctuations in the price of fossil fuels and the future costs of carbon regulation.

Finally, Xcel analyzed a variety of alternatives to storing nuclear waste in dry casks in the Independent Spent Fuel Storage Installation: reprocessing or otherwise organizing the spent fuel to reduce the volume of waste; finding other storage locations, storing the fuel in means

[62] Minn. Stat. §§ 216B.1612, 216C.39.

other than dry casks. Xcel deemed none of these alternatives to be both preferable and currently feasible, and no party disputed this conclusion.

The City of Red Wing and the Study Group argued that OES's and Xcel's analyses fail to consider the cost of managing nuclear waste over an appropriately long period. But OES and Xcel observe that, whatever the outcome of the current case, Xcel will need to bear the cost of maintaining nuclear waste. There is little evidence that the cost of securing and monitoring 64 casks is substantially greater than the cost of securing and monitoring 29.

Moreover, they note that Xcel has already accrued a decommissioning trust fund to help defray these costs, and that courts have recognized Xcel's legal claim against the federal government for failure to take custody of the nuclear waste; funds from any resolution of this claim would become available for managing the costs of the waste.

On the basis of the foregoing arguments, the ALJ concluded that no party has demonstrated by a preponderance of the evidence in the record a more reasonable and prudent alternative to Xcel's proposal to expand the capacity of the Independent Spent Fuel Storage Installation. The Commission concurs.

C. It has been demonstrated 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, considering:

(1) the relationship of the proposed facility, or a suitable modification thereof, to overall state energy needs;
(2) the effects of the proposed facility, or a suitable modification thereof, upon the natural and socioeconomic environments compared to the effects of not building the facility;
(3) the effects of the proposed facility, or a suitable modification thereof, in inducing future development; and
(4) the socially beneficial uses of the output of the proposed facility, or a suitable modification thereof, including its uses to protect or enhance environmental quality

The ALJ found that the Prairie Island Plant generates up to 1,100 MW of power continuously for a period of 18 months or more, and that the plant's capacity is always in demand due to its high reliability and low operating costs. Again, while Xcel's nuclear generators at Prairie Island and Monticello provide only 15% of Xcel's generating capacity, they produce 28% of the electrical energy consumed by Xcel's customers in a five-state region.[63]

Because the record demonstrates that extending the life of the Prairie Island Plant is Xcel's least-cost alternative, the ALJ concluded that implementing Xcel's plan should be expected to keep the cost of electricity lower than otherwise, thereby inducing future development. To the extent that electricity from the Prairie Island Plant reduces reliance on polluting fossil fuel plants, the ALJ concluded that Prairie Island's output protects and enhances

[63] Exh. 1 (CN application) at 1-3.

environmental quality. Both the Chamber of Commerce and the XLI support maintaining the Prairie Island Plant as a source of inexpensive, reliable power.

The Commission concurs.

Yet parties raise a variety of concerns about the effects of nuclear generation on the natural and sociological environment. In particular, they express concern about potential groundwater contamination and potential emergencies at the storage facility or plant. These will be addressed in turn.

1. Concerns regarding hazards from radioactive elements in the groundwater.

The Community[64] and the Study Group express concern about the potentially hazardous effects of radioactive elements such as tritium found in extremely small concentrations in some groundwater in the vicinity of the plant.

Xcel monitors tritium levels in wells in and around the Prairie Island Plant as part of its federally-required Radiological Environmental Monitoring Program as well as a separate tritium monitoring program that it began in 1989. These programs have shown that tritium levels around the plant have been continually declining, with the exception of samples at two on-site wells, and that even these wells have never demonstrated tritium levels significantly higher than 10% of the limit allowable in drinking water.

Parties have suggested that fluctuations in tritium levels might result from Xcel's past practice of discharging water from its sump pump onto land adjoining the Prairie Island Plant. Xcel had suspended this practice, and has now agreed to discontinue it permanently.[65]

While the ALJ was not persuaded that the level of radioactive elements in the groundwater justifies withholding a Certificate of Need for the proposed facility, he found merit in some of the proposed testing and mitigation measures. These will be discussed further in the context of Xcel's Site Permit request.

2. Concerns regarding hazards from emergencies at the storage facility or plant.

The Nuclear Regulatory Commission directs nuclear power plant operators to file an Emergency Response Plan (ERP) as a condition of licensure.[66] The ERP sets forth how Xcel

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[64] The Community raised their concerns in the context of Docket Nos. E-002/CN-08-509 and GS-08-690; they are discussed here for ease of exposition.

[65] Xcel exceptions.

[66] Exh. 141.

and various units of government would respond in the event of an accident at the Prairie Island Plant or the storage installation[67] to suppress, contain and mitigate the incident.[68] The City of Red Wing contends that Xcel's proposal cannot fulfill the requirements of Minn. Rules, part 7855.0120(C), unless the Commission requires Xcel to provide a stream of $9,174,000 to Red Wing to support emergency response services. Absent these revenues, Red Wing claims that it will need to cut its public safety services and, as a result, the Emergency Response Plan for the Prairie Island Plant and storage installation will become ineffective.[69]

OES and Xcel oppose Red Wing's proposal on two grounds. They argue that the record does not support the claim that the incremental costs Red Wing incurs to serve the Prairie Island facilities exceed the incremental revenues Red Wing receives as a result of those facilities. And they argue that, for purposes of developing an Emergency Response Plan, Xcel is not compelled to rely solely on Red Wing's emergency response services.

First, without attempting to evaluate all of the budgetary challenges confronting Minnesota municipalities, OES and Xcel argue that the record regarding Prairie Island-related costs and Prairie Island-related revenues does not support Red Wing's request. The record does not demonstrate that implementing either of Xcel's proposals would cause Red Wing to incur more cost than it currently does.[70] On the other hand, the record reveals that Red Wing receives substantial Prairie Island-related revenues.

Xcel states that it will pay $4.2 million in property taxes to Red Wing in 2009, and that its property tax payments will grow to $9.2 million by 2017 if the proposed projects are implemented.[71] Red Wing will also receive $750,000 of Utility Valuation Transition Aid for 2009 and is expected to receive $1.5 million for 2010.[72] Additionally, the Minnesota Emergency Management Act provides reimbursement for the special radiological equipment and training required to respond to a radiological incident.[73]

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[67] Exh. 300 (Hand Direct) at 3-4; 2 Trans. 175-77; Exh. 141.

[68] Exh. 300, pgs. 3-4; Exh. 64, FEIS, Chapter 2, at 22, 29, 33-35.

[69] Red Wing Initial Brief at 14-23.

[70] 2 Trans. 156 - 57 (Xcel witness Bomberger stating that the NRC is not imposing any additional requirements); 5 Trans. 108 (Xcel witness Hallock stating that Xcel is not requesting any additional services).

[71] Exh. 137 (Xcel witness Rheinberger rebuttal) at 10, Table 1, (JPR-4), Sch. 1-2. On the basis of Rheinberger's testimony, the Commission will decline to adopt ALJ Finding 210 as written, and will instead adopt a revised version set forth in the ordering paragraphs.

[72] 4 Trans. 247 (Xcel witness Rheinberger).

[73] 5 Trans. 38 - 40, 43 (Red Wing witness Hand).

Second, OES and Xcel argue that if Red Wing were to become unwilling or unable to play the role assigned to it under the Emergency Response Plan, Xcel would find a replacement.[74] If this should occur, the services now provided by Red Wing could be provided by other communities, by the Prairie Island Indian Community, or by Xcel itself.[75] The ALJ found this proposal reasonable, but to ensure that Xcel pursued a resolution to this matter the ALJ recommended that the Commission direct Xcel to report on the status of its Emergency Response Plan. The Commission concurs.[76]

Further, this Commission lacks the detailed factual record, jurisdiction, and expertise on municipal budgeting issues that would be required to make any findings on Red Wing's concerns beyond those made by the ALJ. The Legislature may provide a more appropriate forum for addressing these concerns.

For the foregoing reasons, the Commission will adopt the ALJ's recommendation to direct Xcel to make a compliance filing regarding the status of its Emergency Response Plan but will decline to direct Xcel to make payments to Red Wing.

D. It has not been demonstrated on the record that the design, construction, operation, or retirement of the proposed facility will fail to comply with those relevant policies, rules, and regulations of other state and federal agencies and local governments.

Xcel identifies a variety of regulatory approvals it will require before it can implement its plans for extend the operating life of the Prairie Island Plant – plans that include expanding the capacity of the Independent Spent Fuel Storage Installation.

The Study Group argues that Xcel has failed to bear its burden to demonstrate that its proposal to expand the storage capacity of the storage installation would comply with the policies, rules and regulations of other state and federal agencies. It identifies three areas of concern: Minnesota Department of Health rules on permissible radiation levels, federal regulations regarding nuclear Emergency Response Plans, and environmental justice statements/policies developed by the United States Environmental Protection Agency, the Minnesota Pollution Control Agency, and the Minnesota Department of Transportation. These will be addressed in turn.

1. Department of Health Regulations

First, the Study Group notes that each cask emits "skyshine radiation" – that is, gamma radiation that escapes into the air and is reflected back to the ground. Gamma rays are associated with increased risk of cancer. When the number of casks becomes large enough, the Study Group argues, the cancer risks associated with the resulting skyshine radiation will exceed the standards established by the Minnesota Department of Health.

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[74] 1 Trans. 206 - 07 (Xcel witness Bomberger)

[75] 6 Trans. 58 (OES witness Rakow).

[76] See, for example, 10 C.F.R. § 50.47 (c)(1)(iii)(B) (if ERP infeasible due to shortcomings on the part of a state or local government, the utility shall substitute "measures designed to compensate for any deficiencies resulting from state and/or local non-participation.")

As noted in the Final Environmental Impact Statement,[77] however, the Department of Health clarifies that its rules do not apply to power plant radiation:

> 4731.0200 GENERAL APPLICATIONS.
>
> Subpart 1. Applicability.
> A. This chapter consists of rules for the regulation of radiation from radioactive materials, including source and special nuclear material not sufficient to form a critical mass and other *nonpower plant radiation hazards*. Except as otherwise specifically provided, this chapter applies to all persons who own, receive, possess, use, transfer, acquire, or dispose of any radioactive material.
>
> B. *Nothing in this chapter applies to a person to the extent that the person is subject to rules of the NRC [federal Nuclear Regulatory Commission] or to sources in the possession of federal agencies.*

(Emphasis added.) Because the radiation discussed by the Study Group is power plant radiation, and because the Prairie Island Plant is subject to the rules of the Nuclear Regulatory Commission,[78] Minn. Rules Chap. 4731 does not apply.

Moreover, Minn. Rules, part 4731.2090, subp. 1(A), sets the dose limit to the public for Minnesota licensed operations for radioactive materials at 0.1 rem/yr, and Minn. R. 4731.2010, subp. 2, directs regulated parties to achieve occupational doses and doses to members of the public "as low as reasonably achievable." Evidence shows that the storage installation would be expected to keep radiation exposure to approximately 0.4% of the regulatory standard, which Xcel deems to be as low as reasonably achievable.[79]

2. Emergency Response Plan Requirements

The Study Group cites 10 C.F.R. § 50.47 for the proposition that Xcel may not operate the Prairie Island Plant without an Emergency Response Plan in place. Red Wing's testimony questioning its ability to meet the requirements of Xcel's ERP demonstrates that Xcel is out of compliance with this regulation, the Study Group argues.

As noted above, the status of Xcel's ERP is an important substantive issue. As a procedural matter, however, Xcel's proposals for mitigating its current difficulties with Red Wing appear to be in conformance with federal law. Where a utility confronts shortcomings on the part of a state or local government, the regulation provides for a utility to substitute "measures designed to compensate for any deficiencies resulting from state and/or local non-participation,"[80] which Xcel proposes to do.

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[77] Exh. 64, Final EIS, Ch. 1 at 78.

[78] 10 C.F.R. Part 20; 10 C.F.R. Part 50; 10 C.F.R. Part 72.

[79] Exh. 64, Final EIS; Exh. 127 (Xcel witness Bomberger rebuttal) at CRB-2.

[80] 10 C.F.R. § 50.47(c)(1)(iii)(B).

3. Environmental Justice Policies

The Study Group argues that increasing the capacity of the storage installation would violate state and federal policies prohibiting actions placing a disproportionate share of the negative consequences of industrial and commercial activities on low-income or minority groups, including Tribes. The Study Group urges the Commission to deny the expansion of the storage installation in the interest of environmental justice, and objects that neither Xcel nor the Final Environmental Impact Statement considered any alternative sites for storing the spent nuclear fuel.

The FEIS recognizes that "the Prairie Island Community is a community of persons for whom there are environmental justice concerns"[81] and that continuing and increasing the operations at the storage facility would subject some 250 members of the Community who live within three miles of the plant to "slightly higher exposure levels and doses than communities at greater distances. These doses will create a small incremental risk that [the Community] will bear differentially from other communities."[82]

While the final EIS finds insufficient evidence to conclude that expansion of the storage facility would expose Community members to significantly higher radiological risks, it acknowledges some socio-psychological effects arising from uncertainty.[83] However, the final EIS also notes that the only way to eliminate these dynamics is to remove the spent fuel from the storage installation[84] – a matter that is currently beyond the power of any party in this proceeding.

Finally, as noted above, Xcel addressed the possibility of finding alternative locations for storing spend nuclear fuel, including the prospects of eventually moving the spent fuel to federally-regulated sites in other states. The fact that Xcel concluded that these plans are infeasible does not mean Xcel failed to consider them.

The ALJ concluded that the record did not demonstrate that the design, construction, operation, or retirement of the Prairie Island Plant, modified to extend its operations for another 20 years, would fail to comply with the relevant policies, rules, and regulations of other state and federal agencies and local governments. The Commission concurs.

V. Certificate of Need for Electric Generation

In interpreting the statutes requiring Xcel to obtain a Certificate of Need before undertaking its uprate proposal, Minn. Rules, part 7849.0120,[85] directs the Commission to consider the following factors:

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[81] Ex. 64, Ch. 2, p. 44.

[82] Exh. 64, Final EIS, Chap. 2 at 44.

[83] *Id.*

[84] *Id.* at 45.

[85] While the ALJ's Report purports to analyze Xcel's application in Docket No. E-002/CN-08-509 pursuant to Minn. Rules, part 7855.0120, this application is governed by the substantially similar rules at part 7849.0120.

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

(1) the accuracy of the applicant's forecast of demand for the type of energy that would be supplied by the proposed facility;

(2) the effects of the applicant's existing or expected conservation programs and state and federal conservation programs;

(3) the effects of promotional practices of the applicant that may have given rise to the increase in the energy demand, particularly promotional practices which have occurred since 1974;

(4) the ability of current facilities and planned facilities not requiring certificates of need to meet the future demand; and

(5) the effect of the proposed facility, or a suitable modification thereof, in making efficient use of resources;

B. a more reasonable and prudent alternative to the proposed facility has not been demonstrated by a preponderance of the evidence on the record, considering:

(1) the appropriateness of the size, the type, and the timing of the proposed facility compared to those of reasonable alternatives;

(2) the cost of the proposed facility and the cost of energy to be supplied by the proposed facility compared to the costs of reasonable alternatives and the cost of energy that would be supplied by reasonable alternatives;

(3) the effects of the proposed facility upon the natural and socioeconomic environments compared to the effects of reasonable alternatives; and

(4) the expected reliability of the proposed facility compared to the expected reliability of reasonable alternatives;

C. by a preponderance of the evidence on the record, the proposed facility, or a suitable modification of the facility, will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health, considering:

(1) the relationship of the proposed facility, or a suitable modification thereof, to overall state energy needs;

(2) the effects of the proposed facility, or a suitable modification thereof, upon the natural and socioeconomic environments compared to the effects of not building the facility;

(3) the effects of the proposed facility, or a suitable modification thereof, in inducing future development; and

(4) the socially beneficial uses of the output of the proposed facility, or a suitable modification thereof, including its uses to protect or enhance environmental quality; and

D. the record does not demonstrate that the design, construction, or operation of the proposed facility, or a suitable modification of the facility, will fail to comply with relevant policies, rules, and regulations of other state and federal agencies and local governments.

The Commission's analysis is as follows:

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

(1) the accuracy of the applicant's forecast of demand for the type of energy that would be supplied by the proposed facility;

(2) the effects of the applicant's existing or expected conservation programs and state and federal conservation programs;

(3) the effects of promotional practices of the applicant that may have given rise to the increase in the energy demand, particularly promotional practices which have occurred since 1974;

(4) the ability of current facilities and planned facilities not requiring certificates of need to meet the future demand; and

(5) the effect of the proposed facility, or a suitable modification thereof, in making efficient use of resources

As discussed in the context of the Certificate of Need for expanding the capacity of the Prairie Island Independent Spent Fuel Storage Installation, OES's and Xcel's forecasts provide an accurate estimate of the lower bound of customer demand. These forecasts reflect existing and expected conservation programs, and there is no evidence that the forecasts have been influenced by any promotional practices by Xcel. To the extent that the forecasts warrant adjustment, the revised forecasts would merely provide additional support for Xcel's proposal.

Arguably, demand forecasts play a different role in the context of seeking additional capacity for storing spent fuel than in the context of seeking to expand generation capacity. In the former case, parties argued about the merits of maintaining the status quo; in the current context, parties argue about the merits of deviating from the status quo by adding new generating capacity. Ultimately, much of this discussion focuses on the rule's final two factors: (4) the ability of current facilities and planned facilities not requiring certificates of need to meet the future demand; and (5) the effect of the proposed facility, or a suitable modification thereof, in making efficient use of resources.

On the one hand, the Community and the Study Group emphasize that the forecasts do not demonstrate the existence of a demand that cannot be served via facilities that do not require a certificate of need, including existing facilities or long-term power purchase agreements. And they note that Xcel has statutory obligations to acquire more of its energy from renewable sources, as well as to achieve increased levels of conservation, further reducing the need for additional generating capacity from Prairie Island.

On the other hand, OES and Xcel continue to forecast growing demand for power in Xcel's service area, and for baseload power in particular. But more significantly, OES and Xcel argue that the need to uprate the Prairie Island Plant is driven more by supply rather by demand.[86] That is, new technology – and greater experience with old technology – has demonstrated how Xcel might make more efficient use of the Prairie Island Plant, an existing resource.

[86] ALJ's Report, Findings ; OES witness Rakow direct at 33.

On the basis of the record, the ALJ found that denial of a Certificate of Need for the uprate proposal would result in a lost opportunity for future efficiency in Xcel's energy supply because the uprate proposal was more cost-effective than any other proposals developed in the record, even when externalities were taken into consideration. The Commission concurs.

B. A more reasonable and prudent alternative to the proposed facility has not been demonstrated by a preponderance of the evidence on the record, considering:

(1) the appropriateness of the size, the type, and the timing of the proposed facility compared to those of reasonable alternatives;
(2) the cost of the proposed facility and the cost of energy to be supplied by the proposed facility compared to the costs of reasonable alternatives and the cost of energy that would be supplied by reasonable alternatives;
(3) the effects of the proposed facility upon the natural and socioeconomic environments compared to the effects of reasonable alternatives; and
(4) the expected reliability of the proposed facility compared to the expected reliability of reasonable alternatives

Many of the same arguments demonstrating the merit of expanding the storage capacity of the Independent Spent Fuel Storage Facility apply analogously to demonstrating the merit of expanding the Prairie Island Plant's generating capacity.

The choice to uprate the Prairie Island Plant by 164 MW is indicated by technical considerations, and no party advocated uprating the Prairie Island Plant by some different amount. The Strategist model demonstrates that expanding the Prairie Island Plant's generating capacity by 164 MW would be more cost-effective than any alternative considered. While the record demonstrates that expanding the plant's generating capacity would incrementally increase various externalities – radiation levels, the temperature of water discharged into the Mississippi, emissions of steam – the record does not demonstrate that the magnitude of these changes would produce an appreciable change in the natural or sociological environments. Finally, expanding the generating capacity of one of Xcel's most reliable plants would be expected to increase the reliability of Xcel's energy supply generally.

Both the Chamber of Commerce and the XLI support expanding Prairie Island's capacity to supply inexpensive, reliable power.

The Community and the Study Group argue that Xcel has failed to bear its burden because it failed to compare the merits of uprating the Prairie Island Plant to the merits of a substitute long-term power purchase contract with Manitoba Hydro[87] for power generated by a complex of turbines powered by water flowing through dams.

While Xcel acknowledges that it did not test the option of securing a long-term contract of electricity from hydropower by soliciting bids, this does not mean the Xcel ignored the hydropower alternative. The record indicates that Xcel conducted a screening analysis of the possibility of

[87] See, for example, Community Exceptions at 6 – 7.

acquiring a hydropower contract, but discarded the proposal as infeasible.[88] The fact that Xcel already has contracts for hundreds of megawatts of hydropower from Manitoba Hydro[89] demonstrates that Xcel is knowledgeable about the state of hydro power purchase contracts and enters into those contracts when the terms are favorable.

A recurring challenge in Certificate of Need dockets is determining when the applicant has made a sufficient showing that reasonable alternative proposals have been fairly evaluated and rejected. Ultimately the Commission must make its decision based on whether "a more reasonable and prudent alternative to the proposed facility has not been demonstrated by a preponderance of the *evidence on the record....*"[90] In this instance, the record documents no more reasonable and prudent alternative.

The ALJ concluded that the uprate proposal was the most reasonable and prudent demonstrated on the record.[91] The Commission concurs.

To reiterate, the Commission is not persuaded that externalities arising from Xcel's uprate proposal undermine its overall reasonableness and prudence. That said, parties have suggested means by which Xcel might mitigate some of these externalities. The Commission will address that issue below.

C. By a preponderance of the evidence on the record, the proposed facility, or a suitable modification of the facility, will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health, considering:

+(1) the relationship of the proposed facility, or a suitable modification thereof, to overall state energy needs;
(2) the effects of the proposed facility, or a suitable modification thereof, upon the natural and socioeconomic environments compared to the effects of not building the facility;
(3) the effects of the proposed facility, or a suitable modification thereof, in inducing future development; and
(4) the socially beneficial uses of the output of the proposed facility, or a suitable modification thereof, including its uses to protect or enhance environmental quality

In analyzing the matters set forth above, the Commission relies on the final Environmental Impact Statement, which OES prepared by incorporating the information and analysis

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[88] Exh. 64, Final EIS, Ch. 1 at 32 – 39; ALJ's Report, Finding 109.

[89] Exh. 100, CN Application at 4-10 to 4-30.

[90] Minn. Rules, part 7849.0120.B (emphasis added); see also part 7849.0110 ("The commission shall consider only those alternatives proposed before the close of the public hearing and for which there exists substantial evidence on the record with respect to each of the criteria listed in part 7849.0120.")

[91] ALJ's Report, Findings 173 – 74.

required pursuant to Minn. Rules, part 7849.1200.[92] The Commission finds that the final Environmental Impact Statement, combined with the record developed in these matters, adequately addresses the issues identified in the Scoping Decision[93] for purposes of evaluating the need for Xcel's uprate proposal.[94]

Based on the Final EIS and the rest of the record, the ALJ concluded that uprating the Prairie Island Plant – subject to appropriate conditions -- would provide benefits to society in a manner compatible with the natural and socioeconomic environments, including human health. [95] The Commission generally concurs.

The Community and Study Group express concern that increasing the generating capacity of the Prairie Island Plant will also increase various types of pollution, including tritium in the groundwater and thermal discharge, and that the increased levels of radiation would warrant a program of genetic testing. These matters are addressed in the discussion of Xcel's Site Permit request.

D. The record does not demonstrate that the design, construction, or operation of the proposed facility, or a suitable modification of the facility, will fail to comply with relevant policies, rules, and regulations of other state and federal agencies and local governments.

Xcel identifies a variety of regulatory approvals it will require before it would implement its plan to increase the generating capacity of the Prairie Island Plant, and commits to acquiring them.

The Community, Red Wing and the Study Group offer various theories for concluding that Xcel's uprate proposal is inconsistent with various legal requirements. Some of these arguments are addressed in the context of Xcel's Certificate of Need to expand its storage installation. The ALJ found that none of these arguments provided a basis to conclude that granting a Certificate of Need for expanding the generating capacity of the Prairie Island Plant would conflict with other law.[96] The Commission concurs.[97]

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[92] Formerly codified at Minn. Rules, part 7849.7030.

[93] Exh. 115, EIS Scoping Decision (November 13, 2008).

[94] See Minn. Rules, part 7849.1800, subp. 2.

[95] ALJ's Report, Findings 175 – 253.
[96] ALJ's Report, Findings 281 – 301.

[97] With respect to ALJ's Report, Finding 298, the Commission notes that the text inadvertently omits the word *not* from the phrase "... distributed generation would <u>not</u> be available in sufficient quantities to fill the need demonstrated by Xcel...."

VI. Site Permit for Electric Generation

A. Introduction

The Commission's site permit determinations must be guided by the state's goals to conserve resources, minimize environmental impacts, minimize human settlement and other land use conflicts, and ensure the state's electric energy security through efficient, cost-effective power supply and electric transmission infrastructure.[98]

Xcel must demonstrate that its proposed expansion would comply with all relevant environmental review and protection laws.[99] The Commissioner of the Department of Commerce must prepare an Environmental Impact Statement on each proposed large electric generating plant, studying any site proposed by an applicant and other sites as the Commissioner deems necessary.[100] The Commission must then rule on whether the final EIS was prepared in compliance with relevant procedures, adequately addresses the issues and alternatives identified in the Scoping Decision, and responds to timely substantive comments received in response to the draft EIS.[101]

In evaluating a Site Permit application, the Commission is guided by the factors set forth at Minn. Stat. § 216E.03, subd. 7(b), among other things. These considerations are reflected in Minn. Rules, part 7850.4100:

> *A. effects on human settlement, including, but not limited to, displacement, noise, aesthetics, cultural values, recreation, and public services;*
> *B. effects on public health and safety;*
> *C. effects on land-based economies, including, but not limited to, agriculture, forestry, tourism, and mining;*
> *D. effects on archaeological and historic resources;*
> *E. effects on the natural environment, including effects on air and water quality resources and flora and fauna;*
> *F. effects on rare and unique natural resources;*
> *G. application of design options that maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of transmission or generating capacity;*
> *H. use or paralleling of existing rights-of-way, survey lines, natural division lines, and agricultural field boundaries;*
> *I. use of existing large electric power generating plant sites;*
> *J. use of existing transportation, pipeline, and electrical transmission systems or rights-of-way;*

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[98] Minn. Stat. § 216E.03, subd. 7(a); Minn. Rules, part 7850.1100.

[99] Minn. Stat. § 116C.83, subd. 6(a) (citing Minn. Stat. Chap. 115, 115B, 116, 116B, 116C, 116D, and 216B, and rules associated with those chapters, but excluding statutes and rules that apply specifically to a radioactive waste management facility as defined in § 116C.71, subd 7); Minn. Rules, part 7850.1200 (citing chap. 4410 and parts 7849.1000 - .2100).

[100] Minn. Stat. § 216E.03, subd. 5.

[101] Minn. Rules, parts 7850.2500, subp. 10; 7850.2700, subp. 2.

K. electrical system reliability;

L. costs of constructing, operating, and maintaining the facility which are dependent on design and route;

M. adverse human and natural environmental effects which cannot be avoided; and

N. irreversible and irretrievable commitments of resources.

The Commission may grant a Site Permit subject to conditions.[102] However, the Commission may not designate a site that conflicts with state agency rules.[103]

B. Analysis

1. Effects on human settlement, including, but not limited to, displacement, noise, aesthetics, cultural values, recreation, and public services

The ALJ concluded that the uprate's effect on human settlement would be limited.[104] It might result in minor, short-term increase in traffic to and from the plant, and in employment. Long term, the uprate could be expected to result in the Prairie Island Plant using its cooling towers and emitting water vapor roughly 20 more days each year, and in a slight increase in both the volume and temperature of the water discharged from the plant. In most other respects, the change would be indiscernible to those outside the Prairie Island Plant. The Commission concurs.

The issue of "thermal discharge," however, prompts concern from the Community and the Study Group, and ultimately from the ALJ. To cool the steam generated in the Prairie Island Plant, Xcel takes in water from the Mississippi, circulates it through the plant, and eventually discharges it back into the Mississippi. This discharge is regulated in accordance with the U.S. Environmental Protection Agency's National Pollution Discharge Elimination System (NPDES).

Xcel proposes to increase the plant's generating capacity by causing the plant to operate at a higher temperature. Among other consequences, this would result in Xcel discharging more water, and warmer water, into the Mississippi. While this increase in thermal discharge may not violate the limits established in the NPDES, the Community and the Study Group cite a letter from the Minnesota Department of Natural Resources expressing concern that the increased thermal discharge might impair ice formation on Lake Pepin, thereby impeding recreational activities.[105]

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[102] *Id,* subd. 10(a).

[103] *Id,* subd. 7(d).

[104] ALJ's Report, Findings 306 – 313.

[105] Study Group comments, Attachment C at 2 (Minnesota Department of Natural Resources letter of August 21, 2009).

While the ALJ did not find this concern precluded a finding that the benefits of uprating the Prairie Island Plant exceeded the costs, he concluded that the matter warranted further exploration.[106]

In response, Xcel has agreed to file a report with the Commission 1) analyzing existing data on the issue, 2) determining if new data is required and, if so, 3) developing a plan to acquire more data:

> G. Study of the Impact of Thermal Discharge on Ice Formation on Lake Pepin. Within 12 months of the issuing of this permit, the Permittee [Xcel] shall provide, as a compliance filing to the Commission, a report on the potential impact of the PINGP's thermal discharge on the ice formation on Lake Pepin. The report shall include, at a minimum: 1) a review and analysis of previous studies and current data, and 2) a detailed plan of action if additional data collection is deemed necessary. The applicant shall seek advice from the Minnesota Pollution Control Agency (MPCA) in this evaluation and the development of a plan of action, if one is determined to be necessary. The MPCA is the state agency authorized to implement the NPDES Permit Programs and that regulates the PINGP's thermal discharges through the NPDES permit program. The applicant shall also submit the report to the Minnesota Department of Natural Resources when the filing is made to the Commission.[107]

The Commission appreciates Xcel's willingness to further develop this issue, and will generally accept Xcel's offer. The specific language set forth above, however, leaves ambiguity about who determines whether the initial data analysis resolves the matter, or whether additional data is "deemed necessary." In the interest of clarity, the Commission will specify that the Commission will determine whether the initial study will suffice to determine whether the plant's thermal discharge impedes ice formation on Lake Pepin.

2. Effects on public health and safety

As part of its Environmental Impact Statement, OES incorporated the information and analysis required by Minn. Rules, part 7850.2500.[108] The ALJ concluded that the final EIS addresses the issues identified in the Scoping Decision,[109] responds to the timely, substantive comments received in response to the draft EIS, and was prepared in compliance with the procedures in Minn. Rules, parts 7850.1000 to 7850.5600.[110] Consequently the Commission finds that the final EIS prepared by the OES is adequate for purposes of evaluating the merits of granting a Site Permit for Xcel's uprate proposal.[111]

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[106] ALJ's Report, Findings 224 – 230, 366.

[107] Xcel exceptions at 5 – 6, quoting OES Facilities Planning Division's draft Site Permit.

[108] Formerly codified at Minn. Rules, part 7849.5300.

[109] Exh. 115, EIS Scoping Decision (November 13, 2008).

[110] ALJ's Report, Conclusion 40.

[111] See Minn. Rules, part 7850.2500, subp. 10.

The process of generating heat through a nuclear reaction releases radiation. Increasing the plant's capacity to generate heat will entail releasing more radiation. The ALJ reviewed the extent of this increase within the plant itself, in gases released from the plant, in added solid waste, and in doses experienced by those living in proximity to the plant. In each case the ALJ found insufficient evidence to conclude that this increased radiation would imperil public health or safety, or exceed legal limits. The Commission concurs.

Nevertheless, parties raise a variety of concerns about the effect of Xcel's proposal on public health and safety. The Commission will address three in particular: the City of Red Wing's concern that it might be unable to fulfill its role in the Emergency Response Plan without direct payments from Xcel; the Community's interest in requiring Xcel to fund genetic testing for Community members living near the plant; and the Community's request that Xcel be required to conduct additional groundwater testing.

a. Red Wing's Ability to Fulfill its Designated Role in the Emergency Response Plan

As previously discussed, Red Wing expresses concern about its own ability to finance a public safety staff sufficient to fulfill Red Wing's role in Xcel's Emergency Response Plan, absent additional revenues. In addition, Red Wing objects to Xcel's proposal to seek to secure emergency services from some other entity. Consequently Red Wing asked the Commission to direct Xcel to provide a new, stable stream of revenues for public service purposes, and to prohibit Xcel from seeking emergency services elsewhere.

The ALJ declined to recommend that the Commission grant Red Wing the relief it seeks but did recommend that the Commission direct Xcel, as a condition of receiving a Site Permit, to make a compliance filing regarding the status of its Emergency Response Plan.

Because the Commission addresses this matter in the context of Xcel's Certificates of Need dockets, the Commission will decline the ALJ's recommendation to address the matter here.

b. Genetic Testing

The Community asked the Commission to require Xcel to fund a study designed to determine whether members of the Community have suffered any genetic harm arising from the long-term, low-dose exposure to radiation they experience by living in proximity to the Prairie Island Plant.

Xcel argues that such a proposal is unwarranted. Xcel argues that the level of radiation experienced by those living outside the plant's gates is barely different than the background level of radiation that all people experience. Xcel cites a variety of authorities that tend to undermine the theory that radiation at the levels experienced by people living outside the gates of the Prairie Island Plant could cause genetic damage. And Xcel cites a study of the incidence of cancer, including childhood cancers, in Goodhue County; the study found that citizens of Goodhue were, if anything, less likely to contract cancer than the public in general.

Moreover, even if such a study were conducted, Xcel argues that it would be inconclusive. The use of gene expression to establish an environmental health and safety baseline has not yet been

established.[112] And the population of people living within three miles of the plant – roughly 250 people – would be too small to determine whether any different cancer rate was the result of the Prairie Island Plant and not, say, the relatively high level of naturally-occurring radium in the environment.[113]

Finally, under the terms of a May 2003 Settlement Agreement between the Community and Xcel, Xcel already provides the Community with a substantial annual payment for expenses associated health studies.[114]

On the basis of the foregoing arguments, the ALJ declined to recommend that the Commission adopt the Community's proposal.[115] The Commission concurs.

c. Groundwater Pollution

Given unexplained fluctuations in the amount of tritium in well water collected around the Prairie Island Plant, the Community asks that the Commission not grant any Site Permit that failed to direct Xcel to do the following:

- Fully implement the objective and criterion set forth in the Nuclear Energy Institute's Groundwater Protection Initiative by April 30, 2010.

- Provide detailed written reports quarterly to the Community, Red Wing, and the Minnesota Department of Health MDH that a) report information from well monitoring in and around the plant and b) summarize material information discovered as it implements and maintains each subpart of the Initiative.

- Discontinue discharging liquid waste into landlocked areas.

- Conduct a comprehensive surface investigation in and around wells P-10, MW-7 and MW-8, and consider the installation of other monitoring wells in and around the area of wells MW-7 and MW-8.

- Identify the source and quantity of all liquid and gaseous tritium emissions, including providing a comprehensive explanation for the fluctuating amounts of tritium released and detected in monitoring wells month-to-month and year-to-year.

Given the uncertainty regarding the fluctuation of tritium levels in the groundwater, the ALJ recommended that the Commission adopt the Community's first four proposals. The ALJ declined to recommend the final proposal, noting that Xcel reported that it had been trying to determine how tritium entered the environment around the plant, but without success.[116]

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[112] Exh. 178 (Xcel witness Hoel surrebuttal) at 10-11.
[113] Exh. 173, 2008 REMP Report for Prairie Island at 10.

[114] Exh. 156, Settlement Agreement at ¶1(iv).

[115] ALJ's Report, Findings 234 – 43.

[116] ALJ's Report, Finding 252.

The Commission concurs in this reasoning, and will therefore incorporate the first four recommendations into the terms of Xcel's Site Permit.

3. Effects on land-based economies, including, but not limited to, agriculture, forestry, tourism, and mining

The ALJ found insufficient evidence to support a conclusion that the uprate proposal would affect land-based economies.[117] The Commission concurs.

4. Effects on archaeological and historic resources

The record reveals six National Register historic sites within five miles of the Prairie Island Plant, and seven archaeological sites within the Plant's boundaries. However, construction for the uprate proposal would occur within existing structures. Moreover, Xcel has traditionally observed "Excavation and Trenching Controls," whereby any proposal to excavate more than six inches deep is reviewed to help identify and protect potential sites of archeological interest. Assuming Xcel will maintain these controls, the ALJ concluded that the record does not indicate any threat to archaeological or historic resources.[118] The Commission concurs, and will direct Xcel to maintain its Excavation and Trenching Controls as a condition of its Site Permit.

5. Effects on the natural environment, including effects on air and water quality resources and flora and fauna

The record does not demonstrate that authorizing Xcel's uprate proposal would have a significant effect on air and water quality, especially relative to the status quo. To ensure that this continues to be the case, the ALJ recommended that the Commission initiate monitoring and reporting requirements related to tritium in the groundwater and thermal pollution in the Mississippi.[119] The Commission concurs in those recommendations.

6. Effects on rare and unique natural resources

While the record documents wildlife passing within the Prairie Island Plant's vicinity, including some endangered wildlife, the ALJ found that the plant's operations would be unlikely to have any significant effect on them.[120] The Commission concurs.

7. Application of design options that maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of transmission or generating capacity

One of the advantages of Xcel's proposal is that it would help Xcel derive greater benefits from its existing resources. Because the ALJ regards the potential adverse environmental effects from the

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[117] ALJ's Report, Findings 321 – 323.

[118] ALJ's Report, Findings 324 – 327.

[119] ALJ's Report, Findings 328 – 343.

[120] ALJ's Report, Findings 344 - 48.

uprate to be speculative, and the benefits from a generation source free of greenhouse gas emissions and particulates to be more certain, he finds that this factor militates in favor of granting Xcel's petition.[121] The Commission concurs.

8. Use or paralleling of existing rights-of-way, survey lines, natural division lines, and agricultural field boundaries

The ALJ concluded that Xcel's proposal raises no routing issues.[122] The Commission concurs.

9. Use of existing large electric power generating plant sites

The ALJ concluded that Xcel's uprate proposal makes use of an existing large electric power generating plant site.[123] The Commission concurs.

10. Use of existing transportation, pipeline, and electrical transmission systems or rights-of-way

Again, Xcel's proposal would enhance the usefulness of existing facilities. While detailed studies are underway, preliminary studies suggest that no new transmission facilities would be needed – and specifically no new transmission corridors. On this basis the ALJ concluded that Xcel's uprate proposal can be expected to make optimal use of existing transmission facilities and rights-of-way.[124] The Commission concurs.

11. Electrical system reliability

The ALJ concluded that the Prairie Island Plant has proven to be remarkably reliable, and that expanding its capacity should be expected to increase the system's reliability.[125] The Commission concurs.

12. Costs of constructing, operating, and maintaining the facility which are dependent on design and route

This factor is intended to aid the Commission's choice among competing designs and routes. While the record shows that Xcel expects to spend $322 million to implement its uprate proposal, the record contains only one siting proposal. The ALJ concluded that no other siting proposal warranted consideration.[126] The Commission concurs.

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[121] ALJ's Report, Findings 349 – 54.

[122] ALJ's Report, Finding 355.

[123] ALJ's Report, Finding 356.

[124] ALJ's Report, Finding 357.

[125] ALJ's Report, Findings 358 – 59.

[126] ALJ's Report, Finding 360.

13. Adverse human and natural environmental effects which cannot be avoided

The ALJ found that no significant adverse human, natural, or environmental effects have been identified that cannot be avoided and that where the potential for adverse effects exists, that potential can be adequately explored and adequately addressed by attaching reasonable conditions to the site permit. [127] The Commission concurs.

14. Irreversible and irretrievable commitments of resources

The ALJ found that the record identified no irreversible or irretrievable commitments of resources arising from Xcel's uprate proposal.[128] The Commission concurs.

VII. Conclusion

The ALJ conducted two public hearings and presided over six days of evidentiary hearings. He reviewed hundreds of exhibits, including the parties' pre-filed testimony and briefs. The resulting report contained 368 findings of fact and 42 conclusions. On this basis, the ALJ ultimately concluded that Xcel had borne its burden of proof with respect to each of its applications, and consequently recommended that the Commission issue to Xcel the requested Certificates of Need and Site Permit subject to conditions.

The ALJ's examination of the issues raised in this case is carefully considered, closely reasoned, and based on a thorough evidentiary record. Having examined the record itself and having carefully considered the recommendations of the parties, the Commission concurs in and will accept, adopt and incorporate herein, the ALJ's findings of fact, conclusions, and recommendations except as otherwise provided herein.

In particular, the Commission concurs with the Administrative Law Judge that Xcel has met its burden of proof under Minn. Stat. § 216B.243 and its implementing rules.

The Commission also finds that the OES's final Environmental Impact Statement and the record created adequately address the issues identified in the OES scoping decision. Because the record demonstrates that Xcel has fulfilled the requirements for a Certificate of Need for up to 35 additional dry casks for its Independent Spent Fuel Storage Installation and for a Certificate of Need and Site Permit to increase the generating capacity of the Prairie Island Nuclear Generating Plant, the Commission will so order.

With the assistance of parties and participants, the Commission has identified some points where the ALJ's Report contains a clerical error or important ambiguity. They are noted in the ordering paragraphs below.

Lastly, the Commission notes that with respect to its decision to grant a Certificate of Need for additional dry cask storage, this order is stayed until June 1 following the next regular annual session of the Legislature that begins after the date of the Commission decision to allow for

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[127] ALJ's Report, Finding 361.

[128] ALJ's Report, Finding 362.

legislative review.[129] If the Legislature does not modify or reject the Commission's decision by law enacted during that regular legislative session, the decision shall become effective on the expiration of the stay.

ORDER

1. The Commission takes administrative notice of the Minnesota Department of Health's revised Environmental Monitoring Report 2007-2008, regarding the Prairie Island and Monticello Nuclear Generating Plants.

2. The findings, conclusions and recommendations contained in the Administrative Law Judge's October 21, 2009 Findings of Fact, Conclusions and Recommendation are adopted except as inconsistent with this Order or otherwise specified below:

   A. Xcel has demonstrated the need for its proposed extended power uprate in Docket No. E-002/CN-08-509 pursuant to Minnesota Rules, part 7849.0120, not 7855.0120.

   B. In lieu of Finding 55, the Commission finds as follows:

   Currently, the ISFSI is licensed by the NRC to store 48 casks. There are currently 25 ~~24~~ casks ~~are~~ stored on two reinforced concrete pads, measuring 36' wide, 216' long, and 3' deep, within the storage area. Xcel proposes to store 16 of the additional casks on new 18' wide concrete pads to be located immediately south of the existing concrete pads within the ISFSI.

   C. In lieu of Finding 106, the Commission finds as follows:

   OES calculated that a non-renewable coal alternative would be more expensive than the proposed Power Uprate by between $263 million PVSC and ~~$435~~ $604 million PVSC.

   D. In lieu of Finding 210, the Commission finds as follows:

   ~~The City noted that the~~ The property tax revenues to the City from Xcel Energy arising from the PINGP have decreased ~~from~~ approximately ~~$23.4~~ $1.6 million ~~dollars~~ from $5.8 million in 1994 to $4.2 million in 2009 ~~in 1996 to $10.5 million dollars currently~~. Exhibit 137 (Xcel witness Rheinberger Rebuttal) at 8 and JPR-3. Based on the investments for the proposed projects after accounting for the expected pollution control exemptions and other investments system-wide, the taxes paid to the City will more than double from $4.2 million in 2009 to $9.2 million by 2017. Exhibit 137 (Xcel witness Rheinberger Rebuttal) at JPR-4, Sch. 2; 4 Transcript 250-252 (testimony of Xcel witness Rheinberger). ~~This trend is expected to continue based on a Minnesota Department of Revenue determination on the valuation of utility property and the potential for the dry casks to be exempt from taxation through a noncarbon-emitting pollution control exemption. The City also noted that it is receiving significantly less in Local Government Aid (LGA).~~

[129] Minn. Stat. § 116C.83, subd. 3.

E. In lieu of the second sentence of Finding 298, the Commission finds as follows:

Xcel considered this issue and concluded that the distributed generation would not be available in sufficient quantities to fill the need demonstrated by Xcel supporting the extension of the Prairie Island Plant's operation and the uprate of that facility.

F. In lieu of Finding 302, the Commission finds as follows:

Minnesota Statutes Chapter 216E and Minn. R. Chapter 7850, parts 7850.1000 through 7850.5600, set forth the process and criteria for reviewing a site permit application for a large electric power generating plant. Minn. Stat. § 216E.03 prohibits construction of a large electric generating plant without first obtaining a site permit from the Commission. The proposed uprate to the Prairie Island Plant is greater than ~~150~~ 50 MW, so it qualifies as a large electric power generating plant as defined in Minn. Stat. § 216E.01, subd. 5, and Minn. R. 7850.1000, subp. 11. The uprate project will increase the generating capacity of the Prairie Island Plant, which is an existing large electric power generating plant, and therefore a site permit from the Commission is required under Minn. R. 7850.1300, subp. 3.C.

G. While Finding 368 concludes that it is reasonable for the Commission to make Xcel's uprate Site Permit subject to the condition that Xcel file status reports on its emergency response plan, the Commission finds it more reasonable to make this status report a condition of Xcel's requested uprate Certificate of Need.

3. *In the Matter of the Application of Northern States Power Company d/b/a Xcel Energy for Certificate of Need for an Extended Power Uprate at the Prairie Island Nuclear Generating Plant*, Docket No. E-002/CN-08-509, the Commission takes the following actions:

A. The Commission finds that the final Environmental Impact Statement prepared by the Office of Energy Security of the Minnesota Department of Commerce meets the requirements of applicable statutes, and addresses the issues identified by the Commissioner in his November 18, 2008 Scoping Decision.

B. The Commission finds that Xcel has demonstrated the need for uprating its Prairie Island Nuclear Power Plant Unit I in 2014 rather than 2012.

C. The Commission hereby grants Xcel's request for a Certificate of Need to uprate Xcel's Prairie Island Nuclear Generating Plant on the condition that Xcel provide a compliance filing/status report on its emergency response plans.

4. *In the Matter of the Application of Northern States Power Company d/b/a Xcel Energy for Certificate of Need for Additional Dry Cask Storage at the Prairie Island Nuclear Generating Plant*, Docket No. E-002/CN-08-510, the Commission takes the following actions:

A. The Findings of Fact, Conclusions and Orders issued by the Director of OES on October 22 and 27, 2009, establish that OES's final Environmental Impact Statement adequately addressed the significant environmental issues and alternatives identified in the Scoping Decision developed pursuant to Minn. Rules, part 4410.2100, and that the design and operation of the spent fuel storage facility are adequate to guard against prohibited groundwater contamination.

B. The Commission hereby grants Xcel's request for a Certificate of Need for additional dry cask storage at the Prairie Island Nuclear Generating Plant as provided herein on the condition that Xcel provide a compliance filing/status report on its emergency response plans.

5. *In the Matter of the Application of Northern States Power Company d/b/a Xcel Energy for an LEPGP Site Permit for the Extended Power Uprate Project at the Prairie Island Nuclear Generating Plant*, Docket No. E-002/GS-08-690, the Commission takes the following actions:

A. The Commission finds that the final Environmental Impact Statement prepared by the Office of Energy Security of the Minnesota Department of Commerce, combined with the record developed at the hearings, meet the requirements of applicable statutes and addresses the issues identified by the Commissioner in his November 18, 2008 Scoping Decision.

B. The Commission hereby grants Xcel's request and issues the attached Large Energy Power Generating Plant Site Permit for the proposed extended power uprate of the Prairie Island Nuclear Generating Plant on the condition that Xcel do the following:

a. Implement, in full, each and every objective and criterion set forth in the Nuclear Energy Institute's Groundwater Protection Initiative. The initiative should be implemented, in full, no later than April 30, 2010.

b. Provide detailed written reports to the Community and the City of Red Wing, as well as the Minnesota Department of Health, every three months, which will include well monitoring information in and around the plant, as well as summarize material information discovered as it implements and maintains each discrete subpart of the groundwater protection initiative.

c. Discontinue permanently the discharge of any liquid waste into the landlocked area.

d. Conduct a comprehensive surface investigation in and around wells P-10, MW-7 and MW-8, and consider the installation of other monitoring wells in and around the area of wells MW-7 and MW-8.

e. Study the effect of thermal discharge on Lake Pepin, such that 1) Xcel would prepare a report which would, at a minimum, review the analysis of previous studies and current data and propose a plan of action, and 2) if the Commission determines that the initial report is insufficient and additional data collection is appropriate, Xcel would seek advice from the Minnesota

Pollution Control Agency.

6. This Order, except as otherwise provided by Minn. Stat. § 116C.83, subd. 3, shall become effective immediately.

BY ORDER OF THE COMMISSION

Burl W. Haar
Executive Secretary

(S E A L)

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STATE OF MINNESOTA PUBLIC UTILITIES COMMISSION

LARGE ELECTRIC POWER GENERATING PLANT SITE PERMIT FOR PRAIRIE ISLAND NUCLEAR GENERATING PLANT IN GOODHUE COUNTY, MINNESOTA ISSUED TO XCEL ENERGY

PUC DOCKET NO. E002/GS-08-690

In accordance with the requirements of Minnesota Statute 216E and Minnesota Rules Chapter 7850.1000 - .5600, this Site Permit is hereby issued to:

XCEL ENERGY

Xcel Energy (Xcel) is authorized by this permit to construct and operate an Extended Power Uprate capable of producing an additional 164 megawatts (MW) on the site of the Prairie Island Nuclear Generating Plant in Goodhue County, Minnesota, identified in this Permit and in compliance with the conditions specified in this Permit.

Issued this 18th day of December, 2009.

BY ORDER OF THE COMMISION

Burl W. Haar,
Executive Secretary

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I. SITE PERMIT

The Minnesota Public Utilities Commission (Commission) hereby issues this Site Permit to Xcel Energy, pursuant to Minnesota Statute 216E and Minnesota Rules Chapter 7850, to construct the Extended Power Uprate (EPU), capable of producing an additional 164 megawatts (MW), at the Prairie Island Nuclear Generating Plant (PINGP) in Goodhue County, Minnesota.

II. PROJECT DESCRIPTION

The extended uprate of 164 MWe consists of an 82 MWe net capacity uprate at Unit 1 and an 82 MWe net uprate at Unit 2. Xcel Energy proposes to complete the uprate on Unit 1 during the 2014 refueling outage (Unit 1 Outage) and on Unit 2 during the 2015 refueling outage (Unit 2 Outage).

The 164 MWe total capacity uprate at the PINGP would be achieved by:

1 Increasing the heat produced in the reactor and steam produced in the steam generators; and,
2 Improving the balance-of-plant equipment that converts the steam into electricity.

Higher steam flow from the reactors is obtained by operating the reactors at a higher thermal power level. Increasing the thermal output of the reactors would require more uranium in the reactor core to maintain the same fuel cycle length (e.g. 18 to 20 months). This would be accomplished by using a fuel assembly that has slightly larger diameter fuel pellets. These larger fuel rods would also have more surface area for heat transfer offsetting some of the higher operating temperatures. To transfer the additional heat energy out of the fuel, the fuel assemblies themselves would operate at slightly higher temperatures. The NRC must approve the new fuel design prior to its use in the PINGP.

In addition to the increased heat output, the power uprate would require steam turbine replacements and a variety of other balance-of-plant improvements to take advantage of the increased steam production.

The major modifications that would be completed during the two outages are:

- Upgrade high-pressure turbines;
- Replace or rewind main generators;
- Replace generator step-up transformers;
- Replace moisture separator reheaters; and
- Upgrade isophase bus duct cooling.

Although few modifications are required for the reactor and its support systems, the reactor and support systems have been reanalyzed to demonstrate that their functions are unaffected by operation at power uprate conditions, with adequate margin remaining. This is verified as part of the NRC review and approval of operation at higher power level.

The project description is more specifically described in the Site Permit Application and in the Environmental Impact Statement.

III. DESIGNATED SITE

The site for the extended power uprate project is the Prairie Island Nuclear Generating Plant.

The PINGP consists of two 575 MWe gross (550 MWe net), two-loop, pressurized-water nuclear reactors. The reactors are referred to as Unit 1 and Unit 2. The 560-acre plant site and the associated transmission and other facilities are in Red Wing, Minnesota, on the western bank of the Mississippi River in Goodhue County. The site is approximately 30 miles southeast of St. Paul.

The project location and site layout are shown in **Attachment 1**. The site is more specifically described in the Site Permit Application and in the Environmental Impact Statement.

IV. PERMIT CONDITIONS

The following conditions shall apply to the construction of the facility.

A. **Contact Information.** At least fourteen (14) days prior to the start of each of the refueling outages, the Permittee shall advise the Commission in writing of the person or persons designated as the contact representative for the Permittee. This person's address, phone number, and emergency phone number shall be provided to the Commission, who may make the information available to local residents, public officials and other interested persons. The Permittee may change its field representative at any time upon written notice to the Commission.

B. **Increased Power Level.** Within 30 days of achieving operations at the increased EPU power levels, the Permittee shall notify the Commission in writing of the increased power level achieved and address any issues affecting the ability of the plant to achieve its anticipated power output as a result of the uprate.

C. **Work Completion.** Within 120 days of the plant's return to service following the Unit 1 Outage and Unit 2 Outage, the Permittee shall notify the Commission in writing of the completion of the EPU work performed during the respective outage. The communication shall address the main modifications and whether any significant issues were encountered with the implementation of each.

D. **Other Requirements.** The Permittee shall comply with all applicable state rules and statutes. The Permittee shall obtain all required permits, or permit amendments required for the project and comply with the conditions of these permits.

E. **Delay in Construction.** If the Permittee has not commenced construction or improvement of the project within four (4) years from the date of issuance of this Permit, the Commission shall consider suspension of the Permit in accordance with Minn. Rule 7850.4700.

F. **Adherence to Xcel Energy's Excavation and Trenching Controls.** For any subsurface work performed relative to this permit, Xcel Energy shall adhere to the facility's Excavation and Trenching procedures in order to protect archeological and historic resources.

G. Study of the Impact of Thermal Discharge on Ice Formation on Lake Pepin. Within 12 months of the issuing of this permit, the Permittee shall provide, as a compliance filing to the Commission, a report on the potential impact of the PINGP's thermal discharge on the ice formation on Lake Pepin. The report shall include, at a minimum: 1) a review and analysis of previous studies and current data, and 2) a detailed plan of action if additional data collection is deemed necessary. The applicant shall seek advice from the Minnesota Pollution Control Agency (MPCA) in this evaluation and the development of a plan of action, if one is determined to be necessary. The MPCA is the state agency authorized to implement the NPDES Permit Programs and that regulates the PINGP's thermal discharges through the NPDES permit program. The applicant shall also submit the report to the Minnesota Department of Natural Resources when the filing is made to the Commission.

H. Expansion of Tritium Monitoring in Groundwater. Within 6 months of the issuing of this permit, the Permittee shall provide, as a compliance filing to the Commission, an assessment of the existing tritium monitoring program at the PINGP. The assessment shall include, at a minimum: 1) a description of the current PINGP Tritium Monitoring Program and historic data, 2) a comparison relative to the NEI guidelines, 3) the PINGP's involvement and participation in industry initiatives regarding tritium monitoring, 4) a discussion of the discharge of sump water to the land-locked area, and 5) proposed modifications to the existing program. Specifically, the assessment will address issues on monitoring technology, the number of wells to be monitored, the location of the wells, the frequency of the sampling of the wells, field and laboratory methodologies, and detection limits. The assessment should also address opportunities to increase/improve the availability of public information and public relations regarding the tritium testing program and results. The Permittee shall involve the Minnesota Department of Health (MDH) in developing its plan and shall provide MDH a copy of its compliance filing to the Commission.

V. PERMIT AMENDMENT

This permit may be amended by the Commission. Any person may request an amendment of this permit pursuant to Minn. Rule 7850.4900 by submitting a request to the Commission in writing describing the amendment sought and the reasons for the amendment. The Commission will mail notice of receipt of the request to the Permittee. The Commission may amend the permit after affording the Permittee and interested persons such process as is required.

VI. TRANSFER OF PERMIT

The Permittee may request that the Commission transfer this permit to another person or entity pursuant to Minn. Rule 7850.5000. The Permittee shall provide the name and description of the person or entity to whom the permit is requested to be transferred, the reasons for the transfer, a description of the facilities affected, and the proposed effective date of the transfer. The person to whom the permit is to be transferred shall provide the Commission with such information as the Commission shall require in determining whether the new permittee can comply with the conditions of the permit. The Commission may authorize transfer of the permit after affording the Permittee, the new permittee, and interested persons such process as is required.

VII. REVOCATION OR SUSPENSION OF THE PERMIT

The Commission may initiate action to suspend or revoke this permit at any time. Grounds for suspension or revocation include:

1) A false statement was knowingly made in the application or in accompanying statements or studies required of the applicant, and a true statement would have warranted a change in the Commission's findings;

2) There has been a failure to comply with material conditions of this permit, or there has been a failure to maintain health and safety standards; or

3) There has been a material violation of a provision of an applicable statute or rule or an order of the Commission.

In the event the Commission shall determine that it is appropriate to consider suspension or revocation of this permit, it shall act in accordance with all applicable statutes and rules, including Minnesota Statutes Section 216E.14. The Commission may require the Permittee to undertake corrective measures in lieu of suspending or revoking this permit pursuant to Minn. Rule 7850.5100.

VIII. PERMIT COMPLIANCE

Failure to timely and properly make compliance filings required by this permit is a failure to comply with the conditions of this permit. Compliance filings must be eFiled through the Department of Commerce eDocket system in accordance with the Commission procedure for compliance filings attached to this permit (**Attachment 2**).

For ease of use, a compilation of compliance filings required under this permit is attached (**Attachment 2**).

IX. RIGHT OF ENTRY

The Permittee shall allow Commission designated representatives to perform the following, upon reasonable notice, upon presentation of credentials and at all times in compliance with the Permittee's site safety and security standards:

1) To enter upon the facilities easement of the property for the purpose of obtaining information, examining records, and conducting surveys or investigations;

2) To bring such equipment upon the facilities easement of the property as is necessary to conduct such surveys and investigations;

3) To sample and monitor upon the facilities easement of the property; and

4) To examine and copy any documents pertaining to compliance with the conditions of this Permit.

X. COMPLAINT PROCEDURE

1) Within thirty (30) days of receiving this Site Permit, the Permittee shall submit to the Commission the Permittee's procedures to be used to receive and respond to substantial complaints received regarding the implementation of this project. The procedures shall be in accordance with the requirements set forth in the Commission complaint report procedure also attached to this permit (**Attachment 3**).

2) The Permittee shall advise the Commission in writing (eFile) of any substantial complaints received by the Permittee during the course of construction that are not resolved within thirty (30) days of the complaint.

3) Upon request, the Permittee shall assist the Commission with the disposition of unresolved or longstanding complaints. This assistance shall include, but is not limited to, the submittal of complaint correspondence and complaint resolution efforts.

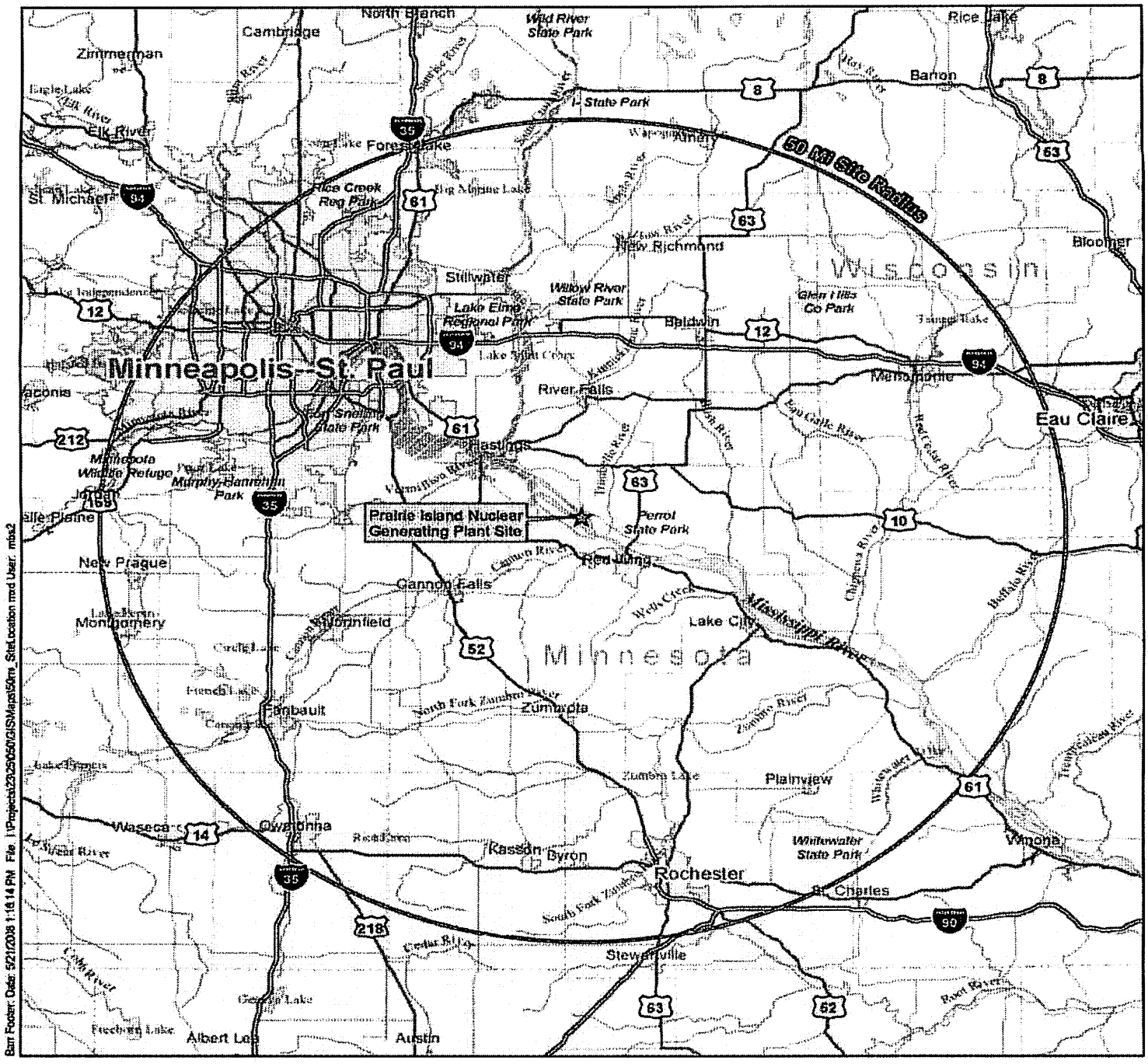

Figure 1-1

SITE LOCATION MAP
50 MILE RADIUS
Prairie Island Uprate
Site Permit
Red Wing, MN

MINNESOTA PUBLIC UTILITIES COMMISSION COMPLIANCE FILING PROCEDURE FOR PERMITTED ENERGY FACILITIES

1. **Purpose**

To establish a uniform and timely method of submitting information required by Minnesota Public Utilities Commission (PUC) energy facility permits.

2. **Scope and Applicability**

This procedure encompasses all compliance filings required by permit.

3. **Definitions**

Compliance Filing – A sending (filing) of information to the PUC, where the information is required by a PUC site or route permit.

4. **Responsibilities**

A) The permittee shall eFile all compliance filings with Dr. Burl Haar, Executive Secretary, PUC, through the Department of Commerce (DOC) eDocket system. The system is located on the DOC website: https://www.edockets.state.mn.us/EFiling/home.jsp General instructions are provided on the website. Permittees must register on the website to eFile documents.

B) All filings must have a cover sheet that includes: 1) Date 2) Name of submitter / permittee 3) Type of Permit (Site or Route) 4) Project Location 5) Project Docket Number 6) Permit Section Under Which the Filing is Made 7) Short Description of the Filing

C) Filings that are graphic intensive (e.g., maps, plan and profile) must, in addition to being eFiled, be submitted as paper copies and on CD. Copies and CDs should be sent to: 1) Dr. Burl W. Haar, Executive Secretary, Minnesota Public Utilities Commission, 121 7th Place East, Suite 350, St. Paul, MN, 55101-2147, and 2) Department of Commerce, Energy Facility Permitting, 85 7th Place East, Suite 500, St. Paul, MN, 55101-2198. Additionally, the PUC may request a paper copy of any eFiled document.

PERMITTEE: Xcel Energy
PROJECT LOCATION: Goodhue County

PERMIT TYPE: LEPGP Site Permit
PUC DOCKET NUMBER: E002/GS-08-690

Filing Number	Permit Section	Description	Due Date
1	Section IV.A.	Contact Information	At least fourteen (14) days prior to the start of each of the refueling outages in 2014 and 2015.
2	Section IV.B.	Increased Power Level Notification	Within 30 days of achieving increased EPU power levels.
3	Section IV.C.	Work Completion	Within 120 days of the plant's return to service following completion of each of the 2014 and 2015 refueling outages.
4	Section IV. G	Study: Lake Pepin Ice Formation	Within 12 months of the issuing of this permit, the Permittee shall provide, as a compliance filing to the Commission, a recommendation for a plan to study the potential impact of the PINGP's thermal discharge on the ice formation on Lake Pepin.
5	Section IV. H	Tritium Monitoring Program	Within 6 months of the issuing of this permit, the Permittee shall provide, as a compliance filing to the Commission, a plan to enhance the tritium monitoring programs at the PINGP.
6	Section X	Complaint Procedure	Within 30 days of receiving this Site Permit.

MINNESOTA PUBLIC UTILITIES COMMISSION COMPLAINT REPORT PROCEDURES FOR LARGE ELECTRIC POWER GENERATING PLANTS

1. Purpose

To establish a uniform and timely method of reporting complaints received by the permittee concerning the permit conditions for site preparation, construction, cleanup and restoration, special conditions, other requirements, and resolution of such complaints.

2. Scope

This reporting plan encompasses complaint report procedures and frequency.

3. Applicability

The procedures shall be used for all complaints received by the permittee.

4. Definitions

Complaint – A statement presented by a person expressing dissatisfaction, resentment, or discontent as a direct result of the generation uprate and associated facilities. Complaints do not include requests, inquiries, questions or general comments.

Telephone Complaint – A person presenting a complaint by telephone shall indicate whether the complaint relates to (1) a substantive routing permit matter, (2) a site matter, or (3) a compensation matter. All callers must provide the following information when presenting a complaint by telephone: (1) name;
(2) date and time of call; (3) phone number; (4) email address (if available); (5) home address; (6) parcel number.

Substantial Complaint – Written complaints alleging a violation of a specific site permit condition that, if substantiated, could result in permit modification or suspension pursuant to the applicable regulations.

Person – An individual, partnership, joint venture, private or public corporation, association, firm, public service company, cooperative, political subdivision, municipal corporation, government agency, public utility district, or any other entity, public or private, however organized.

5. Responsibilities

Everyone involved with any phase of the site permit work is responsible to ensure expeditious and equitable resolution of all complaints. It is therefore necessary to establish a uniform method for documenting and handling complaints related to this large electric generating plant project. The following procedures will satisfy this requirement:

A. The permittee shall document all complaints by maintaining a record of all applicable information concerning the complaint, including the following:

1. Name of the permittee and project.
2. Name of complainant, address and phone number.
3. Precise property description or tract numbers (where applicable).
4. Nature of complaint.
5. Response given.
6. Name of person receiving complaint and date of receipt.
7. Name of person reporting complaint to the PUC and phone number.
8. Final disposition and date.

B. The permittee shall assign an individual to summarize complaints for transmittal to the Commission.

6. Requirements

The permittee shall report all complaints to the Commission according to the following schedule:

Immediate Reports – All substantial complaints shall be reported to the Commission by phone or by e-mail the same day received or on the following working day for complaints received after working hours. Such reports are to be directed to site permit compliance at the following: DOC.energypermitcompliance@state.mn.us or 1-800-657-3794. Voice messages are acceptable.

Monthly Reports – By the 15th of each month, a summary of all complaints, including substantial complaints received or resolved during the preceding month. Such summaries shall be sent to Dr. Burl W. Haar, Executive Secretary, Minnesota Public Utilities Commission, Metro Square Building, 121 7th Place East, Suite 350, St. Paul, MN 55101-2147. A copy of each complaint shall be sent to Permit Compliance, Minnesota Department of Commerce, 85 7th Place East, Suite 500, St. Paul, MN 55101-2198.

Unresolved Complaints – The permittee shall submit all unresolved complaints to the PUC for resolution by the Commission, where appropriate, no later than 45 days after the date of the submission.

7. Complaints Received by the PUC

Copies of complaints received directly by the PUC from aggrieved persons regarding site preparation, construction, cleanup, restoration, operation and maintenance shall be promptly sent to the permittee.

Initial Screening – Commission staff shall perform an initial evaluation of unresolved complaints submitted to the Commission. Complaints raising substantive site permit issues shall be processed and resolved by the Commission. Staff shall notify permittee and the complainant if it determines that the complaint is a substantial complaint. With respect to such complaints, each party shall submit a written summary of its position to the Commission no later than ten days after receipt of the staff notification. Staff shall present briefing papers to the Commission, which shall resolve the complaint within twenty days of submission of the briefing papers.

Condemnation/Compensation Issues – If the Commission's staff initial screening determines that a complaint raises issues concerning the just compensation to be paid to landowners on account of permittee acquisition of site property rights, staff shall recommend to the Executive Secretary that the matter be resolved under the provisions of Minnesota Statutes, Chapter 117. If the Executive Secretary concurs, he shall so report to the Commission and the matter shall be dealt with in the high voltage transmission line condemnation proceedings as an issue of just compensation.