
ADVISORY TASK FORCE

SUMMARY OF WORK

**XCEL ENERGY PROPOSED
EXTENDED POWER UPRATE**

&

REQUEST FOR ADDITIONAL DRY CASK STORAGE

PRAIRIE ISLAND NUCLEAR GENERATING PLANT UPRATE

RED WING, MINNESOTA

PUC Docket Number: E002/CN-08-510
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INTRODUCTION

Xcel Energy has requested approval from the Public Utilities Commission (Commission) for additional dry cask storage to support the continued operation of the Prairie Island Nuclear Generating Plant (PINGP) Unit 1 until 2033 and Unit 2 until 2034. On May 16, 2008, Xcel Energy filed, with the Commission, a Certificate of Need (CON) for additional dry cask storage at the existing Independent Spent Fuel Storage Installation (ISFSI) at the Prairie Island Nuclear Generating Plant (PINGP). This filing was pursuant to Minn. Stat. § 116C.83, Minn. Stat. § 216B.243, and Minn. Rule 7855.

Xcel Energy is also proposing to increase the electrical output of the PINGP by 164 MW through a process termed an Extended Power Uprate (EPU).

The proposed EPU project requires Xcel Energy to obtain a CON and a large electric power generating plant (LEPGP) Site Permit from the Commission pursuant to sections 216C.05 to 216C.30 and chapter 216E, respectively.

Xcel Energy filed an application for a CON for the EPU project with the Commission on May 16, 2008, in accordance with Minnesota Rules Chapter 7829 and 7849.

On July 15, 2008, the Commission accepted the two CON applications as complete (July 22, 2008 order). The docket numbers for the certificate of need for the Extended Uprate and the Additional Dry Cask Storage are E002/CN-08-509 and E002/CN-08-510, respectively.

On August 1, 2008, Xcel Energy submitted a LEPPG Site Permit application to the Commission for the proposed Prairie Island Nuclear Generating Plant (PINGP) Extended Power Uprate (EPU) project.

On August 14, 2008, the Commission considered the completeness of the Site Permit Application at its regularly scheduled meeting. The Commission Order, dated August 15, 2008, accepted the application as complete.

On September 11, 2008, the Commission considered a citizen petition requesting the formation of an advisory task force (ATF). In an Order dated October 10, 2008, the Commission granted the request and authorized the Office of Energy Security (OES) to establish an ATF.

This is a summary of the advisory task force's work.

To learn more about the proposed PINGP EPU and Request for Additional Dry Cask Storage projects or to view relevant documents visit the project webpage at:

<http://energyfacilities.puc.state.mn.us/Docket.html?Id=19602>

BACKGROUND

The PINGP utilizes a pressurized-water reactor (PWR). In a pressurized-water reactor, a nuclear reaction in the reactor core generates heat, which heats water in the primary loop. This heat is transferred to the secondary loop in the steam generators, and the steam produced inside the steam generators is directed to turbine generators to produce electrical power. The exhaust steam is cooled by a tertiary loop in a condenser and returned to the steam generators to be boiled again. The water in all three loops is force-circulated by electrically powered pumps. Emergency cooling water is supplied by other pumps, which can be powered by onsite diesel generators.

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 (See Figure).

Unit 1 began commercial operation in December 1973, and Unit 2 began operations in December 1974. The initial NRC license for each unit was for a period of 40 years. The initial license will expire in 2013 and 2014 for Unit 1 and Unit 2, respectively. Xcel Energy submitted an application to the NRC for an additional 20-year license extension for both units on April 15, 2008.

Project Description – Additional Dry Cask Storage

The PINGP currently has State authorization for enough dry casks (e.g., 29) to store the spent fuel generated until the end of the current operating licenses in 2013 and 2014; there are currently 24 dry casks at the PINGP ISFSI. In order for the reactors to continue operation through a license renewal period to 2033 and 2034, up to an additional 35 dry casks would be needed to be added to the existing ISFSI.

The ISFSI consists of a lighted area, approximately 720 feet long and 340 feet wide, roughly 5-1/2 acres in size, located west of the PINGP cooling towers. The tallest structures are the light poles that are approximately 40 feet tall. Two fences surround the facility with a clear zone between the two fences. A 17 ft high earthen berm surrounds the ISFSI. The site is monitored with cameras and other security devices. An access road connects the ISFSI to the rest of the PINGP.

Within the storage area, the casks are currently stored on two reinforced concrete pads, 36' x 216' x 3'. The additional casks necessary to support license renewal would reside on new 18' concrete pads to be located immediately south of each of the existing concrete pads.

The storage facility is laid out so that the storage pads could be extended to the north and south to accommodate a total of 100 casks without having to change the security perimeter; if PINGP is shut down in 2034, a total of 98 dry casks will be needed to store all the fuel generated during the 60 years of operation.

Project Description – Extended Power Uprate

The proposed 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 2012 refueling outage and on Unit 2 during the 2015 refueling outage.

Power uprates in a pressurized water reactor (PWR) do not require significant modifications to the reactor, nuclear steam supply system, or emergency core cooling systems. 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. eighteen to twenty 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.

Environmental Review Certificate of Need Additional Dry Cask Storage

An environmental impact statement (EIS) is required under chapter 116C (and 116D) for a proposal to construct and operate a new or expanded independent spent-fuel storage installation. The Department of Commerce shall be the responsible governmental unit for the environmental impact statement. Prior to finding the EIS adequate, the commissioner must find that the applicant has demonstrated that the facility is designed to provide a reasonable expectation that the operation of the facility will not result in groundwater contamination in excess of the standards established in section 116C.76, subdivision 1, clauses (1) to (3).

Environmental Review Certificate of Need Extended Power Uprate

The Department of Commerce Office of Energy Security (OES) prepares an Environmental Report (ER) on proposed large electric power generating plants that come before the Commission for a determination of need (Minn. Rules 7849.7100); the proposed Extended Power Uprate falls within this definition. The ER must contain information on the human and environmental impacts of the proposed project associated with the size, type, and timing of the project, system configurations, and voltage. The environmental report must also contain information on alternatives to the proposed project and address mitigating measures for anticipated adverse impacts.

Environmental Review LEPGP Site Permit Extended Power Uprate

The OES EFP staff prepares a document called an Environmental Impact Statement (EIS). An EIS is a written document that describes the human and environmental impacts of a proposed large electric power generating plant (and selected alternative sites) and methods to mitigate such impacts. The public has the opportunity to comment on the scope of the EIS and the draft EIS through public comment periods and at OES sponsored information meetings.

Minnesota Rule 7849.7100, Subpart 2, provides that in the event an applicant for a certificate of need for a LEPGP applies to the Commission for a site permit prior to the time the OES completes the environmental report, the OES may elect to prepare an environmental impact statement (EIS) in lieu of the required environmental report. If the documents are combined, OES includes in the EIS the analysis of alternatives required by part 7849.7060, but is not required to prepare an environmental report under part 7849.7030.

ADVISORY TASK FORCE

The statutes and rules governing the review of Xcel Energy's Application for a Site Permit for the PINGP EPU Project (PUC Docket E002/GS-08-690) contain provisions for the establishment of an Advisory Task Force; these provisions can be found in Minn. Stat. 216E.08 and Minn. Rule 7849.5270, respectively.

The statutes and rules pertaining to environmental review for Xcel Energy's Applications for Certificates of Need (Docket E002/CN-08-509 and Docket E002/CN-08-510) do not contain provisions for the establishment of an advisory task force.

However, in the event that the DOC Commissioner combines the environmental review procedures for a certificate of need (i.e., environmental report requirements) with those for the LEPGP Site Permit (i.e., environmental impact statement requirements), the procedures of Minn. Rule 7849.5010 to 7849.6500 must be followed (Minn. Rule 7849.7100, subpart 3).

For dockets undergoing review in accordance with the Power Plant Siting Act (Minn. Rule 7849.5270 and Minn. Stat. 216E.08, subdivision 1), the Commission has the authority to appoint an advisory task force, determine its charge and size, and appoint its members. If the commission decides not to appoint a citizen advisory task force and a person would like such a task force appointed, the person

may request that the commission create a citizen advisory task force and appoint its members. Upon receipt of such a request, the commission shall place the matter on its agenda.

The ATF may be comprised of as many persons as may be designated by the Commission, but shall include at least one representative from each of the following: Regional development commissions, counties and municipal corporations and one town board member from each county in which a site is proposed to be located.

The Commission must specify in writing the charge to the ATF upon appointment. The charge shall include the identification of additional sites or particular impacts to be evaluated in the environmental impact statement.

The ATF expires upon completion of its charge, release of the Scoping Decision, or a date specified by the Commission, whichever occurs first. This termination language was added to Minn. Stat. 216E.08 during the 2001 legislative session (Chapter 212, article 7, section 18, 19).

On September 11, 2008, the Commission received two requests for the establishment of an Advisory Task Force. The first request was from Mr. Sigurd Anderson representing the Communities United for Responsible Energy (CURE) and the second request was from a Mr. John Howe (<http://energyfacilities.puc.state.mn.us/documents/19602/Sigurd-Anderson-on-CATF.pdf>).

On October 10, 2008, the Commission released an Order authorizing the OES to establish an advisory task force (<http://energyfacilities.puc.state.mn.us/documents/19602/PUC%20Order%20ATF.pdf>)

Structure

The membership of the advisory task force, as stated in the Commission's Order, would be solicited from the following groups:

- A. Local units of government:
 - Goodhue County
 - The City of Red Wing
- B. Prairie Island Native American Community:
 - Two Members
- C. A representative of the townships of Goodhue County.
- D. Four private citizens, who live, work or own property on or near the PINGP.
- E. Four additional members from nongovernmental organizations (Environmental Interest Groups, Chamber of Commerce, and other stakeholders).

Charge

The charge to the advisory task force, as stated in the Commission's Order, was as follows:

The Advisory Task Force members will assist the OES EFP staff in developing the scope of environmental review for the EIS being prepared for the three PINGP dockets currently before the Commission (PUC Dockets E002/GS-08-690, E002/CN-08-509 and E002/CN-08-510).

The OES EFP released a Draft Scoping Document on August 25, 2008; this document will service as the foundation of the ATF's work. Tasks relating to development of the scope of the environmental review will include:

1. Familiarize the membership of the ATF with the proposed projects by reviewing the Certificate of Need applications and the LEPGP Site Permit application;
2. Review the Draft Scoping Document produced by the OES EFP staff; and
3. Assist in determining specific impacts and issues of local concern that should be assessed in the EIS by adding detail to the Draft Scoping Document.

The Task Force was set to expire upon completing the above charge or upon designation by the Commissioner of the DOC of Scoping Decision.

Membership

Fourteen individuals were appointed to the advisory task force, they are:

NAME	ORGANIZATION
LUG	
Dr. Ronald Allen	Goodhue County Commissioner
Stephen Castner	Red Wing City Council Member
Carol Duff	Red Wing City Council President
Joan Marshman	Florence Township Supervisor
David Tincher	Hay Creek Township, Deputy Clerk
NGO	
Sigurd Anderson	CURE
Lea Foushee	NAWO
Michelle Rosier	Sierra Club North Star Chapter
PRAIRIE ISLAND NATIVE COMMUNITY	
Wayne Wells	Prairie Island Community
Philip Mahowald	Prairie Island Community
INDIVIDUALS	
John Howe	Private Citizen
Bruce McBeath	Private Citizen
Andru Peters	Private Citizen
Katie Himanga	Private Citizen

METHODOLOGY

The Advisory Task Force (ATF) met formally three times in October 2008, the 8th, 15th and 22nd. The meetings were open to the public, and frequently additional people attended to listen to the discussion. The ATF, through a facilitated process, reviewed the Xcel Energy proposal, discussed relevant issues, and suggested items for scope of the EIS.

To facilitate the process, OES staff assembled information packets for each ATF member that contained: 1) electronic and paper versions of each application; 2) ATF membership information; 3) a description of the ATF structure and charge; 4) flow charts of the regulatory review process; 5) copies of Xcel Energy's power point presentation; 6) the Draft Scoping Document prepared by OES; 7) the proposed meeting agenda; and 8) the EIS scoping work sheets developed by OES staff.

The approach used by the OES facilitator was to have the ATF familiarize themselves with the proposed project and the regulatory review process, then work on the task of assisting the OES staff in identifying specific impacts and issues of local concern by documenting the ATF's suggestions on the EIS scoping worksheets (**Appendix A**). The EIS worksheets were developed to aid the ATF in focusing the discussion on the Draft Scoping Document and to serve as a means of documenting the ATF's suggestions.

The first ATF meeting was used to: 1) introduce the ATF members; 2) allow Xcel Energy to give a presentation on its proposal and to take questions; 3) to go through the regulatory review process; 4) to review the Draft Scoping Document; and 5) to discuss the scoping worksheets. See the meeting minutes in **Appendix B**.

At the second meeting the ATF reviewed the Commission Order establishing the ATF and spent some additional time discussing the draft scoping document/EAW. The ATF membership then divided into two groups; Group 1 considered the issues relative to the EPU and Group 2 considered issues relative to the ISFSI expansion. Each group completed the EIS Scoping Worksheets for their area. Once the allotted time was up the ATF reassembled, reviewed and discussed the issues that each group raised. Issues in which a consensus was reached were placed on the ATF master EIS Scoping Worksheet; Ms. Katie Himanga volunteered to serve as scribe, recording the ATF's suggestions on a "master" EIS worksheet.

During the third meeting the ATF reviewed the worksheets completed at the prior meeting. The remainder of the meeting was used to make clarifications, deletions and additions to the EIS worksheets; as time was running out Ms. Himanga requested that she have additional time to complete the master worksheets. Also, some ATF members requested additional time to allow members (including individual member comments) to submit separate comments into the ATF record.

The ATF and its individual members were given until end of business on Monday, October 27, 2008, to submit comments for inclusion into the record to the OES staff; a number of the ATF members met informally, outside of the facilitated process on Saturday, October 25, 2008, for further discussion. The submitted comments are contained in **Appendix C**.

SUGGESTED IMPACTS AND ISSUES TO BE CONSIDERED

On October 27, 2008, the ATF submitted the completed EIS scoping work sheets to the OES staff. The completed worksheets can be found in **Appendix D**.

APPENDIX A. Blank EIS Scoping Worksheets

APPENDIX B. ATF Meeting Minutes

APPENDIX C. Additional ATF and Member Comments

APPENDIX D. Completed EIS Worksheets