Nuclear—A Clean Energy Future

Decision to Seek License Renewal
In fall 2004, Xcel Energy’s board of directors authorized pursuing license renewal for up to 20 years for both the Monticello and Prairie Island plants. The federal Nuclear Regulatory Commission (NRC) renewed Monticello’s operating license in late 2006, allowing that plant to operate for an additional 20 years to 2030. Xcel Energy submitted an application to renew Prairie Island’s operating licenses for its two units in April 2008. These operating licenses expire in 2013 and 2014 and if renewed could operate until 2033 and 2034.

Xcel Energy weighed several factors in deciding to pursue license renewal at its plants:
- Plant conditions;
- Safety record;
- Ongoing need for the energy source;
- Environmental benefits; and
- The economics of continued operation.

The benefits of license renewal, continued operations and capacity expansions at the nuclear plants include:
- Reducing carbon emissions by displacing output from new and existing fossil-fueled plants;
- Saving customers about $1.1 billion over the 20-year license-extension periods of the two plants; and
- Providing a fuel diversity hedge against future natural gas prices.

In December 2007, Xcel Energy filed its Resource Plan with the Minnesota Public Utilities Commission. The plan, which covers 2008 through 2022, describes how the company aims to meet renewable energy, conservation and greenhouse gas reduction goals established by the Minnesota Legislature while at the same time meeting customers’ increasing demand for electricity. Xcel Energy will accomplish these goals cost-effectively by:
- Relying more on wind power and other renewable resources;
- Increasing energy conservation; and
- Increasing reliance on non-greenhouse-gas-emitting nuclear power, which in 2007 made up 26 percent of Xcel Energy’s fuel mix in the Upper Midwest.

License renewal also contributes to economic stability and employment in the communities near the plants. Monticello employs more than 500 people and Prairie Island more than 600 people full time.

General information on Prairie Island Nuclear Generating Plant
The Prairie Island Nuclear Generating Plant is a two-unit pressurized water reactor of Westinghouse design. The plant is located on the bank of the Mississippi River about 40 miles southeast of the Twin Cities and about five miles north of Red Wing, Minn. The Unit 1 reactor began operating in December 1973 and the Unit 2 reactor in December 1974.

Each reactor has a capacity of 550 megawatts, for a total plant output of 1,100 megawatts. That’s enough electricity to power about 1 million homes.
Prairie Island's License Renewal Process
The license renewal process proceeds along two tracks -- one for review of safety issues and another for environmental issues. The NRC's license renewal process takes about 22 months.

NRC License Renewal Review Process

Safety
The NRC subjects nuclear power plants to a rigorous program of oversight, inspection, preventive and corrective maintenance, equipment replacement and equipment testing. These programs ensure nuclear plant equipment continues to meet safety standards, no matter how long a plant has been operating. Because of these sustained maintenance programs, the date a nuclear plant started initial operation is not a reliable indication of its age or condition.

Constant oversight by the NRC ensures a plant will operate safely throughout its life.

Environmental Impact
License renewal reviews also consider the potential environmental impact of continued plant operation. Issues reviewed include water use conflicts, water temperature changes and potential effects on fish and shellfish, refurbishment impacts on the environment, threatened or endangered species, as well as concerns regarding electromagnetic fields, socioeconomic impacts on housing, public utilities, education, land use, public services, historic and archeological resources and severe accidents.

The environmental regulatory process allows the public an opportunity to express concerns about environmental impacts related to license renewal. The NRC will conduct an environmental audit, using 15 to 20 environmental experts, to develop a Supplemental Environmental Impact Statement.
The license-renewal review requires a public meeting near the Prairie Island plant. Based on this process and independent review, the NRC will issue a preliminary recommendation on the acceptability of Xcel Energy’s license renewal action.

Next, a draft of Prairie Island’s supplement to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants (GEIS) will be released for public comment and a public meeting to discuss findings will be held.

After comments are addressed, the NRC will publish a final supplement to the GEIS and make a final recommendation on Prairie Island’s license renewal application. Transcripts of the meetings and draft supplements to license renewal can be viewed through the NRC Public Document Room.

More information regarding the license renewal process is available on the NRC Web site at www.nrc.gov.

Other filings in 2008 related to Prairie Island
In order to operate Prairie Island for an additional 20 years until 2033 and 2034, the plant will need additional storage containers to accommodate used fuel discharged from the reactors. In order to increase used fuel storage capacity at Prairie Island, Xcel Energy must get approval from the Minnesota Public Utility Commission (PUC) using the Certificate of Need (CON) process. This is a separate process from the NRC’s operating license renewal.

Xcel Energy plans to submit the application for a Certificate of Need to increase the used fuel storage capacity at Prairie Island in May 2008. The process takes approximately 18 months, and a decision is expected prior to the end of 2009. If the PUC approves additional storage, its order will be tabled and the PUC will submit a report to the Minnesota Legislature. The order will be tabled for one regular legislative session. The Legislature may choose to review and modify the PUC’s order. If the Legislature takes no action, the PUC’s order would go into effect on June 1, 2010.

If the NRC renews Prairie Island’s operating licenses and state officials authorize additional used fuel storage, Xcel Energy plans to increase the electrical output of the Prairie Island units. In the same filing with the PUC that seeks approval of additional used fuel storage, Xcel Energy plans to include Certificate of Need and Site Permit applications requesting permission to upgrade each unit at Prairie Island by approximately 82 megawatts. The proposed upgrades would bring total plant capacity to approximately 1,264 megawatts.

If approved by the PUC, plans to increase the electrical output will be implemented including asking the NRC to amend the plant’s renewed operating licenses. The NRC’s review will ensure that the power upgrades are in accordance with NRC regulations and are safe. The license amendment request would be submitted in 2010 and if approved, Unit 1’s additional power would come on line in 2012 and Unit 2’s additional power would come on line in 2015.

For more information on Prairie Island, contact (651) 388-1121, ext. 4967.