

December 21, 2001

Mr. Mano Nazar  
Site Vice President  
Prairie Island Nuclear Generating Plant  
Nuclear Management Company, LLC  
1717 Wakonade Drive East  
Welch, MN 55089

SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2 - REQUEST  
FOR ADDITIONAL INFORMATION REGARDING THE APPLICATION FOR  
CONVERSION TO IMPROVED TECHNICAL SPECIFICATIONS, SECTION 3.1  
(TAC NOS. MB0695 AND MB0696)

Dear Mr. Nazar:

By application dated December 11, 2000, as supplemented March 6, June 5, July 3, August 13, and November 12, 2001, Nuclear Management Company, LLC, submitted a license amendment request to convert the current Technical Specifications (TSs) for the Prairie Island Nuclear Generating Plant, Units 1 and 2, to a set of improved TSs (ITS).

Enclosed is the Nuclear Regulatory Commission staff's request for additional information (RAI) on Section 3.1, "Reactivity Control," of the subject ITS submittal. The contents of the enclosed RAI have been previously forwarded to Mr. Dale Vincent of your staff to facilitate any questions or clarifications on the RAI. Subsequent dialogues have clarified the staff's understanding on a number of items, and thus requires no further information as noted in the enclosure. For the rest of the items in the enclosure, please respond within 60 days from the date of this letter.

Please contact me on (301) 415-1392 if you have any questions regarding this RAI.

Sincerely,

*/RA/*

Tae Kim, Senior Project Manager, Section 1  
Project Directorate III  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket Nos. 50-282 and 50-306

Enclosure: Request for Additional Information

cc w/encl: See next page

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Prairie Island Nuclear Generating Plant,  
Units 1 and 2

cc:

J. E. Silberg, Esquire  
Shaw, Pittman, Potts and Trowbridge  
2300 N Street, N. W.  
Washington, DC 20037

Site Licensing Manager  
Prairie Island Nuclear Generating Plant  
Nuclear Management Company, LLC  
1717 Wakonade Drive East  
Welch, MN 55089

Adonis A. Neblett  
Assistant Attorney General  
Office of the Attorney General  
455 Minnesota Street  
Suite 900  
St. Paul, MN 55101-2127

U.S. Nuclear Regulatory Commission  
Resident Inspector's Office  
1719 Wakonade Drive East  
Welch, MN 55089-9642

Regional Administrator, Region III  
U.S. Nuclear Regulatory Commission  
801 Warrenville Road  
Lisle, IL 60532-4351

Mr. Stephen Bloom, Administrator  
Goodhue County Courthouse  
Box 408  
Red Wing, MN 55066-0408

Commissioner  
Minnesota Department of Commerce  
121 Seventh Place East  
Suite 200  
St. Paul, MN 55101-2145

Tribal Council  
Prairie Island Indian Community  
ATTN: Environmental Department  
5636 Sturgeon Lake Road  
Welch, MN 55089

Mr. Roy A. Anderson  
Executive Vice President and  
Chief Nuclear Officer  
Nuclear Management Company, LLC  
700 First Street  
Hudson, WI 54016

Nuclear Asset Manager  
Xcel Energy, Inc.  
414 Nicollet Mall  
Minneapolis, MN 55401

PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2  
REQUEST FOR ADDITIONAL INFORMATION  
ITS SECTION 3.1, REACTIVITY CONTROL

**RAI 3.1-1**

ITS 3.1.2 CORE REACTIVITY  
ITS SR 3.1.2.1 and SR 3.1.2.2  
STS 3.1.3 CORE REACTIVITY  
STS SR 3.1.3.1  
JFD PA3.1-81

STS SR 3.1.3.1 has been divided into two SRs in the ITS, and the Frequency note has been made a note to the ITS SR 3.1.2.2 descriptor.

**Comment:** There does not appear to be any reason, other than preference, for the first deviation from the STS; dividing the SR in two. While the division of the STS SR into two ITS SRs, according to frequency, makes little difference, the placement of the frequency note out of the frequency column appears incorrect. Recommend adopting the STS where there is not a good reason for deviating.

**RAI 3.1-2**

ITS 3.1.3 ISOTHERMAL TEMPERATURE COEFFICIENT (ITC)  
ITS 3.1.3 Conditions C and D  
ITS SR 3.1.3.3  
STS 3.1.4 MODERATOR TEMPERATURE COEFFICIENT  
STS 3.1.4 Conditions C and D  
STS SR 3.1.4.3  
JFD PA3.1-84  
DOC M09

The ITS adopts the STS provisions to monitor the ITC lower limit during the operating cycle, with some modifications to the STS approach (and associated modifications to the Bases).

**Comment:** In adopting the modified STS approach to monitoring ITC, the ITS takes some of the periodic frequency requirements and puts them in Required Action C.1 and its associated Completion Time. Taking this approach results in having to add the otherwise unnecessary notes to the Condition C statement and Required Action C, and add an otherwise unnecessary Condition D. The new conditions and Required Actions are not consistent with NUREG-1431 as mistakenly stated in DOC M09. Recommend adopting the STS approach (in the ITS and associated Bases), modifying the SR notes only as necessary to maintain CTS requirements and current design limitations. Unnecessary preference changes are not acceptable in adopting the STS.

ENCLOSURE

**RAI 3.1-3**

ITS 3.1.3 ISOTHERMAL TEMPERATURE COEFFICIENT (ITC)

ITS SR 3.1.3.2 and ITS SR 3.1.3.3

STS 3.1.4 MODERATOR TEMPERATURE COEFFICIENT

STS SR 3.1.4.2 and STS SR 3.1.4.3

JFD PA3.1-84 and JFD PA3.1-85

DOC M11

The ITS adopts the STS provisions to monitor the ITC, with some modifications to the STS approach. The CTS currently does not have ITC SRs. In adopting STS SR 3.1.4.2 and STS SR 3.1.4.3, the point at which the SRs are performed is changed in ITS SR 3.1.3.2 and ITS SR 3.1.3.3 to conform to current plant practices; from prior to 300 ppm boron concentration to prior to exceeding 70% RTP.

**Comment:** In making this change the following unnecessary changes have been made: the SRs delete reference to the COLR while the ITS LCO indicates that the lower limit is in the COLR; the accepted STS SR word to “verify” has been replaced with the unconventional word “confirm”; and the 300 ppm requirement has been placed in the Completion Time for Required Action C.1. The changes are not consistent with NUREG-1431 as mistakenly stated in DOC M11. Recommend adopting the STS conventions where possible. Unnecessary preference changes are not acceptable in adopting the STS.

**RAI 3.1-4**

ITS 3.1.4 ROD GROUP ALIGNMENT LIMITS

ITS 3.1.4 LCO Statement

STS 3.1.5 ROD GROUP ALIGNMENT LIMITS

STS 3.1.5 LCO Statement

JFD TA3.1-86

In adopting the STS, including TSTF-107, the ITS LCO is formatted differently by not using the logical connector style of presentation.

**Comment:** The reason stated for not using the Logical Connector “AND” in the Limiting Conditions for Operation (LCO) statement is that it is not consistent with the Logical Connector description provided in TS Section 1.2, which addresses “Conditions, Required Actions, Completion Times, Surveillances, and Frequencies,” and examples are given for Logical Connector usage in Required Action cases only. In STS 3.1.5, with TSTF-107, the Logical Connector “AND” is used to connect two conditions stated in the TS LCO statement, and is not inconsistent with the description in TS Section 1.2. Recommend fully adopting the STS, including TSTF-107.

**RAI 3.1-5**

ITS 3.1.4 ROD GROUP ALIGNMENT LIMITS

ITS 3.1.4 LCO Statement

ITS SR 3.1.4.1

STS 3.1.5 ROD GROUP ALIGNMENT LIMITS

STS 3.1.5 LCO Statement

STS SR 3.1.5.1

JFD PA3.1-91

In adopting the STS, the wording of the LCO Statement in the ITS is changed by replacing the word "indicated" with the word "actual," resulting in the need for an additional change in the ITS of adding a note to SR 3.1.4.1.

**Comment:** Rod Position Indication (RPI) satisfies the criteria for inclusion as a Technical Specification (ITS 3.1.7), and therefore if RPI is inoperable ITS 3.1.7 Conditions would be entered. Therefore, the presumption in ITS 3.1.4 is that the indicated rod position is the actual position, and if the indicated rod position differs from the demand position indicator, the rod is presumed misaligned. If in the process of attempting to restore alignment it is found that the rod is in fact aligned and that it is an RPI that is inoperable, then ITS 3.1.4 is exited and ITS 3.1.7 is entered. ITS 3.1.4 involves comparing two rod position indication systems, the RPI System and the Demand Position Indication system, both of which are addressed by ITS 3.1.7. To compare actual rod position with only one of the indicating systems, which itself maybe the inoperable system, is not logical. In addition, in a TS it is not necessary to reference the requirements of another TS, and therefore the note that has been added in ITS SR 3.1.4.1 should be removed. Recommend adopting the STS wording.

### **RAI 3.1-6**

ITS 3.1.4 ROD GROUP ALIGNMENT LIMITS

ITS 3.1.4 Condition B Required Actions

ITS SR 3.2.1.1, ITS SR 3.2.1.2, and ITS SR 3.2.2.1

CTS 3.10.E.1

STS 3.1.5 ROD GROUP ALIGNMENT LIMITS

STS 3.1.5 Condition B Required Actions

JFD CL3.1-89

The ITS Condition B retains CTS Required Actions and Completion Times, which differs significantly from the STS.

**Comment:** The ITS reordering of STS Required Actions, differences in Completion Times, and differences in logical connectors results in logic differences. For example, while the STS requires a reduction in power prior to and in addition to the performance of hot channel factor surveillances, the ITS requires only one or the other of the actions, during the re-evaluation of the safety analysis to determine if continued operation under the existing conditions is acceptable. While the ITS provides 30 days to perform the re-evaluation of the safety analysis the STS provides a 5 days Completion Time. The STS Completion Time of 5 days seems more reasonable, particularly considering that the ITS will allow continued operation at full power while determining it is safe to do so. The STS actions are safer and more appropriate. In addition, the ITS only provides 2 hours to perform the hot channel factor surveillances; is sufficient time provided for the performance of ITS SR 3.2.1.1, ITS SR 3.2.1.2, and ITS SR 3.2.2.1? Recommend adopting the STS Condition B Required Actions, including logical connectors, and Completion Times.

### **RAI 3.1-7**

ITS 3.1.4 ROD GROUP ALIGNMENT LIMITS

ITS 3.1.4 Required Action B.2.2

CTS 3.10.E.1

STS 3.1.5 ROD GROUP ALIGNMENT LIMITS

STS 3.1.5 Required Action B.2.2

DOC L3.1-33

JFD CL3.1-89

The STS Required Action B.2.2 is to reduce Thermal Power to  $\leq 75\%$  RTP, while the ITS Required Action B.2.2 is to reduce Thermal Power to  $\leq 85\%$  RTP. The CTS requires the high neutron flux trip setpoint to be reduced to 85% of rating.

**Comment:** The fact that the CTS requires reduction of the high neutron flux trip setpoint to 85% of rating would imply that the power level would have to be below that level (i.e., 75% RTP, as per the STS). Recommend changing the ITS Required Action B.2.2 to reduce Thermal Power to  $\leq 75\%$  RTP, consistent with both the STS and CTS (85% RTP is not CL).

#### **RAI 3.1-8**

ITS 3.1.5 SHUTDOWN BANK INSERTION LIMITS

ITS 3.1.5 APPLICABILITY NOTE

STS 3.1.6 SHUTDOWN BANK INSERTION LIMITS

STS 3.1.6 APPLICABILITY NOTE

JFD PA3.1-93

The STS has the Applicability Note after the Applicability Statement. The ITS moves the Applicability Note to before the Applicability Statement.

**Comment:** In accordance with the Writer's Guide, NUMARC 93-03, the notes should follow the Applicability Statement, as in the STS. Recommend changing the location of the Applicability Note to after the Applicability Statement.

#### **RAI 3.1-9**

ITS 3.1.6 CONTROL BANK INSERTION LIMITS

ITS 3.1.6 APPLICABILITY NOTE

STS 3.1.7 CONTROL BANK INSERTION LIMITS

STS 3.1.7 APPLICABILITY NOTE

JFD PA3.1-93

The STS has the Applicability Note after the Applicability Statement. The ITS moves the Applicability Note to before the Applicability Statement.

**Comment:** In accordance with the Writer's Guide, NUMARC 93-03, the notes should follow the Applicability Statement, as in the STS. Recommend changing the location of the Applicability Note to after the Applicability Statement.

#### **RAI 3.1-10**

ITS 3.1.6 CONTROL BANK INSERTION LIMITS

ITS SR 3.1.6.1 FREQUENCY and associated BASES

STS 3.1.7 CONTROL BANK INSERTION LIMITS

STS SR 3.1.7.1 FREQUENCY

JFD PA3.1-96

DOC CL3.1-207

The STS SR 3.1.7.1 Frequency requirement to perform the SR (ECP calculation) within 4 hours prior to criticality has been deleted in ITS SR 3.1.6.1.

**Comment:** The primary justification given for the deletion is that the estimated critical position of the control bank is "prepared for all possible startup times such that Xenon decay is not a factor." The justifications provided are inadequate and the revised Bases do not provide clarity. Adequately justify the SR frequency deletion and provide a more detailed Bases discussion, or adopt the STS SR frequency.

**RAI 3.1-11**

ITS 3.1.7 ROD POSITION INDICATION

ITS 3.1.7 CONDITION B REQUIRED ACTIONS

STS 3.1.8 ROD POSITION INDICATION

STS 3.1.8 CONDITION B REQUIRED ACTIONS

JFD CL3.1-101

The ITS adopts STS 3.1.8, including TSTF-234 Rev 1, on Rod Position Indication with some modifications to Condition B Required Actions.

**Comment:** The ITS does not adopt the TSTF-234 Rev 1 Required Action B.1, to place the control rods in manual control, and a Required Action is added to monitor and record demand position indication for rods with inoperable RPI. The justification for these changes is lacking. Provide adequate justification or adopt the STS, including TSTF-234 Rev 1.

**RAI 3.1-12**

ITS 3.1.7 ROD POSITION INDICATION

ITS 3.1.7 REQUIRED ACTION C.1.2

STS 3.1.8 ROD POSITION INDICATION

STS 3.1.8 REQUIRED ACTION D.1.2

The ITS 3.1.7 Required Action C.1.2 adds the phrase "RPI of" to STS 3.1.8 Required Action D.1.2; the Required Action to determine the positions of the most and least withdrawn rods in the bank.

**Comment:** A justification is not provided for this addition. The addition appears inappropriate in that the point of interest is the rods' position and not their indications. Recommend deleting the added phrase.

**RAI 3.1-13**

ITS B 3.1.1  $SDM-T_{avg} > 200^{\circ}F$

ITS B 3.1.1 BASES ACTIONS SECTION

STS B 3.1.1  $SDM-T_{avg} > 200^{\circ}F$

STS B 3.1.1 BASES ACTIONS SECTION

JFD PA3.1-131

The ITS does not adopt the STS Bases paragraph in the Actions Section, on boration flow rate determination.

**Comment:** The intent of the deleted paragraph is to provide useful information to the operator on what could be expected in the rate of boron concentration change for various charging rates.

**RAI 3.1-14**

ITS B 3.1.6 CONTROL BANK INSERTION LIMITS

ITS BASES on ITS SR 3.1.6.2 and ITS SR 3.1.6.3

STS B 3.1.7 CONTROL BANK INSERTION LIMITS

STS BASES on STS SR 3.1.7.2 and STS SR 3.1.7.3

JFD PA3.1-208

The ITS Bases on ITS SR 3.1.6.2 and ITS SR 3.1.6.3 adds a sentence to the Bases on STS SR 3.1.7.2 and STS SR 3.1.7.3 that verification may be performed manually by an operator or through a computer program.



**Comment:** The SR intent is that the operator verify the control banks are within insertion, sequence and overlap limits every 12 hours. The verification can be by an operator manual observation/calculation, or by an operator check/observation of a computer output. The computer cannot perform the verification required by the SRs. Recommend that the sentence be revised to avoid misunderstanding.