

June 15, 2001

Mr. Joel Sorensen
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 3.8 (TAC NOS. MB0695 AND MB0696)

Dear Mr. Sorensen:

By a letter dated December 11, 2000, as supplemented by a letter dated March 6, 2001, Nuclear Management Company, LLC, submitted a license amendment request to convert the current technical specifications for the Prairie Island Nuclear Generating Plant to improved technical specifications.

Enclosed are the Nuclear Regulatory Commission staff's request for additional information (RAI) on Section 3.8, "Electrical Power Systems," of the subject improved technical specifications submittal. The contents of the enclosed RAI has 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 let me know 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: As Stated

cc w/encl: See next page

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Prairie Island Nuclear Generating Plant,
Units 1 and 2

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May 2001

**Prairie Island Nuclear Generating Plant
Improved Technical Specification (ITS) Section 3.8, Electrical Power Systems
Request for Additional Information**

3.8-01 Current Technical Specification (CTS) 3.7.A.5(a) DOC L3.8-12

The licensee is requested to provide details of the calculations on which the change in fuel oil storage requirements from 51,000 gallons to 42,000 gallons is based. The response should address any changes in the fuel consumption rate and how the values used were obtained.

3.8-02 CTS Markup Page 1 of 12: This request for additional information (RAI) is closed, no licensee response is required.

At the bottom of the page, a portion of the CTS is high lighted, with the annotation "addressed elsewhere". What does this mean? What happens to this CTS item? If there are any changes, what are the justifications?

3.8-03 CTS 3.8.A.7 DOC LR3.8-02

The CTS impose a limitation on the number of panels that can be powered from panel 117 (Unit 1) and panel 217 (Unit 2). This limitation is proposed to be relocated to the Technical Rquirements Manual (TRM). However, the DOC not adequately explain why this relocation is acceptable. The licensee is requested to provide a discussion which includes an explanation of why this limitation is in the CTS as well as a justification for why it no longer needs to be retained in technical specification (TS).

3.8-04 CTS 3.7.A.4, CTS 3.7.A.7, No DOC See RAI 3.8-03

The CTS require four alternating current (AC) instrument buses to be OPERABLE in each unit. The proposed ITS only requires three inverters to be OPERABLE. No discussion is provided in support of the proposed ITS. The licensee is requested to provide a discussion on why requiring only three inverters is acceptable, and how three inverters will power four buses.

3.8-05 CTS 3.7.B.1 DOC M3.8-06

The staff does not agree that this is a more restrictive change. The CTS requirement is to test the other diesel generator (DG). The ITS allows the option of establishing the absence of a common-mode failure, thereby eliminating the requirement to test the OPERABLE DG. This change appears to be less restrictive. The licensee should consider changing the DOC.

3.8-06 CTS 3.7.B.3 DOC L3.8-09

The DOC paragraph dealing with changes to CTS 3.7.B.3 includes the sentence "While in this Plant Condition (ITS Condition D) and the inoperable path is restored to OPERABLE status, and the DG is still inoperable, then ITS Condition B is applicable." This seems to indicate that Condition B is not applicable while in Condition D. This is

not correct. Condition B with its Required Actions and Completion Times are entered as soon as the DG is found to be inoperable, and continues to be applicable until the DG is restored to OPERABLE. Is the phrasing in this DOC just an improper choice of words, or does the licensee not fully understand how the ISTS work?

3.8-07 CTS Markup Page 4 of 12, footnote*

This CTS footnote is retained as a Note in the Required Actions of ITS limiting condition for operation (LCO) 3.8.1, Condition B. This Note is not required. The NUREG Actions are adequate since it can readily be determined that the OPERABLE DG is not undergoing test or preventive maintenance, and the absence of a common-mode failure clearly demonstrated. The staff suggests that the Note be deleted.

3.8-08 CTS 3.7.B.6 DOC L3.8-09

The licensee has proposed to add an option to ITS LCO 3.8.9. This option would allow declaring required features associated with a specific distribution subsystem inoperable if the subsystem is de-energized. This option is not part of the CTS or part of NUREG-1431. Therefore, it is beyond scope. A specific justification for beyond scope issues must be provided. No justification has been provided for this issue. Therefore, the proposed change is rejected.

3.8-09 CTS 3.7.B.7 DOC L3.8-09

The licensee has proposed to retain the CTS allowance of 8 hours for an inoperable battery charger, but has deleted other CTS requirements associated with an inoperable charger in favor of NUREG-1431 requirements. The staff is of the opinion that this is not acceptable. The NUREG Actions associated with an inoperable battery charger are limited to restoration of the charger because of the limited Completion Time (2 hours). If a longer Completion Time had been allowed, it would probably have been in conjunction with other requirements. It is the staff's view that retention of the CTS 8-hour Completion Time can only be allowed if the other CTS requirements are also adopted.

3.8-10 CTS 3.7.B.8 DOC L3.8-09, A3.8-19:

This RAI Is Withdrawn Pending Licensee Resubmittal and Staff Review of direct current (DC) Power Sources TS. No Licensee Response Is Required.

NUREG-1431 addresses the DC power source as a single entity. If either of its components (battery, battery charger) is inoperable, the source is inoperable. The licensee has opted to retain the CTS with respect to the battery and battery charger by including a separate Action for each of them in the ITS. The licensee further proposed to add a new Condition (c) which addresses an inoperable DC source for reasons other than an inoperable battery or an inoperable charger. It is the staff's view that this new Condition is not necessary because the only way a DC source can become inoperable is if the battery, battery charger, or both are inoperable. This proposed Condition should be deleted.

The licensee also proposes to retain the CTS allowance of 8 hours for an inoperable battery, but has deleted other CTS requirements associated with an inoperable battery in favor of NUREG-1431 requirements. The staff is of the opinion that this is not acceptable. It is the staff's view that retention of the CTS 8-hour Completion Time can only be allowed if the other CTS requirements are also adopted.

3.8-11 CTS 3.7.B.9 DOC A3.8-20, LR3.8-02: This RAI is closed, no licensee response is required.

The licensee proposes to add ITS LCO 3.8.7 Condition A, which allows an inverter to be inoperable for 8 hours. Per DOC A3.8-20, this is consistent with CTS 3.7.B.9. The staff does not agree with this. CTS 3.7.B.9 allows a second inverter to be powered from an inverter bypass source for 8 hours. The CTS does not mention inoperability. In light of this, proposed ITS LCO 3.8.7 Condition A, does not appear to have adequate justification and is, therefore, not acceptable. It should also be noted that DOC LR3.8-02 states that CTS 3.7.B.9 is deleted. Since DOC A3.8-2 refers to a CTS which is deleted, justification for proposed LCO 3.8.7, Condition A is made even more difficult.

3.8-12 ITS LCO 3.8.9, Cond. B & C DOC M3.8-21 This RAI is closed, no licensee response is required.

DOC M3.8-21 states that the addition of ITS LCO 3.8.9 Conditions B and C represents a more restrictive change. The staff does not agree with this. The CTS are silent with regard to AC and DC distribution. The staff interprets this to mean that the CTS would require cascading; i.e., all systems/components powered from the affected distribution would be inoperable. This is the same as proposed Required Actions B.1 and C.1. Therefore, these Actions are not more restrictive. The proposed option to restore the affected distribution to OPERABLE in 2 hours may or may not be more restrictive. However, it should be noted that NUREG-1431 is structured to eliminate cascading. The licensee's proposed ITS includes provisions for cascading by the inclusion of Action B.1 and C.1. This is not consistent with NUREG-1431. The licensee must decide on following the NUREG, or retaining CTS.

3.8-13 CTS 4.6.A.1.b DOC A3.8-25: This RAI is closed, no licensee response is required.

The staff does not understand the DOC. The licensee is requested to provide more information on the design and operation of the fuel oil storage and transfer system in order to aid the staff in understanding the proposed ITS. The information should include details of how the tanks are interconnected and how the tanks, if interconnected, are used during power operation. The discussion should address how the independence of each DG is maintained when tanks are interconnected, and how the fuel oil transfer system operates under all conditions. A detailed drawing of the fuel oil system would be helpful.

3.8-14 CTS 4.6.A.2.a No DOC

The staff has allowed changes to surveillance requirements (SRs) such as this one. The change involves revising the SR to require achieving a minimum voltage and

frequency in 10 seconds, and subsequently achieving steady state voltage and frequency within the stated band. Clarification of CTS markup is recommended.

3.8-15 CTS 4.6.A.2.b DOC LR 3.8-34

The DOC states that the requirement to load the generator in less than or equal to 60 seconds is relocated to the TRM. It is the staff's position that the requirement to load a DG within 60 seconds is detrimental to DGs and should be deleted. If the requirement to load a DG in 60 seconds is retained in the TRM, it is still a requirement that must be met. The licensee might want to consider deleting this 60 second requirement completely.

3.8-16 CTS 4.6.A.3.C DOC LR 3.8-44: This RAI is closed, no licensee response is required.

In proposed ITS SR 3.8.1.9, a load range is used for the overload portion of the test, but not for the remainder. The staff suggests that a load range be used for both parts of the test.

3.8-17 CTS 4.6.B.4 DOC LR3.8-45

The CTS proposed for relocation seem to describe a performance discharge test (voltage measured as a function of time during a discharge). The staff questions whether this material is a candidate for relocation. It seems more appropriate to say the material is covered by the ITS requirement to conduct a performance discharge test and need not be retained in TS.

3.8-18 ITS SR 3.8.4.2 DOC M3.8-47: This RAI Is Withdrawn Pending Licensee Resubmittal and Staff Review of LCO 3.8.4. No Licensee Response Is Required.

The staff agrees that adding the SR constitutes a more restrictive change. However, the SR provides two options. Which option will be selected for Prairie Island?

3.8-19 CTS 4.6.C No DOC: This RAI is closed, no licensee response is required.

The CTS markup indicates this CTS requirement will be "Addressed elsewhere." The licensee is requested to clarify where this CTS requirement will be addressed in the ITS.

3.8-20 ITS SR 3.8.7.1 DOC M3.8-49: This RAI is closed, no licensee response is required.

The proposed ITS SR requires verifying correct inverter voltage and alignment. Frequency of the inverter is not mentioned. The licensee is requested to discuss why frequency was not included in the proposed SR.

3.8.1-01 NUREG Markup LCO 3.8.1 CL3.8-110

The LCO requires two paths between the offsite transmission grid and the onsite 4KV Safeguards Distribution System. The Bases indicate there are four paths from the switchyard to the onsite distribution. Are all four paths fully qualified? Can each path handle an accident in one unit and a safe shutdown in the other unit? Are there any restrictions associated with these four paths? If restrictions exist, do they need to be addressed with these four paths? If restrictions exist, do they need to be addressed in TS? If restrictions exist, how do they affect Condition A and Condition C?

3.8.1-02 NUREG Markup Conditions B Required Action Note CL 3.8-107

The proposed Note is not necessary. If a DG is inoperable for preplanned preventive maintenance or testing, it can easily be determined that the remaining DG is not undergoing maintenance or testing, thereby establishing the absence of a common mode failure. Required Action B.3.1 is met, and no further action is required.

3.8.1-03 NUREG Markup SR 3.8.1.2 PA3.8-115

Standby conditions is defined in the Bases as meaning the DG is maintained with the jacket water and lube oil in a warmed condition and continuously circulated. This should adequately address the licensee's concerns about manufacturer's recommendations, and the term "standby conditions" can be retained.

3.8.1-04 NUREG Markup SR 3.8.1.3 CL3.8-116

The licensee is requested to verify that the DG loading values for Unit 1 are in excess of the maximum anticipated accident loading.

3.8.1-05 NUREG Markup SR 3.8.1.4 CL3.8-118

The SR, as proposed, is without meaning. As proposed, this SR can be met if there is any fuel in the day tank. To make the SR meaningful, some minimum level to be verified must be included in the SR.

3.8.1-06 NUREG Markup SR 3.8.1.5 PA3.8-102 This RAI is closed, no licensee response is required.

What is the design of the Prairie Island (PI) fuel oil transfer system? Is it manual, or is it automatic? If it is automatic, the automatic requirements should be included in the SR.

3.8.1-07 NUREG Markup SR 3.8.1.6 TA3.8-120 This RAI is closed, no licensee response is required.

Part a. of SR 3.8.1.6 includes a voltage of 3740V and a frequency of 58.8Hz. These are the values included in TSTF-163. However, the values in TSTF-163 are not meant to be plant-specific. The intent is for each licensee to establish the values applicable to his plant. The licensee is requested to verify that the values stated in SR 3.8.1.6 for voltage

and frequency are those values at which the DGs can accept and accelerate accident loadings without impairing DG operation.

3.8.1-08 NUREG Markup NUREG SR 3.8.18 PA3.8-102 This RAI is closed, no licensee response is required.

JFD PA3.8-102 does not appear to be an adequate justification for deleting this SR. The licensee is requested to provide a more detailed discussion of why this is not applicable to PI, or retain the NUREG.

3.8.1-09 NUREG Markup SR 3.8.1.7 X3.8-125

What is the problem associated with maintaining a Power Factor of 0.9 at a load of 680 or 860MW?

Note that the change in frequency for this SR from 18 months to 24 months is a beyond-scope issue.

3.8.1-10 NUREG Markup NUREG SR3.8.1.11 CL3.8-128

The staff does not agree with the justification for deleting this SR. In the staff's view, a loss of offsite power (LOOP) is a different test than a LOOP/loss-of-coolant accident (LOCA). The plant response to the two conditions is different, and a LOOP/LOCA does not necessarily demonstrate the system response to a LOOP. The licensee is requested to demonstrate that performance of a LOOP/LOCA covers everything that would occur for a LOOP alone, or retain the NUREG.

3.8.1-11 NUREG Markup NUREG SR3.8.1.12 PA3.8-102

JFD PA3.8-102 does not provide an adequate justification for deleting NUREG SR3.8.1.12. This SR is in brackets because not all DGs are designed to start on an engineered safety feature (ESF) signal. For those plants with DGs that do not start on an ESF signal, the SR can be deleted. JFD PA3.8-102 does not address the PI design, and is therefore not adequate justification for deleting this SR.

3.8.1-12 NUREG Markup SR3.8.1.8 PA3.8-103: This RAI is closed, no licensee response is required.

That portion of the NUREG SR which address the loss of voltage signal is proposed to be deleted. This is acceptable if the PI design is such that the DG trips are not bypassed on a LOOP. However, the JFD does not address the plant design. If the plant design is as discussed above, the JFD should be revised to reflect this. If not, the NUREG SR should be retained completely.

3.8.1-13 NUREG Markup SR3.8.1.9 CL3.8-125: This RAI is closed, no licensee response is required.

The JFD states that the staff has agreed with discontinuing testing at a specified power factor. The reviewer is not aware of any such action on the part of the staff, and requests the licensee to provide specific details.

The reviewer is aware that the staff recognizes the problems associated with testing at a power factor, and has agreed to a solution which allows the power factor requirement to be reduced if maintaining a power factor would cause excessive voltages on the safety buses. The licensee should consider this alternative instead of attempting to delete the power factor requirement completely.

Note that the change in frequency from 18 months to 24 months is a beyond-scope issue.

3.8.1-14 NUREG Markup NUREG SR3.8.1.17 PA3.8-102 This RAI is closed, no licensee response is required.

PA3.8-102 does not provide an adequate justification for deleting this SR. The SR was placed in brackets because not all plants have this design feature. If this is true for PI, there should be a justification that describes the PI design. JFD PA3.8-102 does not do this.

3.8.1-15 NUREG Markup SR 3.8.1.10 CL3.8-126 This RAI is closed, no licensee response is required.

The change in frequency from 18 months to 24 months is a beyond-scope issue.

3.8.1-16 NUREG Markup NUREG SR 3.8.1.20 CL3.8-133

The JFD appears to be incorrect. ITS SR3.8.1.6 addressed the DGs individually. The NUREG SR proposed for deletion requires simultaneous starting of all DGs. The licensee should provide an adequate justification for the proposed deletion, or retain the NUREG.

3.8.1-17 Bases Page B3.8.1-2 PA3.8-135

The last sentence in the first paragraph on this page addresses transformer capability. What is the purpose of including this statement in the Bases? How does it factor into the LCO requirement, if at all?

3.8.1-18 Bases Page B3.8.1-5 No JFD: This RAI is closed, no licensee response is required.

In the Background discussion, it is stated that each safeguards bus (train) has connections to two offsite power sources. The LCO discussion states that there are four external (offsite) power sources. Since there are two units at PI, with two trains per unit

for a total of four trains, connection of each train to two offsite circuits would require eight offsite circuits, or some trains must share the same offsite circuit. The licensee is requested to revise the Bases to include a detailed discussion on how the offsite circuits are shared among the four trains, and to describe any limitations there may be on any of the offsite circuits. The licensee should also discuss what, in his view, constitutes a loss of offsite power.

3.8.1-19 Bases Page B3.8.1-6 PA3.8-204: This RAI is closed, no licensee response is required.

The last two paragraphs on this page are deleted. The reason for the deletion is that the same material is found in the updated final safety analysis report (UFSAR). This is not acceptable. The Bases are there to explain the TS, and should include all applicable information necessary to do so. Reference to the UFSAR should not be required to understand the ITS. If the information proposed for deletion is applicable to the ITS, it should be retained.

3.8.1-20 Bases Page B3.8.1-12 Action B.2 CL3.8-200: This RAI is closed, no licensee response is required.

The Bases discussion does not appear to be acceptable. If the DG supporting the motor-driven pump is inoperable, and the steam-driven pump is also inoperable, LOOP would result in no aux feed pumps available. The NUREG cross train check requirement should be retained, at least for the above condition.

3.8.1-21 Bases Page B3.8.1-13 Action B.3.1 CL3.8-107

See RAI 3.8.1-02

3.8.1-22 Bases Page B3.8.1-16 Action C.1 CL3.8-200: This RAI is closed, no licensee response is required.

Deletion of the last two sentences in the first paragraph is not acceptable. Assume no offsite power on one train and the steam driven aux feed pump is inoperable. A single-failure of a DG could result in no aux feed pumps. The NUREG discussion of aux feed pumps should be retained in a revised version that reflects the PI design.

3.8.1-23 Bases Page B3.8.1-21 SRs PA3.8-208: This RAI is closed, no licensee response is required.

Deletion of the Bases material is not acceptable. The purpose of the Bases is to explain the ITS, and reference to the UFSAR should not be required. If the Bases material is applicable to PI, it should be retained, with revisions as necessary, to reflect the PI design.

3.8.1-24 Bases Page B3.8.1-22 SR 3.8.1.1 PA3.8-204

Offsite power is the preferred power source for any nuclear power plant, regardless of

whether or not it is specifically addressed in the plant design. The NUREG language should be retained, including the additional material regarding independence in the deletion of which has not been justified.

3.8.1-25 Bases Page B3.8.1-23 SR 3.8.1.2 PA3.8-115

See RAI 3.8.1-03

3.8.1-26 Bases Page B3.8.1-24 SR3.8.1.3 CL3.8-116

The licensee is requested to provide details of the accident loading requirements and to demonstrate that these loading requirements are exceeded by the manufacturer's recommended loads. The licensee is also requested to verify that the loads suggested by the manufacturer are maximum loads, not minimum loads.

3.8.1-27 Bases Page B3.8.1-25 SR 3.8.1.4 CL3.8-118

See RAI 3.8.1-05

3.8.1-28 Bases Page B3.8.1-27 NUREG SR 3.8.1.8: This RAI is closed, no licensee response is required.

Deletion of this Bases discussion may change, depending on the response to RAI 3.8.1-08.

3.8.1-29 Bases Page B3.8.1-30 SR3.8.1.7 CL3.8-125

See RAI 3.8.1-09

3.8.1-30 Bases Page B3.8.1-31 SR3.8.1.7 X3.8-126: This RAI is closed, no licensee response is required.

The change in frequency from 18 months to 24 months is beyond-scope.

3.8.1-31 Bases Page B3.8.1-32 NUREG SR3.8.1.11 CL3.8-128

See RAI 3.8.1-10

3.8.1-32 Bases Page B3.8.1-34 NUREG SR 3.8.1-12 No JFD

See RAI 3.8.1-11

3.8.1-33 Bases Page B3.8.1-35 SR3.8.1.8 PA3.8-103: This RAI is closed, no licensee response is required.

See RAI 3.8.12. Also, the change in frequency from 18 months to 24 months is beyond-scope.

3.8.1-34 Bases Page B3.8.1-36 SR 3.8.1.9 X3.8-126: This RAI is closed, no licensee response is required.

The change in frequency from 18 months to 24 months is beyond-scope.

3.8.1-35 Bases Page B3.8.1-37 SR 3.8.1.9 CL3.8-125

The Bases for this SR have been revised to state that the test must be conducted at > 90 percent of voltage and frequency. This is not acceptable. The voltage and frequency requirements are stated in the SR, and the frequency tolerance is considered less than 10 percent of the 60 Hz. The Bases should be revised to delete reference to voltage and frequency, as shown.

Also, see staff comments for SR 3.8.1.9 in LCO 3.8.1 markup regarding power factor.

3.8.1-36 Bases Page B3.8.1-42 SR3.8.1.10 X3.8-126: This RAI is closed, no licensee response is required.

The change in frequency from 18 months to 24 months is beyond-scope.

3.8.1-37 Bases Page B3.8.1-43 NUREG SR3.8.1.20 CL3.8-133

See RAI 3.8.1-16

3.8.2-01 NUREG Markup LCO 3.8.2 Note PA3.8-211: This RAI is closed, no licensee response is required.

The LCO Note regarding performance of SR 3.8.1.10 is not necessary. Per the Note in SR 3.8.2.1, SR 3.8.1.10 is not required to be performed on the DG used to satisfy the LCO requirements.

3.8.2-02 Bases Page B3.8.2-3 LCO PA3.8-102

The Bases discussion proposed for deletion is in brackets because it was understood when the NUREG was developed that the language would not be applicable to all plants. The intent is for the licensee to insert the information for his plant, not to delete the Bases discussion. The licensee should retain this Bases using information that describes the PI design.

3.8.2-03 Bases Page B3.8.2-4 LCO CL3.8-202

Part of the Bases in the second paragraph is proposed for deletion. This Bases, as worded, means that the DGs are capable of being loaded within 10 seconds. It does not mean they are loaded in 10 seconds as the JFD appears to indicate. The Bases material should be retained.

3.8.2-04 Bases Page B3.8.2-4 LCO CL3.8-110

The JFD does not discuss deletion of the Bases wording in the third paragraph

regarding tripping on nonessential loads. The licensee should justify this deletion, or retain the NUREG. In the fourth paragraph, what is the justification for deleting the bracketed Bases information regarding sequencer operation and offsite circuit OPERABILITY?

3.8.2-05 Bases Page B.3.8.2-4 LCO PA3.8-211: This RAI is closed, no licensee response is required.

See RAI 3.8.2-01 regarding the proposed LCO Note.

3.8.2-06 Bases Page B3.8.2-6 Action A.1 CL3.8-157

The Bases and the LCO are not consistent. Some revision appears to be necessary. If the Bases are to remain as proposed, Action A.1 should be deleted. The option described in A.1 is only applicable if more than one safeguards bus was required to be OPERABLE. This applies to the option discussion for Action A.2 and B, as well.

Section 3.8.3

3.8.3-01 NUREG Markup LCO Note PA3.8-134: This RAI is closed, no licensee response is required.

What is the design of the fuel oil storage system at PI? Is it one tank for 2 DGs, or one tank for each DG? If it is one tank for 2 DGs, the Note is not necessary since the LCO Conditions would be applicable to both DGs at the same time. If it is one tank for each DG, the Conditions may need to be reworded, and the Note about separate condition entry retained.

3.8.3-02 NUREG Markup NUREG SR 3.8.3.5 CL3.8-147

The JFD does not provide an adequate justification for deletion of this SR. The testing for water as part of the fuel oil program is for suspended water. This SR addresses water that may have accumulated at the bottom of the tank.

3.8.3-03 NUREG Markup NUREG SR3.8.3.6 TA3.8-156

TSTF 2 calls for relocating this requirement to a licensee controlled document. It does not address total deletion. The licensee should provide information on where this requirement will be relocated and what controls will be associated with that document.

3.8.3-04 Bases Page B3.8.3-1 Background CL3.8-143

The Bases should describe the TS requirement without a reference to the updated safety analysis report. The Bases material proposed for deletion should be retained, with revisions as necessary to reflect the PI design.

3.8.3-05 Bases Page B3.8.3-4 Actions PA3.8-134 This RAI is closed, no licensee response is required.

See RAI 3.8.3-01

3.8.3-06 Bases Page B3.8.3-4 Action A.1 CL3.8-152

In this Bases discussion, should the reference to DG not be plural; i.e., DGs? If the design of the fuel oil system is one tank for both DGs, then plural (DGs) would be correct.

3.8.3-07 Bases Page B3.8.3-6 Action C.1 CL3.8-146: This RAI is closed, no licensee response is required.

With regard to the new material, what is the design of the PI fuel oil storage system? Is it one tank for 2 DGs, or one tank for each DG? If a tank is isolated, where is the other tank the DG can take a suction from? Is the fuel in that tank monitored for quality per TS?

3.8.3-08 Bases Page B3.8.3-11 NUREG SR3.8.3.5 CL3.8-147

See RAI 3.8.3-02

3.8.3-09 Bases Page B3.8.3-12 NUREG SR3.8.3-6 TA3.8-156

See RAI 3.8.3-03

RAIs 3.8.4-01 to 3.8.4-14 Are Withdrawn Pending Licensee Resubmittal and Staff Review of LCO 3.8.4. No Licensee Response is Required.

3.8.4-01 NUREG Markup LCO 3.8.4 No JFD

What is the purpose of changing "subsystem" to "sources" in the LCO? The NUREG is developed around the term subsystem, including a definition in the Bases. The licensee should provide a justification for the proposed change, or retain the NUREG. This also applies to the same change in Condition C.

3.8.4-02 NUREG Markup Condition A TP3.8-160

Proposed ITS Condition A and associated Required Actions and Completion Times do not reflect TSTF-360. JFD TP3.8-160 does not provide an adequate justification for the ITS differences. The licensee should adopt TSTF-360 without change.

3.8.4-03 NUREG Markup Condition B TP3.8-160

Proposed ITS Condition B Completion Time does not reflect TSTF-360. JFD TP3.8-160 does not provide an adequate justification for the difference. The licensee should adopt TSTF-360 without change.

3.8.4-04 NUREG Markup SR3.8.4.1 TP3.8-160

The SR requirement is essentially the same as TSTF-360. However, the Bases for ITS SR 3.8.4.1 do not reflect the Bases for TSTF-360. In particular, the individual cell voltage and overall battery voltage are not included. This is not acceptable. The licensee should adopt the TSTF-360 Bases.

3.8.4-05 NUREG Markup SR3.8.4.2 TP3.8-160

TSTF-360 provides two options for a battery charger test. The licensee should select one of the options for this SR. If the first option is selected, the SR wording as proposed for the ITS does not reflect TSTF-360 and is not acceptable. For the first option, the SR should be reworded to reflect TSTF-360.

Note that the change in frequency from 18 months to 24 months is beyond-scope.

3.8.4-06 Bases Page B3.8.4-2 Background TP3.8-160

The Bases discussion regarding battery storage capacity is not consistent with the TSTF-360 Bases. The ITS Bases should be revised to be consistent with TSTF-360.

3.8.4-07 Bases Page B3.8.4-3 Background PA3.8-186

The first paragraph on this page is proposed to be deleted. This is not consistent with the Bases for TSTF-360 and is not acceptable. The Bases proposed for deletion should be retained.

3.8.4-08 Bases Page B3.8.4-3 Background CL3.8-114

The proposed Bases regarding battery charger capacity is not consistent with TSTF-360, and the JFD does not provide an adequate justification for the proposed change. The licensee should provide an adequate justification for the Bases change, including specific charger capability, or retain the TSTF-360 Bases.

The Bases discussion also does not include any of the TSTF-360 material regarding battery design, open circuit voltage, float voltage, and terminal voltage. The Bases should be revised to include this information for PI.

3.8.4-09 Bases Page B3.8.4-6 Action A.1 TP3.8-160

See RAI 3.8.4-02

3.8.4-10 Bases Page B3.8.4-7 Action C.1 TP3.8-160

The Bases discussion does not reflect LCO Action C.1. Revision is required to make the Bases consistent with the LCO.

3.8.4-11 Bases Page B3.8.4-9 SR3.8.4.1 TP3.8-160

The proposed Bases are not consistent with TSTF-360. This is not acceptable. The licensee should revise the Bases to be consistent with TSTF-360.

3.8.4-12 Bases Page B3.8.4-11 SR3.8.4.2 CL3.8-114

The proposed Bases regarding battery charger capacity is not consistent with TSTF-360, and the JFD does not provide an adequate justification for the proposed change. The licensee should provide an adequate justification for the change, including specific charger capability, or retain the TSTF-360 Bases.

3.8.4-13 Bases Page B3.8.4-12 SR3.8.4.2 TP3.8-160

See RAI 3.8.4-05

3.8.4-14 Bases Page B3.8.4-12 SR3.8.4.2 X3.8-126

The change in frequency from 18 months to 24 months is beyond-scope.

RAIs 3.8.5-01 to 3.8.5-07 Are Withdrawn Pending Licensee Resubmittal and Staff Review of LCO 3.8.5. No Licensee Response Is Required.

3.8.5-01 NUREG Markup LCO 3.8.5. Condition A:

What is the purpose of changing “subsystem” to “source” in the LCO and Condition A? The NUREG is developed around the term subsystem, including a definition in the Bases. The licensee should provide a justification for the proposed change, or retain the NUREG. If the intent of the change is to allow use of the service building battery, this is not acceptable.

3.8.5-02 NUREG Markup Required Action A.1 TA3.8-175

The rationale for Required Action A.1 was based on Rev. 1 of the NUREG which would, in certain conditions, require more than one DC subsystem. With one of two or more required subsystems inoperable, the remaining subsystem(s) might be able to power all necessary loads. In such a case, it was acceptable to declare inoperable the required features associated with the inoperable subsystem. However, with only 1 subsystem required, the above condition does not exist, and the option to declare required features inoperable is inappropriate. Required Action A.1 should be deleted.

3.8.5-03 Bases Page B3.8.5-1 Background PA3.8-212

The staff interprets the proposed Bases addition to mean that the service building battery or charger may be used in lieu of a safeguards battery to satisfy the LCO. This is not acceptable. This Bases addition should be deleted. If the staff interpretation is not correct, provide the correct interpretation and revise the Bases so that interpretation is clear.

3.8.5-04 Bases Page B3.8.5-1 Applicable Safety Analysis PA3.8-192

The proposed replacement for the Applicable Safety Analysis includes a portion of the discussion from the LCO 3.8.2 Bases. The licensee has not explained why only a portion of the LCO 3.8.2 Bases is more appropriate than the LCO 3.8.5 Bases. The licensee should provide this explanation. Also, the Bases should be revised to include a discussion on the function of the DC safeguards subsystem.

3.8.5-05 Bases Page B3.8.5-3 Applicable Safety Analysis TA3.8-175

The licensee has proposed to use the LCO 3.8.2 Applicable Safety Analysis Bases in lieu of the LCO 3.8.5 Bases. However, the LCO 3.8.2 Bases proposed for use in LCO 3.8.5 Bases have been modified with the addition of the last paragraph on this page. If this paragraph is applicable to the LCO 3.8.2 Bases as transplanted to LCO 3.8.5, why is the same paragraph not inserted into the LCO 3.8.2 Bases as well?

3.8.5-06 Bases Page B3.8.5-5 Action A.1 CL3.8-177

See RAI 3.8.5-02

3.8.5-07 Bases Page B3.8.5-6 Action A.1 No JFD

The term "subsystem" is changed to "source" in two places on this page.

See RAI 3.8.5-01

RAIs 3.8.6-01 to 3.8.6-19 Are Withdrawn Pending Licensee Resubmittal and Staff Review of LCO 3.8.6. No Licensee Response Is Required.

3.8.6-01 NUREG Markup LCO 3.8.6 PA3.8-174

The proposed changes to the LCO are not acceptable. As proposed, the LCO can be interpreted to mean only one battery is required to have parameters within limits. The licensee should retain the wording of TSTF-360.

The above comment is also applicable to proposed changes to the APPLICABILITY of the LCO.

3.8.6-02 NUREG Markup Condition A TP3.8-160

In TSTF-360, the value of 2.07V is in brackets. It is the licensee's responsibility to provide the proper number for his plant. The licensee is requested to provide the justification for the 2.07V value used in Condition A. It should be noted that IEEE-450 (95) considers a cell at 2.07V on float to be a defective cell. The justification should reference the battery manufacturer's recommendations regarding minimum cell voltage that should be maintained on float charge, and at what cell voltage corrective action is recommended.

3.8.6-03 NUREG Markup Required Action A.3 Completion Time PA3.8-159

The Completion Time for Required Action A.3 in TSTF-360 is 24 hours. JFD PA3.8-159 does not provide an acceptable justification for changing this to 72 hours. The TSTF-360 Completion Time of 24 hours should be retained.

3.8.6-04 NUREG Markup Condition A and Condition B TP3.8-160

TSTF-360 limits Condition A and Condition B to the battery or batteries in one train. The proposed ITS Condition B would allow the batteries in both trains to have a float current greater than 2 amps or have low voltage. This is not acceptable. The limitations of TSTF-360 should be retained.

The Required Action and Completion Time of proposed ITS Condition B are not consistent with TSTF-360. This is not acceptable. The Required Action and Completion Time should be revised to reflect TSTF-360.

3.8.6-05 NUREG Markup Condition C and D TP3.8-160

Condition C and D do not reflect TSTF-360. The TSTF addresses one or more batteries in one train. The proposed ITS would allow the batteries in both trains to be out of limits. This is not acceptable. The TSTF-360 language should be retained.

3.8.6-06 NUREG Markup No JFD:

TSTF-360 Condition E has not been adopted. No justification has been provided for the deletion. This is not acceptable. The language of TSTF-360 should be retained.

3.8.6-07 NUREG Markup Condition E PA3.8-161

The second part of Condition E (TSTF-360 Condition F) is not included in the ITS. JFD PA3.8-161 is the justification offered in support of this change. It is the staff's view that JFD PA3.8-161 is incorrect. The requirements of the second part of Condition E (TSTF-360 Condition F) are not covered by Condition D. The deletion is, therefore, not acceptable. The language of TSTF-360 should be retained.

3.8.6-08 NUREG Markup SR 3.8.6.1 TP3.8-160

In TSTF-360, the value of the charging current is in brackets. Is the licensee's responsibility to provide the appropriate number for his plant? Is 2 amps the appropriate value for PI? The licensee should provide the basis for the 2 amps, or whatever value is finally used.

3.8.6-09 NUREG Markup SR3.8.6.2 and SR3.8.6.5 TP3.8-160

In TSTF-360, the value of 2.07V is in brackets. It is the licensee's responsibility to provide the proper number for his plant. The licensee is requested to provide the justification for the 2.07V value used in this SR. (See also RAI 3.8.6-02)

3.8.6-10 Bases Page B3.8.6-1 Background TP3.8-160, PA3.8-162, CL3.8-172.

These Bases are not consistent with TSTF-360. This is not acceptable. The Bases should be revised to be consistent with the TSTF. Of particular concern is the absence of any reference to a battery program in Section 5 of the ITS, as well as the lack of any details of battery cell voltage and terminal voltage on float. The discussion of charging current is also not consistent with TSTF-360. The Bases should be revised to be consistent with TSTF-360.

3.8.6-11 Bases Page B3.8.6-3 LCO TP3.8-160

The LCO Bases are not consistent with TSTF-360. This is not acceptable. The licensee should revise the Bases to be consistent with TSTF-360.

3.8.6-12 Bases Page B3.8.6-3 Actions A.1, A.2, and A.3 TP3.8-160

See RAI 3.8.6-02, RAI 3.8.6-03, RAI 3.8.6-04

3.8.6-13 Bases Page B3.8.6-5 Action A.1, and B.1 TP3.8-160

These Bases are not consistent with TSTF-360. This is not acceptable. The licensee should revise the Bases to be consistent with TSTF-360.

Also, for Action B.1, see RAI 3.8.6-04 regarding one or more batteries versus one or more batteries in one train.

3.8.6-14 Bases Page B3.8.6-6 Action C.1 and D.1 TP3.8-160

See RAI 3.8.6-05

3.8.6-15 Bases Page B3.8.6-7 Action E.1 TP3.8-160

The proposed Bases are not consistent with TSTF-360 (Action F). This is not acceptable. The licensee should revise the Bases to be consistent with TSTF-360.

ITS Condition E, in part, reflects TSTF-360 Condition F. TSTF-360 Condition E has not been adopted, so no Bases are proposed. This is not acceptable. The licensee should adopt TSTF-360 Condition E and its associated Bases.

3.8.6-16 Bases Page B3.8.6-8 SR3.8.6.1 CL3.8-172

The Bases discussion of SR 3.8.6.1 includes a reference to IEEE-450. Reference to this document has been deleted elsewhere in these Bases. Why is reference to IEEE-450 acceptable here, but not in other places in the Bases?

Also, see RAI 3.8.6-08

3.8.6-17 Bases Page B3.8.6-9 SR3.8.6.2 TP3.8-160

These Bases are not consistent with TSTF-360 Bases. This is not acceptable. The licensee should revise the Bases to be consistent with TSTF-360. When revising the Bases, consideration should be given to staff concerns in RAI 3.8.6-09.

3.8.6-18 Bases Page B3.8.6-13 SR3.8.6.4 TP3.8-160

The Bases do not identify the proper pilot cell temperature. This is not consistent with TSTF-360 and is not acceptable. The licensee should revise the Bases to be consistent with TSTF-360.

3.8.6-19 Bases Page B3.8.6-14 SR3.8.6.6 TP3.8-160

The proposed Bases do not include the TSTF-360 Bases discussion regarding battery sizing with regard to 80 percent of rated capacity. This is not acceptable. The licensee should revise the Bases to be consistent with TSTF-360. Note also that the ITS Bases are not organized like the TSTF-360 Bases. Consideration should be given to rearranging the Bases to reflect TSTF-360 and avoid possible confusion.

3.8.7-01 NUREG Markup SR3.8.7.1 PA3.8-102: This RAI is closed, no licensee response is required.

The requirement to verify frequency is deleted from this SR. JFD PA3.8-102 does not provide an adequate justification for the deletion. The licensee is requested to provide an adequate justification, or retain the NUREG wording.

3.8.7-02 Bases Page B3.8.7-4 Action A.1 No JFD

The staff does not understand use of the term “may” in the first paragraph with regard to Reactor Protection Instrument AC Panel OPERABILITY. If the inverter becomes inoperable, the AC panel will be de-energized until power is restored. De-energized is inoperable. There is no question of “may.” This should be corrected. Also, the Bases should identify the alternate safety related source. The Bases should identify the alternate safety related source. The Bases should be revised to include this identification.

3.8.7-03 Bases Page B3.8.7-5 SR3.8.7.1 PA3.8-102

See RAI 3.8.7-01

3.8.8-01 NUREG Markup LCO 3.8.8 TA3.8-175

The LCO should be revised to retain the wording “to support the onsite Class 1E AC vital bus electrical power distribution subsystem required by LCO 3.8.10.” Without this wording, the LCO is not consistent with the NUREG organization.

3.8.8-02 NUREG Markup Required Action A.1 TA3.8-175

The rationale for Required Action A.1 was based on Rev. 1 to the NUREG which would, in certain conditions, require more than one inverter to be OPERABLE. With one of two or more required subsystems inoperable, the remaining subsystem(s) might be able to power all necessary loads. In such a case, it was acceptable to declare inoperable the required features associated with the inoperable subsystem. However, with only one subsystem required, the above conditions do not exist, and the option to declare required features inoperable is not appropriate. Required Action A.1 should be deleted.

3.8.8-03 NUREG Markup SR3.8.8.1 PA3.8-102 This RAI is closed, no licensee response is required.

JFD PA3.8-102 does not provide adequate justification for deleting frequency from this SR. The licensee is requested to provide adequate justification for the deletion, or retain the NUREG.

3.8.8-04 Bases Page B3.8.8-3 Applicable Safety Analysis PA3.8-192

The licensee has proposed to use the Bases discussion from LCO 3.8.2 in this Bases. However, the last paragraph of the Applicable Safety Analysis from LCO 3.8.2 has not been included. If the LCO 3.8.2 Bases are to be used, the entire Bases should be included, not just a part of it.

3.8.8-05 Bases Page 3.8.8-3 Applicable Safety Analysis TA3.8-175

See RAI 3.8.5-05

3.8.8-06 Bases Page B3.8.8-4 LCO CL3.8-177 This RAI is closed, no licensee response is required.

The last sentence of the first paragraph regarding OPERABILITY of the inverters is proposed to be deleted. JFD CL3.8-177 does not provide a justification for this deletion. The licensee should provide an acceptable justification, or retain the NUREG.

3.8.8-07 Bases Page B3.8.8-5 Action A.1 No JFD

See RAI 3.8.8-02

3.8.8-08 Bases Page B3.8.8-7 SR3.8.8.1 PA3.8-102

See RAI 3.8.8-03

RAIs 3.8.9-01 to 3.8.9-09 are Withdrawn Pending Licensee Resubmittal and Staff Review of

LCO 3.8.9. No Licensee Response Is Required.

3.8.9-01 NUREG Markup Action A.1 PA3.8-213

JFD PA3.8-213 does not adequately explain why the proposed Action is acceptable. The JFD addresses a plant condition where a portion of the safeguards system is inoperable, but does not explain how this could happen, or why declaring the supported features inoperable is more conservative or desirable. It should be noted that the NUREG considers an entire safeguards train to be a subsystem, and the entire subsystem is considered inoperable when all, or any portion of it is inoperable. The licensee should provide an acceptable, detailed justification for proposed Action A.1, or delete it. This may also be a beyond-scope item.

3.8.9-02 NUREG Markup Action B.1 and C.1 PA3.8-213

The staff comments in RAI 3.8.9-01 regarding proposed Action A.1 are applicable to proposed Actions B.1 and C.1.

3.8.9-03 NUREG Markup Condition E No JFD

The wording of Condition E does not appear to be correct. The staff believes it should read "Two or more inoperable distribution subsystems..." instead of "Two trains with inoperable distribution subsystem...." The licensee is requested to revise the Condition accordingly.

3.8.9-04 Bases Page B3.8.9-2 Background CL3.8-167

The last sentence of the second paragraph is proposed to be deleted. JFD CL3.8-167 does not provide a justification for this proposed deletion. The licensee should provide an acceptable justification, or retain the NUREG language.

3.8.9-05 Bases Page B3.8.9-4 LCO CL3.8-167

The last part of the second paragraph on this page is proposed to be deleted. JFD CL3.8-167 does not provide an adequate justification for this change. The licensee should provide an acceptable justification or retain the NUREG.

3.8.9-06 Bases Page B3.8.9-5 Action A.1 PA3.8-213

See RAI 3.8.9-01

Note that Action A.1, if allowed, would negate LCO 3.0.6 because the Actions for the support system would not be taken. Actions for the inoperable supported systems would be taken, instead. Consequently, the safety functions determination program would not be invoked. The proposed Bases addition is, therefore, not acceptable.

3.8.9-07 Bases Page B3.8.9-7 Action C.1 PA3.8-213

See RAI 3.8.9-01 and RAI 3.8.9-06

3.8.9-08 Bases Page B3.8.9-10 Action B.1 PA3.8-2B

See RAI 3.8.9-01 and RAI 3.8.9-06

3.8.9-09 Bases Page B3.8.9-15 Table B3.8.9-1 No JFD

Some distribution is marked to indicate it is transferable between units. What does “transferable between units” mean? How is it accomplished? What impact does transferring between units have on system OPERABILITY? Why is this feature not addressed in the respective AC and DC LCOs and Bases?

3.8.10-01 NUREG Markup Required Action A.2.5 PA3.8-190

In some cases, the residual heat removal (RHR) TS requires two RHR subsystems to be OPERABLE, with one in OPERATION. With problems in the distribution subsystems, the Required Actions must address the requirements of all affected systems. Since the RHR TS calls for “OPERABLE” and “in operation,” both requirements must be addressed by LCO 3.8.10 Actions. For this reason, Require Action A.2.5 should remain as is. The proposed change is not acceptable.

3.8.10-02 Bases Page B3.8.10-1 Background PA3.8-191

What is the purpose of adding the material about alternate power sources? Is the intent to allow these sources to be used in lieu of the AC, DC, and vital AC covered in LCO 3.8.2, LCO 3.8.5, and LCO 3.8.8? If so, this is not acceptable. These sources may be used in addition to the requirements of LCO 3.8.2, LCO 3.8.5, and LCO 3.8.8 as a means of complying with NUMARC 91-06, but they may not be used in lieu of Class 1E power requirements. The Bases should be revised to make this clear.

What is the basis of the statement that use of the above power sources is consistent with the current licensing basis?