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SUBJECT: Forwards response to NRC 990510 RAI re licensee 981016 application for amend,converting CTS to ITS.Encl discusses TS Section 3.8, "Electrical Power Systems."

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August 2, 1999
NMP2L 1883

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

RE: Nine Mile Point Unit 2
Docket No. 50-410
NPF-69

Subject: *Request for Additional Information Regarding Improved Technical Specification (ITS) Section 3.8 for the Nine Mile Point Nuclear Station, Unit No. 2 (TAC No. MA3822)*

Gentlemen:

Niagara Mohawk Power Corporation (NMPC) transmitted an Application for Amendment regarding conversion of the Nine Mile Point Unit 2 (NMP2) Current Technical Specifications (CTS) to the ITS by letter dated October 16, 1998 (NMP2L 1830). Subsequently, by letter dated May 10, 1999, the NRC requested additional information pertaining to our Application for Amendment. The Staff requested information regarding several Sections, including Section 3.8, Electrical Power Systems.

Attached to this letter are the required NMPC responses.

Very truly yours,

Richard B. Abbott
Vice President - Nuclear Engineering

RBA/TWP/kap
Attachment

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A001 1/1

REQUEST FOR ADDITIONAL INFORMATION (RAI)

IMPROVED TECHNICAL SPECIFICATIONS (ITS)

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION UNIT NO. 2

3.8.1-01 *CTS LCO 3.8.1.1 Applicability proposed Note*
DOC A.4

A Note is proposed to be added to the LCO Applicability which would exclude the Division III AC Sources from the Applicability when the HPCS system is inoperable. The proposed changes are designated as Administrative.

Comment: The staff does not agree with this designation. The CTS includes a special allowance associated with the Division III DG. The proposed Note, however, provides an exception for all Division III AC sources. Therefore, this proposed change is Less Restrictive and should be addressed accordingly.

NMPC Response:

The change was submitted and categorized as an administrative change consistent with the Nuclear Regulatory Commission's (NRC's) review and approval of all previous Boiling Water Reactor (BWR) 5 and 6 Improved Technical Specification (ITS) submittals. Nine Mile Point Unit 2 (NMP2) understands that the NRC would prefer this change to be identified as less restrictive. Consistent with this current expectation, NMP2 will revise our submittal accordingly.

3.8.1-02 *CTS 4.8.1.1.2.a*
DOC LA.2

The DOC addresses deleting accelerated DG testing requirements from the CTS. In the DOC there is a statement as follows: "The allowances of GL 94-01 will be addressed separately, post ITS implementation."

Comment: What is the purpose/intent of the statement? What allowances are referenced here? How will they be addressed?

NMPC Response:

Discussion of Change (DOC) LA.2 justifies relocating the Current Technical Specification (CTS) requirements for accelerated diesel generator (DG) testing to the Technical Requirements Manual (TRM). The CTS requirements are more restrictive than those required by Regulatory Guide (RG) 1.160, which is referenced in Generic Letter (GL) 94-01. GL 94-01 allowed licensees to remove the DG accelerated testing schedule from TS and test the DGs in accordance with RG 1.160 requirements. As stated in DOC LA.2, the NMP2 ITS submittal only proposes to relocate the CTS requirements and not to take advantage of the allowances in GL 94-01 to reduce DG testing requirements. These are the allowances to which the DOC is referring. The allowances of GL 94-01 will be addressed separately, post-ITS implementation, after the CTS DG accelerated testing table has been moved into the TRM. As stated in the DOC, any changes to the TRM will be controlled by the provisions of 10 CFR 50.59. Thus,

since the CTS DG accelerated testing table will be moved to the TRM, changes to the table to be consistent with the allowances of GL 94-01 and RG 1.160 will be controlled by the provisions of 10 CFR 50.59.

3.8.1-03 *CTS 4.8.1.1.2.a.3*
ITS SR 3.8.1.6
Bases for STS SR 3.8.1.6

CTS 4.8.1.1.2.a.3 requires verifying each fuel transfer pump starts and transfers fuel from the storage system to the day fuel tank in accordance with the frequency specified in Table 4.8.1.1.2-1. The Frequency for corresponding ITS SR 3.8.1.6 is 92 days.

Comment: The intent of the Reviewer's Note in the Bases for STS SR 3.8.1.6 is to establish the Surveillance Frequency based on the storage capacity of the day tank. Confirm that it is not necessary for the fuel transfer pumps to start in order to transfer fuel to support the monthly diesel Surveillance Requirements, or revise the Frequency to 31 days.

NMPC Response:

The fuel oil capacity of each day tank is 675 gallons. The fuel oil consumption rate at full load is approximately 5 gpm for the Division 1 and 2 DGs and approximately 3.2 gpm for the Division 3 DG. Thus, for the 1 hour run required by ITS Surveillance Requirement (SR) 3.8.1.3, the Division 1 and 2 DGs will burn approximately 300 gallons of fuel oil and the Division 3 DG will burn approximately 192 gallons of fuel oil. With the day tanks completely full, the Division 1 and 2 DGs will burn sufficient fuel oil to decrease level below the minimum required day tank level of ITS SR 3.8.1.4. However, with the day tank completely full, the Division 3 DG does not burn sufficient fuel oil during the 1 hour run to decrease level below the minimum required day tank level of 282 gallons. For the Division 3 DG day tank, there is an excess capacity of approximately 100 gallons of fuel oil above that needed for the 1 hour run and the minimum required by ITS SR 3.8.1.4. While the Reviewer's Note in the Bases said that if the transfer pumps are needed to refill the DG day tanks after each performance of ITS SR 3.8.1.3, it did not seem appropriate to change the frequency for the Division 3 DG transfer pumps to 92 days, but maintain the frequency for the Division 1 and 2 DG transfer pumps at 31 days, since the pumps are of an identical design. In addition, it did not seem appropriate to keep the frequency for the Division 3 DG transfer pumps at 31 days, since they were not always required to be run after performance of ITS SR 3.8.1.3 to refill the day tank. Therefore, 92 days was chosen as the Frequency for all three Divisions since this is the normal frequency for pump testing required by the Inservice Testing (IST) Program.

3.8.1-05 *CTS SR 4.8.1.1.2.e.1*
DOC LA.4

The CTS requirement to perform an inspection of DGs in accordance with manufacturer's recommendations is proposed to be removed from TS and relocated to the FSAR.

Comment: Removal of the requirement form the TS is acceptable. However, the staff questions whether relocating this requirement to the FSAR is the appropriate thing to do. Should consideration not be given to including this requirement as part of the DG maintenance plan, or other documents besides the FSAR?

NMPC Response:

In previous ITS submittals, the NRC has required any CTS requirement being relocated using "LA" DOCs to be placed in documents controlled by 10 CFR 50.59, the Bases Control Program, or other regulatory controlled documents (e.g., the IST Program). The Bases do not appear to be a proper location for the information being relocated by the LA.4 DOC (DG inspection requirements), and the DG inspection requirements are not controlled by another regulatory controlled document. Thus, the Updated Safety Analysis Report (USAR), which is controlled by the provisions of 10 CFR 50.59, was chosen. The actual inspection requirements are also currently located in NMP2 plant maintenance procedures.

3.8.1-06 *CTS SR 4.8.1.1.2.e.4.a) 2) 4.8.1.1.2.e.6.a) 2) & SR 4.8.1.1.2.e.6.b) 2)*
DOC LA.7

The DOC proposed relocation of the CTS requirement that the auto -connected loads be energized" through the load timers" to the Bases in a discussion of the DG loading logic.

Comment: The staff does not agree with the proposal to relocate the SR requirement "through the load times to the Bases. The load times are an integral part of the DG OPERABILITY which should be stated in the TS.

DOC LA.7 also includes a discussion regarding the Div. III response time which is proposed to be deleted from CTS SR 4.8.1.1.2.e.6.b) 2). The DOC states that the HPCS response time is stated in ITS LCO 3.5.1 and need not be repeated in LCO 3.8.1. The staff does not entirely agree with this discussion. While LCO 3.5.1 may be the controlling factor for HPCS response time, some value of time must be included in ITS SR 3.8.1.17 in order to establish an acceptance criteria. This value may be identical to the value in LCO 3.5.1, or one that reflects actual DG capability, but a value needs to be included in the SR.

NMPC Response:

a. As stated in DOC LA.7, the DG can only automatically energize these loads through the load timers. This is a design feature of the DGs. There is no reason to state this

fact in the SR; this information is more appropriately located in the Bases. While NMP2 concurs that the individual load timers can affect the proper operation of the DGs, CTS 4.8.1.1.2.e.12 (ITS SR 3.8.1.16), which requires verification that the interval between each sequenced load block is within proper limits, ensures proper operation of the load timers. Thus, if while performing a DG loss of offsite power (LOOP) test required by CTS 4.8.1.1.2.e.4.a) (ITS SR 3.8.1.9) or a DG LOOP/loss-of-coolant accident (LOCA) test required by CTS 4.8.1.1.2.e.6.a) (ITS SR 3.8.1.17) a load timer fails, then not only would the SR that is being performed (i.e., ITS SR 3.8.1.9 or ITS SR 3.8.1.17) be failed (due to the failure of the load to be automatically energized), but also ITS SR 3.8.1.16 would be failed, since the time interval between two sequenced load blocks would not be within the applicable limit. Therefore, since failure of ITS SR 3.8.1.16 would require the associated DG to be declared inoperable, there is no reason to require the words "through the load timers" to be in ITS SRs 3.8.1.9 and 3.8.1.17. This change has also been approved by the NRC in the most recently approved BWR 5 ITS submittal (Washington Public Power Supply System's WNP2, Amendment 149).

b. CTS 4.8.1.1.2.e.6.b) requires the Division 3 DG to energize permanently connected and automatically connected loads within 10 seconds after receipt of a LOOP signal coincident with an emergency core cooling system (ECCS) actuation signal. DOC LA.7 is only justifying the removal of the 10 second requirement for the automatically connected loads. ITS SR 3.8.1.17 is maintaining the 10 second requirement for the permanently connected loads. This will ensure the Division 3 DG is tied to its associated 4.16 kilovolt (kV) emergency bus and supplying it power. Once the DG is tied to the bus, the high pressure core spray (HPCS) pump has electrical power, and the HPCS logic will start the pump. If the pump does not start, in all likelihood, the HPCS logic is inoperable, not the Division 3 DG. The automatic time is not required in this SR since the HPCS response time requirements in ITS SR 3.5.1.8 ensure the proper operation of the HPCS pump. In addition, the Division 3 DG does not energize any automatically connected load through a load timer; they all energize when power is available to the 4.16 kV bus. This was another reason the words "through the load timers" were not used in ITS SRs 3.8.1.9 and 3.8.1.17. Therefore, since a 10 second value is included in ITS SR 3.8.1.17, and the total HPCS response time is required by another Specification, it is not necessary to include the same value for the automatically connected load portion of the SR.

3.8.1-07 *CTS SR 4.8.1.1.2.e.5.a)*
DOC M.11

The DOC states that some of the Div. I and II emergency loads are auto connected to the offsite circuit through the load timers. The DOC further states that failure of a proper load timer to operate could result in a loss of offsite power.

Comment: The licensee is required to provide a discussion on how the load timers are designed to work, the failure modes the timers may experience, the impact of load timer failure on both offsite and onsite AC power sources, and why the load timers are not included as part of LCO 3.8.1 (what, if any difference is there between load timers and a sequencer with respect to impact on offsite circuits and DGs).

NMPC Response:

ITS SR 3.8.1.10.d and e require verification that on an ECCS actuation signal, the permanently connected loads remain energized from offsite power and that the automatically connected loads are connected to offsite power. These two requirements are not currently required by the CTS. The NMP2 design includes two complete sets of load timers for the low pressure ECCS pumps, one set for when offsite power is available, and another set for when offsite power is unavailable (i.e., the DGs are supplying power). Two low pressure ECCS pumps are powered by the Division 1 4.16 kV emergency bus and the other two low pressure ECCS pumps are powered by the Division 2 4.16 kV emergency bus. Due to the voltage drop experienced when the low pressure ECCS pumps start, starting both low pressure ECCS pumps simultaneously on a single 4.16 kV emergency bus could result in loads experiencing a low voltage condition (if the initial bus voltage is sufficiently low prior to the accident signal). However, the low voltage condition does not result in an actuation of the loss of power instrumentation; the offsite circuits are not affected and will not trip if both low pressure ECCS pumps start simultaneously. Therefore, time delay relays are installed in the low pressure ECCS pump's logic to sequence the two pumps to preclude a low voltage condition to individual loads. As with most relays, their settings may drift, or they may fail such that they never function (i.e., an infinite time delay) or instantaneously function (i.e., a zero time delay). A failure of a time delay relay would only impact the loads in the associated divisions if it failed such that both low pressure ECCS pumps energize too close to one another, such that a low voltage condition results. Any other type of failure would only impact an individual ECCS pump, and this is covered by ITS 3.3.5.1, since these time delay relays and their Allowable Values (as they affect ECCS pump operation) are included in the ECCS Instrumentation requirements. Thus, these time delay relays are covered by two separate Technical Specifications, ITS 3.3.5.1 and ITS 3.8.1. (While the low voltage condition described above does not result in a loss of an offsite circuit, it does affect the ability of the offsite circuit to perform its required safety function.) These time delay relays are not equivalent to the Improved Standard Technical Specification (ISTS) term "load sequencer" used in ISTS Limiting Condition of Operation (LCO) 3.8.1.c. In the ISTS, the load sequencer affects both the offsite circuit and the DGs; i.e., failure of a load sequencer as described in the ISTS will result in no power to the associated 4.16 kV emergency bus. In the NMP2 design, failure of these time delay relays only affects the associated offsite circuit. If during a LOCA event a time delay relay failure occurs resulting in a loss of individual loads, the loads can still be restarted once the low votlage condition clears, (which occurs in at most, a few seconds). In addition, the DG is still capable of tieing to the 4.16 kV bus. In addition, separate time delay relays, different from the ones used to sequence the low pressure ECCS pumps onto the 4.16 kV emergency bus when offsite power is supplying the 4.16 kV emergency bus, will sequence the low pressure ECCS pumps onto the 4.16 kV emergency bus when the DGs are supplying power.

In addition, in DOC M.11, the statement is made that "if the proper load timer does not operate, a LOOP could result." While an individual timer can only affect one offsite circuit, the statement was referring to the fact that since these timers are not currently in the CTS in the AC Sources Specification (i.e., the interval between the timers is not a CTS requirement), none of the timers could be assumed to function properly, thus both circuits would be affected. However, it is recognized that this statement can be easily misinterpreted to mean that a single timer malfunctioning could result in an entire LOOP. Therefore, DOC M.11 will be revised to clearly state that an individual timer can only affect one offsite circuit.

3.8.1-08 *DOC L.17*
CTS 4.8.1.1.2.e.13

CTS 4.8.1.1.2.e.13 requires, "Verifying that the following diesel generator lockout features prevent diesel generator starting only when required: a) For Divisions I and II, turning gear engaged and emergency stop, and b) For Division III, engine in the maintenance mode and diesel generator lockout." This requirement has not been retained in corresponding ITS 3.8.1 in accordance with the STS. It has been proposed to delete this requirement.

Comment: It is more appropriate that this requirement be moved to some other licensee controlled document. Revise the submittal to specify the new location for this requirement.

NMPC Response:

The features described in CTS 4.8.1.1.2.e.13 are features included in the DG design to preclude it from starting on an automatic signal. These features can be used as a means to place the DG in a condition to preclude it from operating. These features provide a similar function as racking out a breaker on a ECCS pump to de-energize the ECCS pump and keep it from automatically starting when maintenance is performed on the pump. This change is only allowing the requirement to be deleted from the TS; it is not allowing these features to be removed from the plant. Plant procedures currently exist to test these features. NMP2 currently intends to maintain the existing procedure requirements and continue to test the features. Since the features are not needed for the DG to perform its safety function, there is no reason to relocate the requirement to a 10 CFR 50.59 controlled document. Maintaining these requirements in a plant procedure is adequate.

3.8.1-09 *NUREG LCO 3.8.1.c & Condition F, NUREG SR 3.8.1.11, ITS SR 3.8.1.9*
JFD1 and JFD3

a. *The JFDs do not address the deletion of load sequencers.*

b. *In part C.2 of the SR, the term "load timers" should be substituted for "automatic load sequencer." In DOC M. 11, it is stated that the failure of a load timer to operate could*

result in a loss of offsite power. It is assumed that the same load timer failure would cause a loss of the associated DG. Based on DOC M.11, the load timers are an integral part of DG OPERABILITY and should be included in the SR.

In part b, part C.2 and part C.5 of this SR, wording is added regarding load shedding and energizing of auto-connected loads only being applicable to the Division 1 and 2 DGs. JFD 3, however, does not provide an adequate justification for this change.

Comment: The staff questions whether load sequencer (or load timers) should be retained in the LCO. See above question 3.8.1-07. The licensee is required to revise JFD 3, or provide another JFD to adequately explain why this change is acceptable; i.e., Div. 3 does not have any auto-connected loads for a loss of offsite power event, but does have permanently connected loads.

NMPC Response:

a. NMP2 does not have "load sequencers." Loads are sequenced onto the Division 1 and 2 4.16 kV emergency buses using individual time delay relays, with one time delay relay starting one load (Division 3 has no time delay relays). The time delay relays are associated with the individual load's starting logic. As described in our response to Request for Additional Information (RAI) 3.8.1-07 above, separate time delay relays are provided to sequence a load onto the 4.16 kV emergency bus; one time delay relay for sequencing the load when the 4.16 kV emergency bus is being powered from the offsite circuit and a separate time delay relay for sequencing the load when the 4.16 kV emergency bus is being powered from the DG. Since a time delay relay can only affect, at most, one power source, the NMP2 design is different than that assumed by the ISTS. Thus, NMP2 did not adopt the bracketed ISTS load sequencer requirements and justified this using Justification for Deviation (JFD) 1. JFD 1 states that the bracketed requirement has been deleted because it is not applicable to NMP2. This seems an appropriate justification.

b. With regards to substituting the term "load timers" for "automatic load sequencer" in ITS SR 3.8.1.9.c.2, part a of the NMP2 response to RAI 3.8.1-06 applies. NMP2 does not believe the term is necessary in ITS SR 3.8.1.9. With regards to the question about DOC M.11, the NMP2 response to RAI 3.8.1-07 applies.

c. NMP2 design for the Division 3 4.16 kV emergency bus includes a load shedding scheme where the loads are re-energized immediately upon restoration of power; the loads are not sequenced back onto the emergency buses through load timers. Thus, even if the loads are not shed when offsite power is lost, the DG will still operate and pick up the loads when it re-energizes the emergency bus. In addition, the Division 3 DG does not have any auto-connected shutdown loads on a LOOP signal. Therefore, these requirements are not in the CTS and have not been adopted in the ITS. JFD 3 stated that the proper NMP2 plant specific nomenclature/value has been provided. While this is technically correct, it does not provide any amplifying details. Therefore,

a new JFD will be provided to better explain why this ISTS requirement is not needed for Division 3.

3.8.1-10 *NUREG/ITS SR 3.8.1.2, Bases page B3.8-17*
JFD 7

Note to this ITS SR was modified to add "All DG starts, except once per 184 days, may be followed by..." Terms added "In addition, to minimize wear and tear..." to SR 3.8.1.2

Comment: The exception for DG warmup prior to loading every 184 days is not necessary. All starts for the purpose of this SR may be followed by a warmup period prior to loading.

NMPC Response:

ITS SR 3.8.1.2 and associated Bases will be modified to allow a warmup period for the 184 day test. In addition, appropriate changes will be made to the JFD, CTS markup, DOC, and No Significant Hazards Consideration (NSHC) to reflect this modification.

3.8.1-11 *NUREG SR 3.8.1.9, ITS SR 3.8.1.7, NUREG SR 3.8.1.10, ITS SR 3.8.1.8, NUREG SR 3.8.1.14, ITS SR 3.8.1.12*
JFD 13

Per JFD 13, a Note is added to this SR which states that, under certain grid condition, the power factor limit is not required to be met.

Comment: The staff understands the concern and accepts the proposed solution with one exception. As proposed, the power factor limit is stated in the Bases, not in the TS. The staff understands the concern and accepts the proposed solution with one exception. As proposed, the power factor limit is stated in the Bases, not in the TS. The proposed Note, therefore, has the effect of making the Bases a part of the TS. This is not acceptable and needs to be changed. The power factor limits can be included in the SR without concern because the proposed Note allows the limit to be not met if grid condition do not permit it. The licensee should include the power factor limits in the SR so as to eliminate the potential problem with the Bases as discussed above.

NMPC Response:

There are numerous Surveillances in the ISTS and the CTS where the required limit is either in the Bases or in a licensee controlled document. This does not have the effect of making the Bases or licensee controlled document part of the TS. For example, ITS SR 3.8.3.3 requires the new fuel oil properties to be maintained within the limits of the Diesel Fuel Oil Testing Program. The actual numerical values for the limits are not in the TS; they are located in the

Bases for ITS SR 3.8.3.3. This does not make the Bases for ITS SR 3.8.3.3 part of the ITS. This allows the licensee to control changes to the values without the need for a TS change.

The actual values for the power factor limits are not specified in the CTS. While NMP2 agrees that power factor limits should be required by the ITS, the actual values should be maintained under licensee control. Currently, the DG loading requirements, which control the actual power factor limits, are in the USAR. Thus, NMP2 can change the loading on a given DG using the provisions of 10 CFR 50.59. If the actual power factor limits are placed in the ITS, then a TS change could be required to change the loading of a DG. With the power factor limits in the Bases, any changes to the limits (resulting from a USAR change to the DG loads) would be controlled by the Bases Control Program in Section 5.5 of the ITS (i.e., a TS change would not be required). Therefore, it is the desire of NMP2 to maintain the power factor limits in the Bases, so that any changes will not require a TS change, consistent with the current controls.

3.8.1-13 *JFD1, JFD 3, JFD7*
ITS SR 3.8.1.10 item e
STS SR 3.8.1.12 item e
Bases pages B 3.8-25 and B 3.8-26, SR 3.8.1.10

a. *Item e for STS SR 3.8.1.12 requires that emergency loads are auto-connected to the offsite power system. This requirement has been adopted as item e for corresponding ITS SR 3.8.1.10, for Divisions 1 and 2 only.*

b. *In the first paragraph of this Bases discussion, the phrase "for Div. 1 and 2, only" is added. In the second paragraph a comment is added to the effect the requirement extends only to Div. 1 and 2 because the logic is different based on the power source.*

Comment: JFD 3 does not explain why this requirement does not also apply to Division 3. Revise the submittal to explain why this requirement does not apply to Division 3. The licensee is required to explain why the loading of permanently connected and emergency loads is not required for Div. 3, and how the power source affects this SR.

NMPC Response:

The connection of the auto-connected emergency loads onto the Division 3 4.16 kV emergency bus is not dependent upon the source of the power supply to the 4.16 kV emergency bus. The emergency loads are connected in an identical manner, regardless of whether the power supply to the 4.16 kV emergency bus is the DG or an offsite circuit. This is consistent with the CTS, which does not require the Division 3 emergency loads to be verified during the LOCA test. The proper operation of the Division 3 emergency loads is verified by CTS 4.8.1.1.2.e.6.b) (ITS SR 3.8.1.17), the LOCA/LOOP test. JFD 3 stated that the proper NMP2 plant specific nomenclature/value has been provided. While this is technically correct, it does not provide any amplifying details. Therefore, a new JFD will be provided (this new JFD will be

combined with the new JFD discussed in part c of the NMP2 response to RAI 3.8.1-09 above) to better explain why this ITS requirement is not needed for Division 3.

3.8.1-15 NUREG SR 3.8.1.12 ITS SR 3.8.1.10
JFD 3

In parts d. and e of this SR, wording is added which indicates that permanently connected and auto-connected emergency loads are only associated with Divisions 1 and 2.

Comment: Is the added wording correct? Are there no permanently connected loads associated with Div. 3? Does the HPCS not start on an ECCS initiation signal? JFD 3 does not provide adequate answers to these questions.

NMPC Response:

The maintaining of permanently connected loads energized from the offsite circuit is not required to be tested for the Division 3 4.16 kV emergency bus during the LOCA test. The NMP2 design for the Division 3 4.16 kV emergency bus does not include any additional permanently connected loads that are not adequately tested by CTS 4.8.1.1.2.e.4.b) (ITS SR 3.8.1.9), the LOOP test, and CTS 4.8.1.1.2.e.6.b) (ITS SR 3.8.1.17), the LOCA/LOOP test. Also, as described in the NMP2 response to RAI 3.8.1-13, the connection of the auto-connected emergency loads (e.g., HPCS) onto the Division 3 4.16 kV emergency bus is not dependent upon the source of the power supply to the 4.16 kV emergency bus. Therefore, these requirements are not in the CTS and have not been adopted in the ITS. JFD 3 stated that the proper NMP2 plant specific nomenclature/value has been provided. While this is technically correct, it does not provide any amplifying details. Therefore, a new JFD will be provided (this new JFD will be combined with the new JFD discussed in part c of the NMP2 response to RAI 3.8.1-09 and the NMP2 response to RAI 3.8.1-13, above) to better explain why this ITS requirement is not needed for Division 3.

3.8.1-17 NUREG SR 3.8.1.18 ITS SR 3.8.1.16
JFD3

This SR involves a loss of offsite power in conjunction with a ECCS initiation signal. The SR requires energizing permanently connected loads (read energize ESF bus) in 10 seconds. In previous SRs involving loss of offsite power, the response time is stated as 13.12 seconds (allows 3.12 seconds for voltage relays to respond).

Comment: For consistency, should this response time not also be 13.12 seconds? If not, please explain why this is different from other SRs? Also, the term "load timers" should be substituted for "load sequencer" (proposed to be deleted). Additionally, Part b. of this SR is

modified to be applicable only to Div. 1 and 2. JFD 3 does not explain why this change is acceptable. The licensee should revise JFD 3 to provide the appropriate justification.

NMPC Response:

a. The DGs receive start signals from both a LOOP signal and a LOCA signal. When only a LOOP signal is received, the DG does not receive a start signal for 3.12 seconds after the loss of voltage channels trip (i.e., sense low voltage). This delay is performed by a time delay relay that is specified in CTS Table 3.3.3-2, Trip Function D.1 (ITS Table 3.3.8.1-1). When a LOCA signal is received separately or coincident with a LOOP signal, the DG receives a start signal from the LOCA start logic without an additional time delay. Thus, when a LOCA/LOOP signal is received, the DG receives an instantaneous start signal from the LOCA logic and a start signal after 3.12 seconds from the LOOP logic. After the 3.12 second time delay expires, the DG supply breaker receives a permissive signal to close, which then allows energization of the bus once the DG is at proper speed and voltage. Since the DG is receiving a start signal coincident with the LOCA signal, it is required to energize the emergency buses in the normal 10 second time period. When it is started only by a LOOP signal, it is required to energize the emergency buses 10 seconds after receiving the start signal, which does not occur until 3.12 seconds after the loss of voltage channels trip; i.e., 13.12 seconds after the loss of power signal. In addition, it was noted that the LOOP delay time (13.12 seconds) provided in ITS SR 3.8.1.9 is not consistent with the Allowable Value for the time delays provided in ITS Table 3.3.8.1-1, Functions 1.b and 2.b. The time in ITS SR 3.8.1.9 will be changed from 13.12 seconds (which allows 3.12 seconds for the timers to time out) to 13.20 seconds (which allows 3.20 seconds for the timers to time out) to be consistent with the ITS 3.3.8.1 Allowable Values. The change in the loss of voltage Allowable Values from 3.12 seconds (the current Allowable Value in CTS Table 3.3.3-2) to 3.20 seconds is discussed and justified in ITS 3.3.8.1. Appropriate Bases changes will also be made.

b. The discussion concerning why "load timers" is not used in the ITS is provided in part a of the NMP2 response to RAI 3.8.1-06 and parts a and c of the NMP2 response to RAI 3.8.1-09. Therefore, these requirements are not in the CTS and have not been added into the ITS. JFD 3 stated that the proper NMP2 plant specific nomenclature/value has been provided. While this is technically correct, it does not provide any amplifying details. Therefore, a new JFD will be provided (this new JFD will be combined with the new JFD discussed in part c of the NMP2 response to RAI 3.8.1-09 and the NMP2 responses to RAI 3.8.1-13 and RAI 3.8.1-15, above) to better explain why this ISTS requirement is not needed for Division 3.

3.8.1-18 Bases Page B 3.8-1 Insert B.3.8.1 BKGD-A

Is Auxiliary Boiler Transformer 2ABS-X1 a fully qualified offsite source? Is it part of the licensing basis for NMPII? Can this source be substituted for either of the Reserve Station

Transformers? Can this source handle the accident loads associated with Div. 1 or Div. 2? Does this source satisfy the LCO?

NMPC Response:

The Auxiliary Boiler Transformer (2ABS-X1) is a fully qualified offsite source and it is part of the licensing basis of NMP2, as discussed in USAR, Section 8.3.1. The Auxiliary Boiler Transformer can only be used to supply Division 1 or Division 2, since there are no connections from the Auxiliary Boiler Transformer to Division 3. When the Auxiliary Boiler Transformer is used, Division 3 will be connected to the available Reserve Station Transformer. The Auxiliary Boiler Transformer is adequately sized to handle all loads (normal and emergency) for either Division 1 or 2. Therefore, the Auxiliary Boiler Transformer can be used as one of the two offsite circuits required to satisfy the LCO requirements. This allowance is discussed in the LCO Section of the ITS Bases.

3.8.1-19 Bases Page B 3.8-2
JFD 1

Deleted words in the first paragraph.

Comment: Why is the phrase "are returned to service via the load sequencer" deleted? To properly reflect plant design, should this not be retained with "sequencer" replaced with "load timers"?

NMPC Response:

The NMP2 design does not include individual time delay relays for all loads that are automatically sequenced onto the 4.16 kV emergency buses. For example, the Standby Gas Treatment System is automatically re-energized when power is available to the 4.16 kV emergency buses, without using a time delay relay. In addition, referencing the USAR Table provides more detail as to when the loads are sequenced onto the 4.16 kV emergency buses, instead of the ITS words that the loads are returned to service, with no discussion of the sequence of when the loads are returned to service.

3.8.1-20 Bases Pages B 3.8-3, B 3.8-4, B 3.8-14, and B 3.8-15
JF6 and JFD 7

a. LCO's deleted paragraph: Based on licensee statements, it appears that the load timers are an integral part of offsite power OPERABILITY.

b. The term "sequencers" in the APPLICABILITY section of Bases page B 3.8-4.

c. Deleted paragraph after E.1on page B 3.8-14 and page -15.

Comment: It seems that the load timers should be included in TS and have a Bases discussion which would substitute for the sequencer discussion which is proposed to be deleted. The term "sequencers" should be replaced with "load timers".

NMPC Response:

As discussed in our responses to RAI 3.8.1-07 and 3.8.1-09, the NMP2 load timers only affect, at most, one power source, not the entire division as described in the ITS. Therefore, the addition of new requirements in the ITS is not necessary.

3.8.1-24 Bases JFD 6
Bases for ITS SR 3.8.1.9, STS Bases markup page B 3.8-25, last paragraph
Bases for STS SR 3.8.1.11

The Bases for STS SR 3.8.1.11 describes the conditions for starting up the Division 3 DG. This material has not been adopted in the Bases for corresponding ITS SR 3.8.1.9. Bases JFD 6 states that this material is not applicable.

Comment: Confirm that the ITS Bases description is correct for the Division 3 DG.

NMPC Response:

NMP2 has reviewed the wording in the Bases for ITS SR 3.8.1.9, with regards to the term "standby condition," and confirmed that it is correct. The ISTS provided a description of standby condition for the Division 1 and 2 DG, and a separate description for the Division 3 DG. NMP2 modified the description of standby condition for the Division 1 and 2 DGs to also cover the Division 3 DG. Therefore, a specific description for the Division 3 DG was not needed and was deleted. At NMP2 the term standby condition means that the engine coolant (for Divisions 1 and 2 only) and lube oil (for all DGs) are being continuously circulated and temperature maintained consistent with manufacturers recommendations.

3.8.2-02 CTS LCO 3.8.1.2 Action a.
DOC LA.2

DOC LA2 proposes to relocate the CTS requirement regarding crane operations over the spent fuel storage pool.

Comment: This is generally acceptable provided movement of heavy loads at NMP2 is consistent with the provisions of GL 80-113 and NUREG-0612. DOC LA.2 should be revised to indicate consistency with the above GL & NUREG.

NMPC Response:

DOC LA.2 will be revised to indicate consistency with GL 80-113 and NUREG-0612.

3.8.2-03 *Bases JFD 2*
Bases for ITS LCO 3.8.2, STS Bases markup page B 3.8-37, last paragraph
Bases for STS LCO 3.8.2

The Bases for ITS LCO 3.8.2 states, 'The start time includes the 3.12 second Loss of Voltage - Time Delay Function Allowable Value specified in LCO 3.3.8.1, Loss of Power (LOP) Instrumentation." This is a proposed difference relative to the Bases for corresponding STS LCO 3.8.2, which does not provide this information.

Comment: Bases JFD 2 does not provide an explanation or reference to support this proposed difference. Revise the submittal to provide an explanation or reference that justifies the proposed difference.

NMPC Response:

When only a LOOP signal is received, the DG does not receive a start signal for 3.20 seconds (see response to RAI 3.8.1-17 part a for discussion of the change from 3.12 seconds to 3.20 seconds) after the loss of voltage channels trip (i.e., sense low voltage). This delay is performed by a time delay relay that is specified in CTS Table 3.3.3-2, Trip Function D.1 (ITS Table 3.3.8.1-1). After the 3.20 second time delay expires, the DG receives a start signal and must start and energize the respective bus within 10 seconds after receiving the start signal. The total time after receipt of the loss of power signal is 13.20 seconds. JFD 2 states that changes have been made (e.g., addition of words to the NUREG) to reflect plant specific system description and analysis description. Many similar changes have been made to the Bases using this type of JFD. In addition, this is the same time as is described in the Bases for ITS 3.8.1, AC Sources-Operating, on page B 3.8-4. An identical JFD is used to describe the addition of similar words in ITS 3.8.1 Bases.

3.8.2-04 *Bases Page B 3.8-38 LCO*
JFD 7

Deleted term in the first paragraph on page B 3.8-38- As discussed in several places in comments on LCO 3.8.1, the staff is of the opinion that the load timers are an integral part of offsite circuit and DG OPERABILITY.

Comment: That portion of the Bases paragraph proposed for deletion should be retained and revised to reflect the load timers. Alternatively, the licensee can demonstrate that load timers are not required in Modes 4 and 5.

NMPC Response:

The statement will be added back into the ITS Bases for 3.8.2, with some changes due to the NMP2 design. The words will now read "In addition, proper sequencing of loads is a required function for offsite circuit OPERABILITY." These words are consistent with a similar statement in the ISTS Bases describing the loading of the DG (DG sentence is in the same paragraph). In addition, it was noted that a similar statement concerning the offsite circuit does not appear in the LCO Bases for ITS 3.8.1. Therefore, for consistency, this same sentence will be added to the Bases for ITS 3.8.1.

3.8.2-05 Bases Page B 3.8-39 Action A.1
JFD 5

In the first paragraph, a discussion is added to the Bases regarding required features being powered from an offsite source that is considered inoperable because it is not powering other required features.

Comment: The staff does not understand what this added discussion means. The licensee is required to provide clarification regarding under what conditions an offsite circuit is considered inoperable even though it is powering required features.

NMPC Response:

ITS LCO 3.8.2.a only requires one circuit to be OPERABLE, and that circuit must power all buses required to be OPERABLE by ITS 3.8.9. In some cases, the one circuit may be required to power two 4.16 kV emergency buses (e.g., in the case where low pressure coolant injection (LPCI) A pump and LPCI B pump are satisfying the ECCS requirements of ITS LCO 3.5.2). If the feeder breaker to the 4.16 kV emergency bus that supplies the LPCI A pump is inoperable (i.e., open and will not close), then the offsite circuit is inoperable, since it is not providing power to all required buses. Required Action A.1 requires declaring all required features inoperable when the offsite circuit is inoperable. This requires declaring the LPCI A pump inoperable, but could also imply requiring the LPCI B pump to be declared inoperable. The added words explain that only those required features that have no offsite power must be declared inoperable. Any feature with the offsite circuit still providing power (e.g., the LPCI B pump) is not required to be declared inoperable, even though the offsite circuit is inoperable. This clarification has been approved at more recent plants implementing ITS (WNP2 and Brunswick 1 and 2).

3.8.3-01 *CTS 4.8.1.1.2.h, Bases page B 3.8-50, and SR 3.8.3.6*
DOC L.4

It is acceptable to relocate this requirement to a licensee controlled document. However, total deletion, as stated in DOC L.4, is not acceptable.

Comment: The licensee should revise the submittal to indicate where the CTS requirement will be relocated to and what controls will be associated with the licensee controlled document.

NMPC Response:

These tests are only being deleted from the TS. The tests will be maintained in plant procedures and continued to be performed. However, changes to these procedures will not specifically be controlled by 10 CFR 50.59. This is considered acceptable since the pressure test portion of the Surveillance is covered by ASME Code Section XI Article IWD-5000, and the maintenance of the underground tank is covered by other governmental regulations. Therefore, NMP2 believes it is acceptable to delete the requirements from the TS and allow plant procedures to control these requirements.

3.8.3-02 *DOC L.4*
CTS 4.8.1.1.2.h.2
ITS 3.8.3

CTS 4.8.1.1.2.h.2 requires, "Performing a pressure test of those portions of the diesel fuel oil system designed to Section III, subsection ND of the ASME Code in accordance with ASME Code Section II Article IWD-5000," at least once per 10 years. This requirement has not been retained in corresponding ITS 3.8.3 in accordance with the STS.

Comment: DOC L.4 states that this requirement is already covered by ASME Code Section XI Article IWD-5000. Revise the submittal to identify the plant program that implements this requirement.

NMPC Response:

The plant program that implements this requirement is the NMP2 Pressure Testing Program. DOC L.4 will be modified to identify this program.

3.8.3-03 *Bases Page B 3.8-47 SR 3.8.3.2*
JFD 5 and JFD 6

The SR requires verifying that the lube oil quantify is equal to or greater than 99 gallons for the Div. 1 and Div. 2 DGs and 168 gallons for the Div. 3 DG. The Bases is modified to

explain that these are values in excess of the level in the DGs recommended by the DG manufacturers, and, at these levels, there is adequate lube oil for 7 days of operation. However, there is a proposed addition to the Bases that states that the 7 day inventory can be in the engine sump, or combination of the engine sump and a remote storage location. These two parts of the Bases for this SR appear to be contradictory.

Comment: The licensee should correct the Bases or provide an explanation of what the proposed Bases changes mean and how they relate to each other.

NMPC Response:

The SR requires sufficient lube oil to operate the DG for 7 days. The DG manufacturer provides a minimum recommended lube oil level. At a lube oil level below this value, the DG may not be able operate for any time, much less for 7 days. Thus, the 99 gallon limit for the Division 1 and 2 DGs and the 168 gallon limit for the Division 3 DG provides 7 days of operation before the minimum recommended lube oil level is reached. The Bases was modified to clarify that the 99 gallon and 168 gallon limits are in excess of the manufacturer's recommended level. For clarity, the word "minimum" will be added before the words "recommended level." In addition, the SR does not state where the 99 gallons and 168 gallons must be located; the Bases provides this information. The DG manufacturer's minimum recommended level is provided in the engine oil sump alone. The 7 day inventory can be provided in the engine oil sump alone, or can be split between the engine oil sump and a remote storage location.

3.8.3-04 *Bases JFD 8*
Bases for ITS SR 3.8.3.3, STS Bases markup page B 3.8-47
Bases for STS SR 3.8.3.3

The Bases for STS SR 3.8.3.3 states, "... but in no case is the time between receipt of new fuel and conducting the tests to exceed 31 days." This has not been adopted in the Bases for corresponding ITS SR 3.8.3.3. Bases JFD 8 states, "Changes have been made to be consistent with the Specification."

Comment: Bases JFD 8 does not explain why this proposed difference is acceptable. Revise the submittal to explain why the proposed difference is acceptable, or conform to the STS.

NMPC Response:

ITS SR 3.8.3.3 requires the new fuel oil properties to be tested and maintained in accordance with the Diesel Fuel Oil Testing Program. The Frequency of this SR is in accordance with the Diesel Fuel Oil Testing Program. ISTS 5.5.10 (ITS 5.5.9) specifies the requirements of the Diesel Fuel Oil Testing Program. Neither ISTS 5.5.10 nor ITS 5.5.9 require the new fuel oil tests to be conducted within 31 days after receipt of the new fuel oil. It is allowed by both ISTS 5.5.10 and ITS 5.5.9 to receive the new fuel oil and store it onsite in a tank other than

the DG storage tanks, without requiring the new fuel oil tests to be performed within 31 days after receipt of the new fuel oil. Certain new fuel oil tests are required prior to addition to the DG storage tanks, while others are required within 31 days after addition to the DG storage tanks. There is no required Frequency of 31 days after receipt of the new fuel oil. Therefore, the Bases of ITS SR 3.8.3.3, which describes the tests required by the Diesel Fuel Oil Testing Program, have been modified, as stated in JFD 8, to be consistent with the Specification (i.e., ITS 5.5.9).

3.8.3-05 Bases Page B 3.8-48 SR 3.8.3.3
JFD 8

The JFD does not provide an adequate justification for deleting "with proper color" from the Bases.

Comment: The licensee should provide an adequate justification, or retain the NUREG language.

NMPC Response:

ITS SR 3.8.3.3 Bases describes the testing requirements of ITS 5.5.9, the Diesel Fuel Oil Testing Program. ITS 5.5.9 does not include a requirement to verify proper color of the new fuel oil. This was justified by JFD 20 in ITS Section 5.5. Therefore, the words in ITS SR 3.8.3.3 Bases have been modified to be consistent with the Specification, as stated in JFD 8. However, to be more accurate, the Bases were modified to be consistent with changes made to the Specification (i.e., ITS 5.5.9). Therefore, the ISTS Bases markup will be modified to annotate JFD 6 for this change in lieu of JFD 8.

3.8.3-07 Bases page B 3.8-47
JFD 1

The licensee has proposed to add a statement to the SR 3.8.3.3 Bases which would allow the fuel oil API gravity or specific gravity to be acceptable if it is within stated values when compared to a suppliers certificate. This proposed change to the Bases is extracted from the CTS Bases.

Comment: The purpose of the Bases is to explain what is contained in TS. The Bases are not to be used to establish requirements or state criteria. In light of this, the staff considers the proposed Bases addition to be Not Acceptable because it addresses an issue that is not part of the ITS. This proposed Bases addition establishes acceptance criteria for API gravity or specific gravity that belong in TS.

If the licensee wishes to use the allowance covered by the proposed Bases addition, the ITS TS

submittal should be revised to include the allowance. The appropriate place for inclusion of the allowance is ITS 5.5.9.

As a practical matter, the staff questions why the allowance is desired. The staff view of the allowance involves conducting the test (API gravity or specific gravity)-and then comparing the results with the suppliers certificate. The allowance does not reduce any requirements, so what is the purpose of having it?

NMPC Response:

ISTS 5.5.10 (ITS 5.5.9), specifies the requirements for the Diesel Fuel Oil Testing Program. However, with the exception of the total particulate limit, no limits for the tests are specified. The limits are provided in ISTS SR 3.8.3.3 (ITS SR 3.8.3.3) Bases. The limits were provided in the ISTS SR 3.8.3.3 Bases since there are no Bases for Chapter 5.0. As stated in the NMP2 response to RAI 3.8.1-11, there are numerous Surveillances in the ISTS and the CTS where the required limit is either in the Bases or in a licensee controlled document. For ISTS 5.5.10, the NRC has placed all but one of the limits in the Bases. At NMP2, a Diesel Fuel Oil Testing Program is in the CTS (CTS 6.8.4.e), with a Surveillance Requirement in CTS 3.8.1.1 (CTS 4.8.1.1.2.c) requiring the Diesel Fuel Oil Testing Program to be performed. In addition, only the Bases for CTS 3.8.1.1 provides the Diesel Fuel Oil Testing Program limits, with the exception of the total particulate limit, which is also specified in the Program. This is consistent with the format of the ISTS, and was approved by the NRC in Amendment 70 to the CTS. Also, additional allowances/limits with regards to gravity, beyond that allowed in the ISTS, are provided in the NMP2 CTS Bases and were also approved by the NRC as part of Amendment 70. These additional allowances were added to the ISTS 5.5.10 Diesel Fuel Oil Testing Program and the specific limits were added to the ISTS SR 3.8.3.3 Bases to be consistent with current licensing basis. The ISTS SR 3.8.3.3 Bases already provides the limit for the absolute specific gravity and the American Petroleum Institute (API) gravity, thus, for consistency with the ISTS, the proper location for the additional limits for the API gravity and specific gravity is the Bases of ITS SR 3.8.3.3, not ITS 5.5.9. This additional method provides another means to verify proper fuel oil properties and maintains current licensing basis.

3.8.4-01 *DOC L.6*
ITS SR 3.8.4.8 Frequency
STS SR 3.8.6.8 Frequency
CTS SR 4.8.2.1.f

DOC L.6 discusses allowing ITS SR 3.8.4.8 to be performed every 24 months when a battery shows degradation OR has reached 85% of expected life with battery capacity equal to or greater than 100% of manufacturer's rating. ITS SR 3.8.4.8, however, only allows the 24 month frequency when the battery has reached 85% of expected life and capacity is equal to or greater than 100%. When a battery shows degradation, ITS SR 3.8.4.8 requires testing every 12 months, regardless of capacity.

Comment: There is a difference between what is stated in DOC L.6 and what is contained in ITS SR 3.8.4.8. This difference needs to be resolved.

NMPC Response:

DOC L.6 will be modified to be consistent with the actual change being proposed. The 24 month Frequency stated in ITS SR 3.8.4.8 is correct; it is only to be used when the battery has reached 85% of its expected life with a capacity ≥ 100% of the manufacturer's rating.

3.8.4-03 *DOC LA.1*
ITS LCO 3.8.4
STS LCO 3.8.4
CTS 3.8.2.1 items a.1, b.1, and c.1

*Items a.1, b.1, and c.1 for CTS 3.8.2.1 specify the DC electrical power source 125 volt batteries for Divisions I, II, and III as 2BYS*BAT 2A, 2BYS*BAT 2B, and 2BYS*BAT 2C, respectively. This material has not been retained in corresponding ITS LCO 3.8.4, in conformance with the STS. DOC LA.1 states that this material will be moved to the Bases.*

Comment: This material could not be found in the proposed Bases for ITS 3.8.4. Revise the Bases to include this material.

NMPC Response:

The battery identification numbers (2BYS*BAT 2A, 2B, and 2C) are not necessary in the Bases to clearly identify the batteries described and required by the LCO statement. The Bases describes the batteries as 125 volt direct current (VDC), independent Class 1E batteries, and references USAR, Section 8.3.2, which provides the battery identification numbers. This is an adequate description of these batteries, as these are the only 125 VDC Class 1E batteries described in USAR, Section 8.3.2. This is consistent with the ISTS Bases, which does not provide equipment identification numbers for the batteries, just a description. DOC LA.1 will be modified to state that this information is moved to the Bases, in the form of a description of the batteries, and that the actual identification numbers are moved to the USAR.

3.8.4-04 *Bases Page B 3.8-58,*
SR 3.8.4.8

The Bases discussion of the modified performance discharge test could be improved by adding some words from DOC L.6 in the CTS markup for LCO 3.8.4.

Comment: Specifically, words to the effect that "the second test rate for the modified performance discharge test is greater than both the steady state and cycling loads" would add

clarity to the Bases. Absent this clarification, it is possible that the Bases could be misinterpreted.

NMPC Response:

The words proposed to be added provide additional information to help justify why the modified performance discharge test rate is greater than the service test rate. These specific words do not appear to add any clarity to the Bases. The ITS SR 3.8.4.8 Bases states (page B 3.8-58) that the modified performance test consists of two rates; the one minute rate published for the battery or the largest current load of the duty cycle, followed by the test rate employed for the performance discharge test. Adding the proposed words from DOC L.4 do not seem to provide any clarity. However, DOC L.4 also states that the test can consist of a single rate if the test rate employed for the performance discharge test exceeds the 1 minute rate. These words appear to add clarity, since both the ISTS and ITS SR 3.8.4.8 Bases states that there are two rates, when in actuality there could only be one rate if the performance discharge test rate is greater than the 1 minute rate. Therefore, these words will be added to the ITS SR 3.8.4.8 Bases.

3.8.4-05 *Bases Page B 3.8-59*
SR 3.8.4.8
JFD 7

What is the justification for stating that degradation is a drop of more than 10% of rated capacity in the previous 72 months?

Comment: JFD 7 does not provide an adequate justification for this change.

NMPC Response:

ITS SR 3.8.4.7 requires a battery service test every 24 months. However, the Note to ITS SR 3.8.4.7 allows a modified performance discharge test to be substituted for the battery service test. As stated in DOC L.4, this will permit NMP2 to perform the modified performance test every refueling outage, which is the current intention of NMP2. ITS SR 3.8.4.8 requires a performance discharge test or modified performance discharge test every 60 months. The ISTS SR 3.8.4.8 Bases description for degradation was based on performing this SR every 60 months, not every 24 months. Thus, the statement in the ISTS SR 3.8.4.8 Bases that degradation is indicated when capacity drops by more than 10% of rated relative to its capacity on the previous performance is not correct for the NMP2 case where the test is performed every 24 months; it is nonconservative. Therefore, to be consistent with the change made to ITS SR 3.8.4.7 (which is the intent of JFD 7 - i.e., changed to reflect a change to the Specification), which allows a modified performance discharge test to be performed every 24 months, the time frame for measuring the 10% of rated capacity drop was changed to three refueling outage intervals: 72 months. This is more conservative than the currently allowed 60 month cycle.

3.8.5-01 *DOC LA.1*
ITS LCO 3.8.5
STS LCO 3.8.5
CTS 3.8.2.2 items a.1, b.1, and c.1

*Items a.1, b.1, and c.1 for CTS 3.8.2.1 specify the DC electrical power source 125 volt batteries for Divisions I, II, and III as 2BYS*BAT 2A, 2BYS*BAT 2B, and 2BYS*BAT 2C, respectively. This material has not been retained in corresponding ITS LCO 3.8.5, in conformance with the STS. DOC LA.1 states that this material will be moved to the Bases.*

Comment: This material could not be found in the Bases. Revise the Bases to include this material.

NMPC Response:

The battery identification numbers (2BYS*BAT 2A, 2B, and 2C) are not necessary in the Bases to clearly identify the batteries described and required by the LCO statement. The Bases references the Bases for LCO 3.8.4, DC Sources — Operating, which describes the batteries as 125 VDC, independent Class 1E batteries, and references USAR, Section 8.3.2, which provides the battery identification numbers. This is an adequate description of these batteries, as these are the only 125 VDC Class 1E batteries described in USAR, Section 8.3.2. This is consistent with the ISTS Bases, which does not provide equipment identification numbers for the batteries, just a description. DOC LA.1 will be modified to state that this information is moved to the Bases, in the form of a description of the batteries, and that the actual identification numbers are moved to the USAR.

3.8.6-02 *ITS 3.8.6 Table 3.8.6-1 Footnote b*
STS 3.8.6 Table 3.8.6-1 Footnote b
CTS 4.8.2.1 Table 4.8.2.1-1 Table Notation e

Footnote b for Table 3.8.6-1 for ITS 3.8.6 states, "Corrected for electrolyte temperature and level. Level correction is not required, however, when battery charging is < 2 amps when on float charge," in conformance with the STS. Table Notation e for Table 4.8.2.1-1 for corresponding CTS 4.8.2.1 states, "Corrected for electrolyte temperature and level."

Comment: This proposed change is not shown on the CTS markup and no justification has been provided to support this proposed change. Revise the submittal to show the proposed change on the CTS markup and provide the appropriate justification for the proposed change.

NMPC Response:

The NMP2 current licensing basis will be maintained; the change to exempt level correction requirements when battery charging current is < 2 amps on float charge will not be adopted.

Appropriate changes to the typed ITS and ISTS markup will be provided.

3.8.7-01 *DOC L.1*
CTS 3/4.8.3.1 Action a.1
ITS 3.8.7 Completion Time for Required Action A.1
STS 3.8.7 Completion Time for Required Action A.1

In the event that an inverter is inoperable, Required Action A.1 for ITS 3.8.7 requires to restore the inverter to Operable status with a Completion Time of 24 hours, in conformance with the STS. Action a.1 for corresponding CTS 3/4.8.3.1 requires to reenergize the division within 8 hours.

Comment: DOC L.1 does not explain why changing from 8 hours to 24 hours is acceptable. Revise the submittal to provide the appropriate justification for the proposed change.

NMPC Response:

DOC L.1 discusses changing the restoration time of an inverter from 8 hours to 24 hours. When an inverter is not supplying its alternating current (AC) distribution panel, the AC distribution panel is still required to be energized by ITS 3.8.8. ITS 3.8.8 provides an 8 hour restoration time if the AC distribution panel is de-energized. DOC L.1 will be modified to more clearly state this requirement and more clearly justify the 24 hour inverter restoration time.

3.8.7-02 *Bases JFD 5*
Bases for ITS 3.8.7 Applicability, STS Bases markup pages 3.8-73 and 3.8-74, last paragraph
Bases for STS 3.8.7 Applicability

The Bases for the Applicability for STS 3.8.7 states, "Inverter requirements for Modes 4 and 5 are covered in the Bases for LCO 3.8.8, Inverters - Shutdown." This has not been adopted in the Bases for the Applicability for ITS 3.8.7. An insert has been proposed that states, "In Modes 4 and 5, the emergency UPS inverters are not required to be Operable since, during these Modes, if a loss of offsite power occurred (which could result in loss of power to the uninterruptible panels until the DG starts and energizes the associated emergency buses) coincident with an accident requiring the ECCS instrumentation to perform their required function, the response time of the ECCS subsystems (which will be delayed due to the loss of power to the uninterruptible panels) is not critical."

Comment: Neither the Bases nor Bases JFD 5 explain why the response time of the ECCS subsystems is not critical. Revise the submittal to provide this explanation.

Is the purpose of the Insert on Bases page 3.8-73 to explain that the inverters (with battery backup) are not required in Modes 4 and 5? Is the basis for this explanation that the UPS panels can be powered from a regulating transformer, only, because the delay in ECCS subsystem response to an accident (coincident with a LOOP) waiting for the DG to come on will not result in unacceptable consequences? Does the insert need to be reworded to more explicitly state this?

NMPC Response:

JFD 5 states that the change to the Applicability Bases was made since the actual LCO requirement for inverters to be OPERABLE in MODES 4 and 5 has not been adopted in the ITS. Since the actual LCO is not being maintained, this JFD seems appropriate. The justification for not including the LCO requirement for inverters to be OPERABLE in MODES 4 and 5 is provided in JFD 1 for ISTS 3.8.8.

In general, the ISTS Bases describes why LCOs are required in certain MODES and why they are not required in the remaining MODES. This was the purpose of the insert. It replaces the ISTS words, which stated that MODES 4 and 5 requirements for the inverters are in another LCO. The insert is essentially stating that if the uninterruptible panels are powered by an interruptible power supply (the Class 1E regulating transformer), the delay in the ECCS subsystem to respond to an accident (coincident with a LOOP) while waiting for the DGs to power the panels will not result in any unacceptable consequences. The response time of the ECCS in this case is not as critical as when the unit is at 100% power. NMP2 has reviewed the Bases insert and believes it provides proper clarity as to the requirements.

3.8.7-03 *DOC LA.1*
ITS LCO 3.8.7
CTS 3.8.3.1

*CTS 3.8.3.1 specifies Division I inverter 2VBA*UPS2A and Division II inverter 2VBA*UPS2B. This material has not been retained in corresponding ITS LCO 3.8.7 in accordance with the STS. DOC LA.1 states that this material has been moved to the Bases.*

Comment: This material could not be found in the Bases. Revise the Bases to include this material.

NMPC Response:

The inverter identification numbers (2VBA*UPS2A and 2B) are not necessary in the Bases to clearly identify the inverters described and required by the LCO statement. The Bases describes the inverters and references USAR, Section 8.3.1.1.2, which provides the inverter identification numbers. This is an adequate description of these inverters, as these are the only Class 1E inverters described in USAR, Section 8.3.1.1.2. This is consistent with the ISTS Bases, which does not provide equipment identification numbers for the inverters, just a

description. DOC LA.1 will be modified to state that this information is moved to the Bases, in the form of a description of the inverters, and that the actual identification numbers are moved to the USAR.

3.8.7-04 *LCO 3.8.7,*
Bases Page B 3.8-73

The proposed LCO requires the UPS inverters to be OPERABLE. In the Bases, OPERABILITY is established as the inverter aligned to the UPS panels at proper voltage and frequency with input power from a divisional 125 vdc battery. Alternatively, the inverter can be powered form an internal AC source/rectifier as long as the battery is available as the uninterruptible power source. Based on this, the staff concludes that the inverter design includes some form of static switch that will transfer the inverter to the battery at some predetermined voltage level.

Comment: The licensee is requested to verify that the staff's conclusion is correct or establish that it is not. Assuming the staff correctly understands the system design, the licensee is requested to show how the static switch function is adequately demonstrated.

NMPC Response:

The inverter can be powered from either an internal AC source/rectifier or a 125 VDC battery. The two sources are in parallel with each other, with the power source at the higher voltage actually supplying power to the inverter: This is normally the AC source/rectifier, since the output of the AC source/rectifier is normally maintained slightly higher than the 125 VDC battery. A blocking diode prevents the AC source/rectifier from charging the 125 VDC battery. When the voltage output from the AC source/rectifier drops below the 125 VDC battery output voltage, the 125 VDC battery automatically picks up the inverter loads. Thus, there is no "static switch" that transfers the inverter to the battery. This design is shown in USAR, Figure 8.3-5.

3.8.8-02 *DOC L.1*
CTS 3/4.8.3.1 Action a
ITS 3.8.8 Conditions A and B
STS 3.8.9 Conditions A and B

Action a for CTS 3/4.8.3.1 addresses the required AC distribution system for either Division I or Division II listed in CTS 3.8.3.1. In the event that either division is not energized, Action a requires to energize the division within 8 hours. This requirement has been divided into two separate Conditions and Required Actions in accordance with the STS. Conditions A and B for corresponding ITS 3.8.8 address the AC electrical power distribution subsystem and the 120 volt uninterruptible electrical power distribution subsystem separately, in accordance with the STS. Associated Required Actions A.1 and B.1 each have Completion Times of 8 hours. In

the event that one division of the AC electrical power distribution subsystem was inoperable, and at some point during restoration, the 120 volt uninterruptible electrical power distribution subsystem for the same division also became inoperable, Condition B for ITS 3.8.8 would provide a separate 8 hour Completion Time to restore the 120 volt uninterruptible electrical power distribution subsystem. This is a proposed change relative to Action a for CTS 3/4.8.3.1.

Comment: DOC L.1 does not address this proposed change. Revise the submittal to provide the appropriate justification for the proposed change.

NMPC Response:

DOC L.1 will be modified to address this change.

3.8.8-03 CTS LCO 3.8.3.1, Actions a. and b.
DOC L.1

CTS and NUREG 1434 each address one AC, DC, or vital AC distribution subsystem inoperable. There is no discussion of multiple distribution subsystems being inoperable (except for Condition F of NUREG LCO 3.8.9). Consequently, multiple distribution subsystem inoperabilities invokes LCO 3.0.3. The licensee has proposed to modify the TS to allow multiple inoperabilities of AC, DC, and vital AC distribution subsystems without entry into LCO 3.0.3 provided there is no loss of function. This proposed change is discussed in DOC L.1.

Comment: DOC L.1 primarily discusses what changes are made, but does not provide much in the way of why the changes are acceptable. In order for the staff to consider the proposed change, DOC L.1 will have to be revised to adequately describe why the proposed change is acceptable.

NMPC Response:

DOC L.1, next to last sentence, states "but will not overly restrict operations when sufficient AC and direct current (DC) buses are Operable to meet accident analysis (assuming no additional single failure)." This is the justification for why the change is acceptable. NMP2 will revise the DOC to more clearly state this justification.

3.8.8-04 CTS SR 4.8.3.1.1, SR 4.8.3.1.2, and ITS SR 3.8.8.1
DOC LA.2, JFD 8

The licensee has proposed to change the CTS terminology "voltage" to "power availability." DOC LA.2 states that this is necessary because the methods to verify OPERABILITY of switchgear, load centers, MCCs and distribution panels are different.

Comment: The staff does not understand how determining the voltage of a switchgear can be any different than determining the voltage of a distribution panel. In addition, the staff is not certain that "voltage" and "power availability" are identical terms. The licensee is requested to revise DOC LA.2 to more completely explain why the change is necessary and to show that the proposed terminology is the same as what is in the CTS.

NMPC Response:

CTS 4.8.3.1.2 only requires the voltage to be verified for the power distribution switchgear, i.e., the 4160 volt alternating current (VAC) and the 125 VDC switchgear. CTS 4.8.3.1.1 requires the remaining required buses to be verified energized by monitoring the inoperability status indicator.lights. At NMP2, all required buses do not have voltage indication. Thus, the CTS recognized this design and only required voltage to be verified for the main buses, the 4160 VAC and 125 VDC switchgear. In the ITS, the words "power availability" were used instead of describing each type of method used for each type of electrical bus. DOC LA.2 provides the justification for this change, and describes that this change was made since the methods to verify Operability of the switchgear, load centers, motor control centers (MCCs), and distribution panels are different. For clarity, a parenthetical statement will be added to DOC LA.2 to describe the different methods of verifying power availability. LA.2 also describes that the manner in which power availability is verified is provided in the Bases. The actual methods described in CTS 4.8.3.1.1 and 4.8.3.1.2 are provided in the Bases for ITS SR 3.8.8.1. This similar change was found to be acceptable for the most recent BWR5 ITS conversion (WNP2).

3.8.8-06 NUREG LCO 3.8.9, ITS LCO 3.8.8, Conditions A, B & C
JFD 4

The proposed generic change to the NUREGs to add "or more" to Conditions A, B & C of this NUREG LCO has NOT been accepted.

Comment: This lack of generic acceptance notwithstanding, the staff will consider the change for NMP2. However, the proposed wording of "One or both" for Condition A is not acceptable. This terminology would indicate that there are only 2 AC subsystems that are covered by the Condition when in fact there are numerous subsystems as detailed in Bases Table B.3.8.8-1. The terminology for Condition A should be changed to "One or more" Division 12 and Division 2 electrical power distribution subsystems inoperable. For consistency, the terminology for Conditions B and C should be the same even though there may only be 2 subsystems in each case. The same thing applies to Condition E.

NMPC Response:

While there are more than two buses in a Division, a subsystem comprises an entire Division; it includes all AC, DC, or 120 VAC uninterruptible buses in a Division. This is shown in Note (a) to Table B 3.8.8-1 in the ITS Bases. Thus, use of the term "one or both" when referring to Divisions 1 and 2 is correct, since ACTIONS A, B, and C are referring to only these two Divisions. In general, the ITS uses the words "one or both" when it is referring to a maximum of two items, and uses "one or more" when it can be applicable to three or more items. For clarity, the LCO section of the Bases will be clarified to reflect the Table B 3.8.8-1 Note (a) description. In addition, Condition E uses the term "one or both" in lieu of "one or more" since it is referring to only two subsystems; Division 3 AC subsystem and Division 3 DC subsystem.

3.8.8-08 Bases Page B 3.8-83 LCO
JFD 2

The NUREG Bases are proposed to be changed with regard to closed tie breakers and OPERABILITY of redundant distribution subsystems.

Comment: In the proposed Bases, when tie breakers are closed, only the distribution subsystems that are not powered from their normal source are considered inoperable. This does not appear to be acceptable. With tie breakers closed, a single event could make all connected distribution systems inoperable. Therefore, all distribution subsystems affected by the closed tie breaker(s) are considered inoperable. Note also that the proposed Bases do not appear to be consistent with the CTS. The Bases should be revised.

NMPC Response:

With an entire Division de-energized, the CTS and ITS allow operation for 8 hours or 2 hours, depending upon whether it is an AC or DC Division (CTS 3.8.3.1 Actions a.1 and b.1, ITS 3.8.8 ACTIONS A, B, and C). During this 8 hour or 2 hour time, it is recognized that a single failure could de-energize the remaining Division. With the tie breakers closed, a single failure could also make all connected distribution subsystems inoperable. This condition is equivalent to when an entire Division is de-energized, as described above. When the tie breakers are closed, the Division that is not receiving power from its normal source is considered inoperable. ITS 3.8.8, ACTION A (CTS 3.8.3.1 Action a) would be entered in this case (there are no tie breakers between the 120 VAC uninterruptible buses or between the DC buses), and an 8 hour restoration time would apply. There is no reason to declare both Divisions inoperable and enter CTS 3.0.3 (ITS 3.8.8 ACTION F), since a loss of function has not occurred. The CTS does not specifically require all associated Divisions to be declared inoperable when tie breakers between Division 1 and Division 2 are closed. NMP2 would make the proper determination as to what is inoperable and take the appropriate action; in this case to declare one Division inoperable (the Division that is not receiving normal power) and take the actions required by CTS 3.8.3.1 Action a. Therefore, this statement in the Bases is

also consistent with current licensing basis. In addition, during the development of this response, it was noted that additional clarity could be provided in the LCO section of the Bases that the tie breakers are only associated with the inter-connection of Division 1 and Division 2. This additional clarity will be provided to the Bases.

3.8.8-09 Bases Page B 3.8-83, Applicability
JFD 6

A statement is added to the last paragraph of the Applicability discussion to the effect that "other conditions in which the 120 VAC uninterruptible power distribution subsystems are required" are covered in the Bases for LCO 3.8.9, "Distribution Systems - Shutdown."

Comment: The Applicability for LCO 3.8.9 is Modes 4 and 5, and during movement of irradiated fuel in the secondary containment. This Applicability means that the 120 VAC uninterruptible power is required to be OPERABLE in Modes 4 and 5. This requirement is directly contrary to the statement in LCO 3.8.7 that the 120 VAC power is not required in Modes 4 and 5. The proposed ITS and associated Bases will have to be revised to make it clear that the requirement for 120 VAC power is only applicable during movement of irradiated fuel.

NMPC Response:

The 120 VAC uninterruptible panels are required in MODES 4 and 5 and during movement of irradiated fuel in the secondary containment. They can, however, be powered from the inverters or the Class 1E regulating transformer. Either one of these power sources can provide power to the 120 VAC uninterruptible panels. The Bases statement in ITS 3.8.7 refers only to the fact that the 120 VAC uninterruptible panels are not required to be energized from the inverters in MODES 4 and 5; not that they are not required to be energized. The Bases statement in ITS 3.8.7 Applicability section states "...if a loss of offsite power occurred (which could result in loss of power to the uninterruptible panels until *{emphasis added}* the DG starts and energizes the associated emergency buses)..." When the DG re-energizes the associated 4.16 kV emergency bus, the associated 120 VAC uninterruptible panel is re-energized, and it performs its required safety function.

3.8.8-10 Bases Pages B 3.8-84, 85, and 87

The Bases discussions for Actions A.2, B.1, and C.1 all include a discussion of the worst case scenario being one division of AC, 120 VAC uninterruptible, or DC without power. However, the LCO conditions are proposed to include "one or more" in each of the Conditions.

Comment: Based on the proposed LCO wording, the worst case scenario for all 3 power sources would be both divisions without power. This, however, would result in entry into LCO 3.0.3. These Bases discussions need to be modified to reflect the proposed LCO wording.

NMPC Response:

The statement in the first paragraph of the Bases for Actions A.1, B.1, and C.1, describing the condition of one or more AC, 120 VAC, or DC buses inoperable, have all been modified, due to the changes to the ITS ACTIONS, to state that a loss of function has not yet occurred. In the paragraph describing the Condition A, B, or C worst case scenario, it is assuming that a loss of function has not occurred. Thus, the worst case for this specific condition is a loss of one division, (i.e., no offsite power to the division and the associated DG inoperable), since a loss of two divisions would result in entering ACTION F (which requires a LCO 3.0.3 entry). Therefore, no change to the Bases appears necessary.

3.8.8-11 Bases Page B 3.8-89 - Action F.1
JFD 9

This Bases discussion for item Action F.1 needs to be explained to include specific examples of how combinations of inoperable electrical power distribution subsystems result in a loss of function.

Comment: Special emphasis should be placed on how inoperabilities in Div. 3 interact with inoperabilities in Div. 1 or 2 to cause a loss of function. The Bases discussion should also be expanded to include a detailed discussion of how the determination is made that a loss of function has occurred as a consequence of multiple electrical power distribution subsystem inoperabilities.

NMPC Response:

NMP2 did not add discussions concerning the relationship between Divisions 1, 2, and 3, nor how the determination is made that a loss of power has occurred, since the ISTS Bases did not discuss these issues. However, for clarity and consistency, a statement similar to that found in the Bases for ISTS 3.8.1 ACTIONS B.2 (which describes the relationship between Divisions 1, 2, and 3) will be added to the Bases for ITS 3.8.8, ACTIONS F.1.

3.8.8-13 *Bases Page B 3.8-89 Insert SR 3.8.8.1*
JFD 2

The staff does not agree with the last sentence in the Insert.

Comment: Verification that a load is energized does not ensure the associated bus is energized to the correct voltage; delete the word "Normally" in the Insert.

NMPC Response:

Neither CTS 4.8.3.1.2 nor ITS SR 3.8.8.1 require a verification that the associated bus is energized to the correct voltage; they only require verification that the bus is energized by verifying voltage. Neither CTS 3.8.3.1 nor ITS 3.8.8 provide a voltage limit. Therefore, the manner in which voltage is verified is determined by NMP2. Normally, NMP2 verifies voltage by checking the voltage indicator for the 4160 VAC and 125 VDC switchgear and by verifying no inoperability status indicator lights are lit in the control room for the remaining required buses (load centers, MCCs, and distribution panels). An alternate method for verifying voltage is to observe a load on the associated bus is energized. If the load is energized, it obviously has adequate voltage to operate the equipment. Therefore, this method is acceptable. This method of verifying voltage has been previously approved for the most recent BWR5 ITS conversion (WNP2). However, to ensure that the current licensing basis methods are used, when available, the alternate method will only be used if a voltage indicator or inoperability status indicator lights are not functioning properly. The Bases will be modified to reflect when the alternate method is used.

3.8.9-02 *ITS LCO 3.8.9, and Bases pages B 8.8-91, 92, and 94*
JFD 2

This LCO includes a requirement for the 120 VAC uninterruptible power distribution subsystems to be OPERABLE in Modes 4 and 5. The Bases discussion includes the 120 VAC uninterruptible power distribution subsystems.

Comment: This is inconsistent with statements in LCO 3.8.7. See Q 3.8.8-09 above.

NMPC Response:

See the NMP2 response to RAI 3.8.8-09.

3.8.9-05 Bases Page B 3.8-94 ITS SR 3.8.9.1
JFD 1, 2

Wording "voltage" is deleted.

Comment: The staff does not agree with changing "voltage" to "power availability". See Q 3.8.8-02 above. Also, the staff does not agree with the last sentence in Insert SR 3.8.9.1; delete the word "Normally.".

Licensee Response:

See the NMP2 responses to RAI 3.8.8-04 and 3.8.8-13.
