Wisconsin Electric
A WISCONSIN ENERGY COMPANY

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NPL 2000-0341

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Document Control Desk
U.S. NUCLEAR REGULATORY COMMISSION
Mail Station P1-137
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Ladies/Gentlemen:

DOCKETS 50-266 AND 50-301
SUPPLEMENT 4 TO APPLICATION FOR AMENDMENT TO
FACILITY OPERATING LICENSE APPENDIX A:
TECHNICAL SPECIFICATIONS IMPROVEMENT PROJECT
RESPONSE TO RAI ON ITS SECTION 3.8
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

On November 15, 1999, Wisconsin Electric Power Company (WE), licensee for the Point Beach Nuclear Plant (PBNP), submitted an application to amend Appendix A, Technical Specifications, for Facility Operating Licenses DPR-24 and DPR-27 for Point Beach Nuclear Power Plant, Units 1 and 2, respectively (reference letter NPL 99-0669). The application proposed to convert the Point Beach Current Technical Specifications (CTS) to the Point Beach Improved Technical Specifications (ITS). That application contained documentation for ITS Chapters 1.0 and 2.0 and Sections 3.0 through 3.9.
Documentation for ITS Chapters 4.0 and 5.0 was enclosed with Supplement 1 to the PBNP ITS submittal dated March 15, 2000 (reference letter NPL 2000-0142).

In a letter dated June 21, 2000, the NRC issued a Request for Additional Information (RAI) to WE on ITS section 3.8.

Attachment 1 of this letter includes our response to the Staff's questions in the above referenced RAI. In some instances, the response includes changes that are required to the original submittal, including changes to the Current Technical Specification (CTS) markups, Descriptions of Change (DOC), NUREG markups, proposed ITS and associated Bases, Justifications for Deviation (JFD), and No Significant Hazard Considerations (NSHC). These changes are discussed in the response to each question and are included in the attachment. Pages containing the changes required to the DOC, JFD, and NSHC are identified by "Rev. B."

A001

The changes required to the CTS, NUREG, and ITS markups are identified as follows (example):

B

RAI 3.6.4-2

The revision bar identifies the section that has been revised; the B in the triangle identifies revision B; and the RAI number identifies which RAI question the revision relates to. The old pages in the original submittal should be replaced with the new pages enclosed with this letter, following the instructions of attachment 2.

Additional changes to the conversion package for the subject ITS Sections have been identified as a result of ITS reviews by WE staff that have occurred after the original ITS submittal. These additional changes have been included (where necessary) in response to each RAI question for completeness. These additional changes include correction of typographical errors, such as spelling, font style, and pagination. These types of typographical corrections appear on the clean copy of the ITS only.

Wisconsin Electric has determined that this supplement does not involve a significant hazards consideration, authorize a significant change in the types or total amounts of effluent release, or result in any significant increase in individual or cumulative occupational radiation exposure. Therefore, Wisconsin Electric concludes that the proposed supplement meets the categorical exclusion requirements of 10 CFR 51.22(c)(9) and that an environmental impact appraisal need not be prepared.

Wisconsin Electric is notifying the State of Wisconsin of this supplement by transmitting a copy of this letter, and its attachments, to the Public Service Commission of Wisconsin.

Other supplements to the PBNP ITS submittal, in response to previous RAIs, are listed for reference:

- Supplement 2 dated June 15, 2000 (ITS section 2.0, 3.1, 3.2, 3.5; reference letter NPL 00-0260).
- Supplement 3 dated June 19, 2000 (ITS section 3.6; reference letter NPL 00-0271).

To the best of my knowledge and belief, the statements contained in this document are true and correct. In some respects, these statements are not based entirely on my personal knowledge, but on information furnished by cognizant Wisconsin Electric employees, contractor employees, and/or consultants. Such information has been reviewed in accordance with company practice, and I believe it to be reliable.

Should you have any questions on this submittal or require additional information, please contact me.

Sincerely,

Mark Reddemann
Site Vice President
Point Beach Nuclear Plant

Subscribed to and sworn before me
on this 31st day of July, 2000

Christine K. Pozorski
Notary Public, State of Wisconsin

My Commission expires on 8-25-2002.

JG/tat

Attachments

Enclosure

cc: NRC Regional Administrator
NRC Resident Inspector
NRC Project Manager
PSCW

DOCKETS 50-266 AND 50-301
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
TECHNICAL SPECIFICATIONS IMPROVEMENT PROJECT SECTION 3.8
POINT BEACH NUCLEAR PLANT UNITS 1 AND 2

The following information is provided in response to the Nuclear Regulatory Commission staff's request for additional information dated June 21, 2000.

Each question is restated on the following pages with Wisconsin Electric's response following.

ITS 3.8.1, AC Sources - Operating

3.8.1-1 CTS 15.3.7.A.1.a, 15.3.7.B.1.a
DOC LA.1

The current Technical Specification (CTS) requires at least two 345 KV transmission lines to be in service, and includes actions to be taken if this requirement is not met. The proposed ITS deletes these CTS requirements using DOC LA.1 as justification. It is the staff's view that DOC LA.1 does not provide an adequate justification for this deletion. Simply stating that these CTS only provide details that are not directly pertinent to the actual requirements is not adequate. The licensee is requested to provide a more detailed discussion on why the CTS requirements and associated actions are not being retained.

WE Response:

DOC LA.01 has been revised to provide a more complete justification for removal of the 345 KV line requirements that are presently contained in the CTS. As discussed in the CTS bases for the actions required for the loss of a 345 KV line, the end state for the action places the operating unit(s) in a condition where continuity of operation will be maintained if the remaining, required 345 KV transmission line is lost. Thus, the transmission line requirements in the CTS are for continuity of reactor operation and are not necessary to ensure the safety of the unit. Therefore, these requirements do not meet the criteria in 10 CFR 50.36 for inclusion in the Technical Specifications.

3.8.1-2 CTS 15.3.7 A.1.b
DOC L.9

The proposed 24-hour Completion Time for verifying the gas turbine is operating or that the opposite unit's x03 transformer is supplying power is a beyond-scope issue which is undergoing a separate review.

WE Response:

Acknowledged. No response is required.

3.8.1-3 CTS 15.3.7.A.1.i
DOC A.6

The CTS requires that the 4160v and the 480v safeguards buses be energized from their normal supply. The proposed ITS, as reflected in Insert 3.8.1-1, only addresses safeguards buses to the 4160v level. What is the justification for deleting the CTS requirement regarding the 480v safeguards buses.

WE Response:

The operability requirements for the 480 V safeguards buses have not been deleted from the Technical Specifications. Rather, the requirements for 480 V safeguards bus operability have been relocated to ITS 3.8.9, Distribution System – Operating."

3.8.1-4 CTS 15.3.7.B.1.a
DOC LA.1

The CTS includes a requirement to decrease reactor power to 50 percent if one 345KV line is lost, and to limit reactor operation to supplying auxiliary load if all 345 KV lines are lost. This CTS requirement is not being retained in the ITS. DOC LA.1 does not provide an adequate justification for deleting this CTS item. The licensee is requested to provide a detailed justification for the deletion, including a discussion of why the requirement is included in CTS and why deletion is acceptable. This may also be a beyond-scope item.

WE Response:

As discussed in response to RAI question 3.8.1-1, LA.01 has been revised to include a more complete justification for removal of the requirements from the CTS related to the 345 KV transmission lines.

3.8.1-5 CTS 15.3.7B.1.c
DOC L.2

This proposed change is a subset of beyond-scope item No. 79.

WE Response:

Acknowledged. No response is required.

3.8.1-6 CTS 15.3.7B.1.c
DOC M.1

DOC M.1 appears to be acceptable as far as it goes. However, it does not appear to be applicable to deleting the CTS requirement to shutdown the reactor associated with an out-of- service 13.8/4.16KV transformer. The licensee should revisit this proposed change and provide the proper justification for the deletion. DOC M.1 is acceptable with respect to adding Insert 3.8.1-3.

WE Response:

DOC M.1 is applicable to the completion times for ITS Condition H which applies when the actions and completion times cannot be met for ITS 3.8.1. This provides the shutdown requirement for an inoperable 13.8/4.16 KV transformer and results in the associated unit being placed in MODE 5. This is more restrictive than the CTS requirement for the inoperable transformer which would only place the associated unit in hot shutdown. Therefore, the shutdown requirement in ITS is more restrictive.

A related change is discussed in DOC L.2 which adds an allowed out of service time for the transformer which is not contained in the CTS.

3.8.1-7 CTS 15.3.7B.1.f
DOC L.4, L.6, and A.11

The proposed ITS includes LCO 3.8.1, Condition C. This condition would allow buses A05 and A06 in the same unit, or buses 1A05 and 2A06 to be without offsite power for 24 hours. Neither of these plant conditions is allowed by the CTS, and represent a less restrictive change. It is the staff's view that the DOCs associated with this change do not provide an adequate justification for the change. The justifications provided paraphrase the NUREG Bases, but fail to address why the change is acceptable from a plant-risk perspective. The licensee is requested to revisit the proposed change with a view towards providing a more adequate justification.

WE Response:

DOC L.06 has been revised to include a more complete discussion of the acceptability of the proposed ITS Condition C allowed outage time from a risk perspective. The time proposed for restoration of the offsite source of power is sufficient to restore offsite power in most cases while short enough to account for the importance of the offsite, preferred power source. During this condition, onsite sources of power are not affected such that the safety function of all required equipment will continue to be performed. The allowed outage time recognizes the most likely causes for the inoperability of offsite power are related to problems with the offsite power grid. In these cases, removing a unit's generation from the grid may further exacerbate the condition, making it more difficult, and take a longer time, to restore offsite power thus further impacting the operability of required onsite systems. Thus, 24 hours is a reasonable time to correct the condition.

3.8.1-8 Proposed ITS 3.8.1, Condition D
Insert 3.8.1-5

The Note included in proposed Condition D regarding separate condition entry for each inoperable offsite power source is not acceptable.

WE Response:

The Note allowing separate condition entry for each inoperable offsite source in proposed ITS Condition D has been eliminated and related changes have been incorporated into the proposed Specifications.

3.8.1-9 Proposed ITS Condition C, D, E, and F
Insert 3.8.1-4 and Insert 3.8.1-5, Bases Table 3.8.1-1

The proposed Conditions, to a large extent, reflect the CTS. Proposed Bases Table 3.8.1-1 addresses allowable offsite and onsite power inoperabilities. However, as stated, the proposed ITS would allow combinations of offsite and onsite power inoperabilities that are not allowed by the CTS. The DOCs associated with these proposed changes do not adequately address why the changes are acceptable. The licensee is requested to provide a justification for these combinations of inoperabilities, or revise the ITS to preclude them. Some of the identified combinations are as follows:

- inoperable offsite to 1A05 and 2A05, with inoperable DGs G03 and G04
- inoperable offsite to 1A06 and 2A06, with inoperable DGs G01 and G02
- inoperable offsite to 1A05 and inoperable DGs G02 and G03
- inoperable offsite to 2A06 and inoperable DGs G02 and G03

All of the above combinations would be allowed to exist for 7 days. These are combinations the staff has identified to date. There may be others.

WE Response:

Changes have been made to prohibit the concurrent inoperability of offsite and standby emergency power to redundant equipment. This is included as proposed ITS Condition F. Related changes to the conversion package have been made.

3.8.1-10 CTS Bases Page 15.3.7-8
DOC A.5

The CTS Bases discussion regarding having only one 345KV transmission line appears to have been deleted from the ITS Bases. DOC A.5 does not provide an adequate justification for this change. This is a subset of RAI 3.8.1-1.

WE Response:

As discussed in response to RAI question 3.8.1-1 and 3.8.1-4, the transmission line requirements in the CTS were removed in the proposed ITS as they were only provided for continuity of unit operation and were not related to any safety requirement. Thus, with the removal of the line requirements as justified in DOC LA.01, DOC A.05 is adequate for the replacement of the bases with appropriate bases applicable to the ITS requirement.

3.8.1-11 CTS Bases Pages 15.3.7-9, CTS 15.3.7.B.1.b
DOC A.5, M.8

In the event of a loss of both 345/13.8KV transformers, the CTS requires one unit to shut down and the second unit to reduce power to no more than 50 percent. Since the CTS does not specify a time, it is assumed the actions are required immediately. In the proposed ITS, this requirement is deleted. The ITS will allow operation of both units at 100-percent power for up to 24 hours. It is the staff's view that DOCs A.5 and M.8 do not provide an adequate justification for this change. The purpose of this comment is to advise that this change will be reviewed as part of the overall change covered by beyond-scope Item No. 79.

WE Response:

We acknowledge the comment that this item is being addressed with Beyond Scope Issue No. 79.

3.8.1-12 CTS 15.4.6A.2
DOC L.7

The licensee is requested to provide a discussion on how a "simulated" interruption of offsite power is accomplished such that the emergency bus sees zero voltage and load shedding initiated.

WE Response:

The surveillance defined by CTS 15.4.6.A.2 is presently performed by interrupting power to the safeguards bus(es) causing an actual loss of power to the bus. A simulated loss of power signal could be accomplished by depressing the test push button on the undervoltage relays as necessary to make-up the required undervoltage actuation logic. Testing in this manner would also result in deenergizing the bus(es).

3.8.1-13 CTS 15.4.6A.2
DOC M.6

The CTS requires conducting this surveillance "during reactor shutdown." This requirement is not reflected in ITS SR 3.8.1.5, and DOC M.8 does not provide a justification for the deletion. The licensee is requested to provide a justification, or retain the requirement in the ITS.

WE Response:

SR 3.8.1.5 had been modified to retain the stipulation in the NUREG SR Note that this surveillance not be performed in MODES 1, 2, 3 or 4. JFD 29 is also being modified accordingly. With the inclusion of this SR Note, ITS SR 3.8.1.5 more accurately reflects the CTS requirement.

3.8.1-14 CTS 15.4.6A.3
DOC LA.3

It is the staff's view that DOC LA.3 does not provide an adequate justification for deletion of this CTS surveillance. Would it not be better to state that this surveillance requirement (SR) will be performed automatically every 18 months as a function of the AC loss of offsite power test? When AC power is interrupted, DC power is the only power source available until the diesel generators (DGs) start and load. During this period, the DC emergency lights should come on, and this function can be observed.

WE Response:

DOC LA.03 has been revised to more completely reflect the reasons for removing this requirement from the Technical Specifications. The DC lights are not necessary to ensure that the function of the required safety-related safeguards equipment is accomplished. Therefore, relocation and performance of this requirement in accordance with licensee controlled documents will not affect the safety related functions of required equipment. This requirement will be relocated to the Technical Requirements Manual (TRM).

3.8.1-15 CTS 15.6.4A.4
DOC LA.4

The licensee has proposed to remove the CTS requirement to inspect the DG from the ITS. Per DOC LA.4, this requirement would be retained in procedures. The staff does not consider this to be acceptable. In past conversions, this inspection requirement has been relocated to the Final Safety Analysis Report, Technical Requirements Manual, or other document which is controlled under 10 CFR 50.59. The licensee is requested to revise the submittal to reflect relocation of this CTS requirement as discussed herein.

WE Response:

The requirement for diesel generator inspections will be relocated to the TRM. DOC LA.04 has been revised accordingly.

3.8.1-16 Bases Insert B3.8.1-2

The LCO description provided in the above insert does not agree with the actual LCO. The LCO addresses using the opposite unit's X03 transformer and the gas turbine. The Bases do not

include a discussion of this. This is an inconsistency that must be resolved. The inconsistency includes the discussion of both the associated unit and the opposite unit offsite power.

WE Response:

The insert and proposed ITS bases have been revised to include the allowed configuration of the opposite unit's X03 and gas turbine G05 for satisfying the LCO.

3.8.1-17 ITS LCO 3.8.1, Condition A

Required Actions A.1 and A.2 address the opposite unit's X03 transformer and the gas turbine, respectively. This appears to be redundant to the LCO, since the plant condition addressed in Actions A.1 and A.2 is specifically allowed by the LCO. This is potentially confusing. Consideration should be given to revising the LCO to be consistent with the Bases discussion as the normal power alignment, and the allowed alternate alignment addressed in Required Actions A.1 and A.2.

WE Response:

LCO 3.8.1 prescribes the requirements for G05 and X03 transformers for unit operation. Deviation from these requirements, absent a condition and required action for such departure would result in a condition prohibited by Technical Specification and immediate entry in ITS 3.0.3. Thus, Condition A and Required Action A.1 and A.2 are necessary to allow restoration of the LCO.

3.8.1-18 ITS LCO 3.8.1, Conditions B and C

The staff does not see any significant difference between Condition B and the first part of Condition C. If the X04 transformer is inoperable, the A05 and A06 buses will be without offsite power. Therefore, these Conditions could be combined into one. The Bases discussion for Condition B would cover this combined Condition. Inoperable offsite sources to 1A05 and 2A06 is a different situation than no offsite to A05 and A06 of the same unit, and required a different Bases discussion. The Bases discussion for Required Action C.1 could cover this. The licensee is requested to consider the staff's comments.

WE Response:

It is appropriate to maintain the separate conditions for the associated unit X04 inoperability and inoperability of offsite power to specific A05 and A06 busses. Inoperability of power to the A05 and A06 busses in the same unit will result, in part, in the inoperability of multiple trains of safeguards equipment and loss of safety function. Likewise, simultaneous inoperability of 1A05 and 2A06 will result in a loss of safety function of the Service Water system. Therefore, these conditions are similar and can be handled by the same ITS condition.

3.8.1-19 ITS LCO 3.8.1 Bases
Insert B3.8.1-4

The Note regarding separate condition entry for offsite circuits is not acceptable.

WE Response:

The Note has been deleted. Appropriate changes have been made to the submittal.

3.8.1-20 Bases Markup Page B3.8.1-6

In the third paragraph, there is wording regarding redundant features "associated with the other train." For Point Beach, this appears to be incorrect. Considering the plant design, this wording should be changed to reflect the plant design.

WE Response:

The inclusion of "associated with the other train" in the Bases was an oversight considering plant design; in particular the service water system. This wording has been eliminated and appropriate revisions to the submittal have been made.

3.8.1-21 Bases Markup Page B3.8.1-9

Paragraph b. at the top of the page addresses "A required feature on the other train." At Point Beach, the redundant required features could be on any of the other trains in both units. The Bases discussion should be revised to reflect this. Also, in one place on this page, the term "standby emergency power source" is proposed to be inserted. In this case, the term should be plural (i.e., "sources").

WE Response:

Appropriate changes have been made to the submittal to reflect the PBNP design. "A required feature in the other train." is being changed to "A required redundant feature."

ITS 3.8.2, AC Sources - Shutdown

3.8.2-1 CTS Markup
Insert 3.8.2-1

CTS does not have a specific shutdown TS. Therefore, if a system/component is required to be OPERABLE in Modes 5 and 6, by the CTS definition of OPERABILITY, its associated offsite and onsite power sources must also be OPERABLE. If more than one train of system/components are required to be OPERABLE, then multiple trains of offsite and onsite power must also be OPERABLE. The proposed ITS only requires one offsite and one onsite power source, regardless of the number of systems/components required to be OPERABLE. The ITS appears to be less restrictive than the CTS, and this change has not been adequately justified.

WE Response:

The CTS do not contain operability requirements for offsite power or standby emergency power when in cold or refueling shutdown. When operating at power, the required action for such inoperabilities is to place the affected unit in cold shutdown which places the plant in a mode where the operability requirements do not apply. Therefore, in CTS OPERABILITY of systems/components required in cold shutdown and below does not require OPERABILITY of the normal and standby emergency power supplies. DOC M.01 has been modified accordingly.

3.8.2-2 CTS Markup
Insert 3.8.2-1

The requirements for offsite power in this LCO are expressed in terms of the 480V safeguards buses B03 and B04. In LCO 3.8.1, the offsite power requirements are expressed in terms of the 4.16KV buses. Why is there a difference? In the staff's view, the requirements should be the same. The licensee is requested to provide a discussion on why the difference is considered appropriate, or modify the submittal so LCO 3.8.1 and LCO 3.8.2 have similar requirements. The staff is particularly interested in why the 480V safeguards buses are not addressed in LCO 3.8.1.

WE Response:

LCO 3.8.2 applies in Modes 5 and 6. Requirements for bus operability are governed by the need to supply power to supported equipment necessary in Modes 5 and 6. Other than serving as a source of power to the 480 V buses, the 4160 V buses do not directly support any other systems/components required to be operable in Modes 5 and 6. Thus it is appropriate in LCO 3.8.2 to define OPERABILITY in relation to the 480 V buses. Thus, the affects of the operability are appropriately handled by the interface between LCO 3.8.2 and 3.8.10.

LCO 3.8.1 does not directly address 480 V buses as this requirement is handled through the interface of LCO 3.8.1 and LCO 3.8.9.

3.8.2-3 Bases Markup
Insert 3.8.2-2

The proposed Bases discussion of the offsite circuits includes a reference to utilizing either unit's 4.16KV safeguards buses A05 and A06. The staff is aware that the standby emergency power sources can be connected to more than one A05 or A06 bus, but is not aware of cross connecting offsite power sources at this level. The licensee is requested to explain if, and how, the A05 and A06 buses can be cross-tied for the purpose of providing offsite power, and what restrictions are applicable to such cross-tying.

WE Response:

The submittal has been revised as appropriate to more accurately reflect the PBNP design; and, the specific wording that could imply cross-connection of offsite power sources at the 4160V level has been deleted as this capability is not provided for in the Point Beach design.

3.8.2-4 Bases Markup
Insert 3.8.2-5

There seems to be something missing in the third paragraph of the Bases discussion for SR 3.8.2.2. The discussion skips from stating that the standby emergency power source must be capable of starting and accepting loads to a discussion of limited AC sources available. Something is missing between these two parts of the Bases. The licensee is requested to revise the Bases to provide the missing material.

WE Response:

Bases insert 3.8.2-5 has been reviewed, and the discussion revised to eliminate potential confusion by eliminating that portion of the discussion that could imply that information is missing.

3.8.2-5 Bases Markup
Insert 3.8.2-5

Consideration should be given to revising this SR and associated Bases. The proposed ITS do not include any requirement to load the standby emergency power sources. Consequently, it is doubtful that enough fuel would be consumed during the test to cause the fuel oil transfer system to automatically start and replenish the day tanks. As written, it may be difficult to comply with this ITS requirement in Modes 5 and 6.

WE Response:

Comment has been considered and the SR maintained as proposed. This SR and the required conditions are essentially the same as the CTS.

ITS 3.8.3, Diesel Fuel Oil, Lube Oil, and Starting Air

3.8.3-1 NUREG Markup
Insert 3.8.3-1

LCO 3.8.3 is proposed to be changed for the ITS. The staff does not understand the rationale for the change. ITS SR 3.8.3.3 requires verifying the air start bottle bank pressure is greater than 165 psi. If the pressure is not at or above this limit, the system and associated diesel are inoperable. Given that a pressure limit is involved, why not use the NUREG format and state the LCO and applicable Condition in terms of this limit instead of the proposed "inoperable starting air system."

WE Response:

NUREG LCO 3.8.3 provides for action based on two pressure levels. The first, higher pressure, is that limit, which if not met, the starting air system cannot meet its design basis for the number of diesel starts. The lower limit, is that level at which the air start system is still capable of one start attempt. The NUREG recommends a 48 hour allowed time between these two levels prior to declaring the diesel generator inoperable. In accordance with NUREG LCO 3.8.1, an EDG may be inoperable for up to 72 hours prior to taking action to shutdown the associated reactor. This results in a five days total that the air start system is not able to perform the required number of start attempts

The CTS allows standby emergency power to a train to be inoperable for up to 7 days. This allowed outage time is being retained in the ITS. Therefore, ITS 3.8.3 as proposed will allow up to 7 days in which the air start system is not capable of performing the design number of start attempts prior to taking action to shutdown the affected unit. The proposed ITS and NUREG recommendations therefore, result in essentially the same impact on operation.

3.8.3-2 Bases Markup Page B3.8.3-6, B3.8.3-7

Section 5 of the NUREG and the ITS does not have a Bases. That is why the details of the Fuel Oil Test program are included in the 3.8.3 Bases. The submittal should be revised to retain a discussion of the program in the 3.8.3 Bases.

WE Response:

The NUREG Bases for Section 3.8.3 have been reviewed. Applicable portions are being retained in the PBNP submittal, modified as necessary, to reflect PBNP fuel oil testing. Appropriate changes to the submittal have been made.

ITS 3.8.4, DC Sources - Operating

3.8.4-1 CTS Markup
Insert 3.8.4-1 Actions Note

It is the staff's position that placement of the Note regarding entry into LCO 3.8.4 in the proposed location is not acceptable. The Note, when applicable, should be placed in the Required Actions column of the appropriate Condition.

WE Response:

The Note to enter the applicable conditions of ITS LCO 3.8.4 has been relocated to the Required Actions column of Condition A.

3.8.4-3 NUREG Markup SR 3.8.4.1
JFD 03

This JFD states that the batteries at Point Beach have different voltages (i.e., 128V and 130.2V). However, there is only one swing battery. What is the voltage of the swing battery? If is 130.2V, explain how this is acceptable as a substitute for a 128V battery. If it is 128V, explain how this is acceptable as a substitute for a 130.2V battery.

WE Response:

The rated voltage of swing battery D305 is 130.2V. This voltage is within all system requirements and can be used in lieu of any of the four batteries normally aligned including the 128V batteries D05 and D06.

3.8.4-4 NUREG Bases Markup
Insert B3.8.4-2

In this Bases discussion, it is stated that: (1) swing charger D09 is connected to Bus D301 and can provide power to buses D01 and D02, (2) swing charger D109 is connected to bus D302 and can provide power to buses D03 or D04, and (3) swing battery D305 can be aligned to any of the four DC buses. Given the above, what battery charger is used to maintain swing battery D305 in a fully charged state when the battery is aligned to bus D03 or D04?

WE Response:

Battery charger D109 is used when the swing battery D305 is aligned to buses D03 or D04.

ITS 3.8.5, DC Sources - Shutdown

3.8.5-1 Insert 3.8.5-1

The staff is somewhat confused regarding how LCO 3.8.5 is intended to function. It is the staff's understanding that the DC electrical power subsystems at Point Beach are shared between the two units, and that all four subsystems are required to be OPERABLE when either unit is at power. Given this, when one unit is in shutdown, what LCO is applicable to the DC subsystems? Is it LCO 3.84, or LCO 3.85? LCO 3.8.4 has one set of requirements for an inoperable DC subsystem, while LCO 3.8.5 has another set of requirements. The licensee is requested to provide a discussion regarding how LCO 3.8.5 is intended to work in light of the fact that the DC subsystems are shared.

WE Response:

The ITS are applied on a per unit basis. That is, the Specification that applies is dependent on the operating mode of a given unit. In this particular instance, for the unit that is shutdown in Modes 5 or 6, LCO 3.8.5 would apply and govern the action taken on the shutdown unit for inoperabilities in the DC system. LCO 3.8.4 would apply and govern the action taken for the unit

in MODE 4 or higher. In those instances where LCO 3.8.4 invokes more restrictive allowed outage time or action times for returning a DC electrical subsystem to OPERABLE status, the more restrictive time governs the action to be taken.

3.8.5-2 NUREG Bases Markup

The proposed ITS Bases are identical to the NUREG Bases with some minor exceptions. The proposed Bases do not appear to reflect the Point Beach design which includes shared DC Subsystems. It appears that the Bases will require some additional work.

WE Response:

The Bases have been reviewed and are believed to be acceptable for the PBNP design and configuration. Our re-evaluation concluded that the degree to which systems are shared is appropriately reflected in the Bases. Additionally, Point Beach specific design information on shared DC subsystems is contained in the Bases for ITS 3.8.4 (as noted in the Background section of the Bases for ITS 3.8.5).

ITS 3.8.7, Inverters - Operating

3.8.7-2 Clarification

The licensee is requested to expand on the discussion of AC vital buses contained in the Bases for LCO 3.8.7. Specifically, the staff would like to know how the buses are arranged and how they are powered from the inverters. Of the 16 buses, are there 4 red, 4 yellow, etc.? Are there 4 buses per channel, one each of red, yellow, white, and blue? Or are the buses in a channel all the same color? Within the groups on each channel, it is indicated that one group serves Unit 1 and the other group serves Unit 2. Are the inverters arranged such that the failure of the inverter serving a Unit 1 group would not impact on the Unit 2 group? A detailed drawing would be helpful.

WE Response:

The Bases for LCO 3.8.7 has been reviewed and it accurately describes the vital AC arrangement at PBNP. The vital AC system consists of four channels (red, blue, white and yellow). Each channel is comprised of four buses (for a total of 16). Two buses from each channel are dedicated to each unit. Each channel is supplied by three inverters. One inverter supplies the Unit 1 buses; one inverter supplies the Unit 2 buses; and, one inverter is a swing that can be use in replacement of either of the channel's Unit 1 or Unit 2 inverter. This inverter arrangement is designed such that the failure of the inverter in the channel supplying the Unit 1 vital AC buses will not affect the Unit 2 vital AC buses and vice versa. This configuration is reflected in updated FSAR figure 8-14.

3.8.7-3 CTS 15.3.7A.1.h

The CTS requires eight AC vital buses to be OPERABLE. The proposed Bases discussion identifies 16 AC vital buses and 8 inverters. Proposed ITS LCO 3.8.7 requires four inverters to be OPERABLE. The licensee is requested to explain the interrelationship of these different requirements and discussions. This is a subset of RAI 3.8.7-2, above.

WE Response:

The CTS requires the eight vital AC buses for the unit to be taken critical to be operable. These buses are arranged two per channel (two each of red, blue, white, yellow channels). As discussed in response to RAI question 3.8.7-1 and in the Background section in the LCO 3.8.7 Basis, a separate inverter supplies each channel in each unit. Therefore, four inverters (one each for the red, blue, white, and yellow channels) are required to be operable for each unit when LCO 3.8.7 applies. The LCO requirement correctly reflects the PBNP design.

ITS 3.8.8, Inverters - Shutdown

3.8.8-1 Insert 3.8.8-1

Proposed LCO 3.8.8 requires AC vital buses to be OPERABLE as required by LCO 3.8.10. However, LCO 3.8.7 requires four AC vital buses to be OPERABLE. In the event that one is unit shut down and one unit is at power, which one of these two LCOs takes precedence? This is the same problem that exists with LCO 3.8.2 and LCO 3.8.5.

WE Response:

LCO 3.8.8 requires the inverters necessary to supply the Vital AC Bus(es) required to be OPERABLE by LCO 3.8.10, to be OPERABLE. LCO 3.8.7 requires four inverters to be OPERABLE for a Unit operating in Mode 4 and above. (One inverter supplying the required buses of red, blue, yellow and white channels) LCO 3.8.8 applies for a Unit operating in Modes 5 and 6. As discussed in response to RAI question 3.8.7-1, failures in inverters supplying one unit's buses will not affect the inverters supplying the other unit's vital AC buses; thus, each LCO applies independently depending on the associated reactor's mode of operation.

ITS 3.8.9, Distribution Systems - Operating

3.8.9-1 Insert 3.8.9-2

In the proposed ITS LCO 3.8.9, Condition A, the Required Action is to declare the affected equipment inoperable. In the staff's view, this is redundant. If the power to any system/component is removed, it is obvious that the system/component is inoperable. Therefore, it seems that having a distribution section in the Point Beach ITS is unnecessary. As discussed in other RAIs, a distribution section may well cause confusion and conflict. In light of this, the staff suggests that the distribution section be deleted from the Point Beach ITS. The staff recognizes that the licensee is attempting to follow NUREG-1431. However, it should be noted that the

Required Actions and associated Completion Times in NUREG-1431 LCO 3.8.9 are more restrictive than would be the Required Action and Completion Times associated with the systems/components made inoperable by the de-energized electrical bus. Without these more restrictive requirements, there would be no need for LCO 3.8.9. Since the proposed ITS LCO 3.8.9 does not impose any more restrictive requirements, it can be deleted.

WE Response:

ITS LCO 3.8.9, Condition A and required action is essentially the same as CTS requirement 15.3.7.B.1.k and is necessary to more completely reflect the CTS in the ITS.

LCO 3.8.9 works in conjunction with ITS LCO 3.8.1 and is needed to ensure that the required 4160 V and 480 V bus pairs are operable as required by CTS 15.3.7.A.1.i. LCO 3.8.9 also retains the CTS requirements for extended use of the safeguards bus tie-breakers under specified controlled, conditions.

In addition, we do not believe that ITS LCO 3.8.9 introduces any confusion as it is necessary to meet all LCOs that apply and take the required actions. Limiting actions may be prescribed by the conditions of other Specifications. ITS LCO 3.8.9 does not supercede such action.

Additional Corrections Required to ITS Section 3.8:

Additional corrections to the conversion package for ITS Section 3.8 have been identified as a result of ITS reviews by plant staff.

ITS Bases Insert B3.8.9-5 provides additional discussion related to ITS SR 3.8.9.1 for verification of correct breaker alignment. CTS requires the tie-breaker between the 480V safeguards buses B03 and B04 to be open with control power removed unless in cold shutdown or below. As originally proposed, the ITS bases discussion did not specifically state control power is to be removed and has been updated to specifically state that control power is removed.

NUREG LCO Section 3.8.6 (ITS 3.8.6), DOC LA.01 justified relocating certain requirements in CTS 15.4.6.B.2 and CTS 15.4.6.B.3 to the Technical Requirement Manual (TRM). The specific requirements relate to the measurement and recording of amount of water added to each battery cell, which cells are monitored for temperature, and required recording of data. These details are not necessary to define the required Surveillances in the ITS and are therefore, being deleted from the Specifications. DOC LA.01 is deleted and new DOC L.01 is provided as justification. A NSHC is also provided.

NUREG Section 3.8.3 DOC M.02 which describes the addition of ITS SR 3.8.3.3 and ITS SR 3.8.3.4 was inadvertently omitted in our submittal. DOC M.02 is provided for this change.

ITS Bases Insert 3.8.3-3 includes a discussion on the starting air systems for each standby emergency power source (Emergency Diesel Generator). The starting air systems for the Train A and Train B standby emergency power sources are configured differently. The bases discussion has been revised to eliminate details that could be misinterpreted to imply that the systems are the

same. The revised bases describing the starting air system more closely reflects the NUREG 3.8.3 Bases.

CTS Page 15.4.6-1 has been amended since the original submittal. CTS mark-ups contained in NUREG Sections 3.8.1, 3.8.4 and 3.8.6 have been updated with the correct page.

NUREG Section 3.8.1 DOC LA.02 was reviewed and it was determined that the requirements described in the LA.02 for relocation could be removed from the requirement with no impact on safety. DOC LA.02 was revised and renumbered as less restrictive L.11. The appropriate changes have been made to the CTS markup, and a NSHC has been provided.

ATTACHMENT 2
DISCARD AND INSERTION INSTRUCTIONS

VOLUME 9	
SECTION 3.8.1	
DISCARD	**INSERT**
DOC pages 1 through 22 of 22	DOC pages 1 through 22 of 22
CTS markup pages 3, 4, 10, 14, and 19 through 21 of 23	CTS markup pages 3, 4, 10, 14, and 19 through 21 of 23
JFD pages 1 through 21 of 21	JFD pages 1 through 20 of 20
ISTS markup pages 3.8-1, 3.8-4, and 3.8-15	ISTS markup pages 3.8-1, 3.8-4, and 3.8-15
ISTS markup inserts pages 2 and 3	ISTS markup inserts pages 2 and 3
ISTS Bases markup pages B3.8.1-5 and 6	ISTS Bases markup pages B3.8.1-5 and 6
ISTS Bases markup page B3.8.1-9	ISTS Bases markup page B3.8.1-9
ISTS Bases markup pages B3.8.1-13 and 14	ISTS Bases markup pages B3.8.1-13 and 14
ISTS Bases markup pages B3.8.1-31	ISTS Bases markup pages B3.8.1-31
ISTS Bases markup inserts pages 5, 6, 9 through 13	ISTS Bases markup inserts pages 5, 6, 9 through 13
NSHC pages 1through 13 of 13	NSHC pages 1 through 14 of 14
ITS pages 3.8.1-2, 3.8.1-4, and 3.8.1-6	ITS pages 3.8.1-2, 3.8.1-4, and 3.8.1-6
ITS Bases pages B3.8.1-1 through B3.8.1-24	ITS Bases pages B3.8.1-1 through B3.8.1-22
SECTION 3.8.2	
DISCARD	**INSERT**
DOC page 1 of 1	DOC page 1 of 1
ISTS Bases markup pages B3.8.2-5 and 6	ISTS Bases markup page B3.8.2-5 and 6
ISTS Bases markup insert page 1	ISTS Bases markup insert page 1
ISTS Bases markup insert page 3	ISTS Bases markup insert page 3
ITS Bases pages B3.8.2-1 through 3.8.2-8	ITS Bases pages B3.8.2-1 through B3.8.2-7

ATTACHMENT 2
DISCARD AND INSERTION INSTRUCTIONS

SECTION 3.8.3	
DISCARD	**INSERT**
DOC pages 1 through 3 of 3	DOC pages 1 through 4 of 4
JFD pages 2 of 3 and 3 of 3	JFD pages 2 of 3 and 3 of 3
ISTS Bases markup pages B3.8.3-6 and 7	ISTS Bases markup pages B3.8.3-6 and 7
ISTS Bases markup pages B3.8.3-9	ISTS Bases markup pages B3.8.3-9
ISTS Bases markup insert page 1	ISTS Bases markup insert page 1
ITS Bases pages B3.8.3-1 through B3.8.3-6	ITS Bases pages B3.8.3-1 through B3.8.3-7
SECTION 3.8.4	
DISCARD	**INSERT**
DOC pages 3 of 8 and 4 of 8	DOC pages 3 of 8 and 4 of 8
CTS markup page 7 of 13	CTS markup page 7 of 13
CTS markup page 11 of 13	CTS markup page 11 of 13
JFD pages 1 of 5 and 2 of 5	JFD pages 1 of 5 and 2 of 5
ISTS markup page 3.8-24	ISTS markup page 3.8-24
ITS page 3.8.4-1	ITS page 3.8.4-1
SECTION 3.8.6	
DISCARD	**INSERT**
DOC page 2 of 5	DOC page 2 of 5
CTS markup page 2 of 10	CTS markup page 2 of 10
NSHC page 2 of 3	NSHC page 2 of 3
SECTION 3.8.9	
DISCARD	**INSERT**
ISTS Bases markup insert page 6	ISTS Bases markup insert page 6
ITS Bases pages B3.8.9-1 through B3.8.9-9	ITS Bases pages B3.8.9-1 through B3.8.9-8

ENCLOSURE

Description of Changes - NUREG-1431 Section 3.08.01

21-Jul-00

DOC Number	DOC Text
A.01 Rev. A	In the conversion of Point Beach current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted which do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the Standard Technical Specifications, Westinghouse Plants, NUREG-1431, Revision 1 (i.e., Improved Standard Technical Specifications (ISTS)).

CTS:	ITS:
15.03.0.D	LCO 3.08.01
15.03.07	LCO 3.08.01
15.04.06	LCO 3.08.01
15.04.06.A.02	SR 3.08.01.05
15.04.06.A.05	SR 3.08.01.04

A.02 Rev. A	The CTS provides an introductory statement (Applicability) which simply states which systems/components are addressed within a given section. This same information, while worded differently, is contained within the title of each ITS LCO. Accordingly, this change is a change in format with no change in technical requirement.

CTS:	ITS:
15.03.07 APPL	LCO 3.08.01
15.04.06 APPL	LCO 3.08.01

A.03 Rev. A	The CTS provides an introductory statement (Objective) at the beginning of this Section of the Technical Specifications which provide a brief summary of the purpose for this Section. This information is contained in the Bases Section of the ITS. This information does not establish any regulatory requirements for the systems and components addressed within this Section. Accordingly, deletion of this information does not alter any requirement set forth in the Technical Specifications. This change is administrative and consistent with the format and presentation for the ITS as provided in NUREG 1431.

CTS:	ITS:
15.03.07 OBJ	B 3.08.01
15.04.06 OBJ	B 3.08.01

A.04 Rev. A	The CTS states that during power operation the requirements of Specification 15.3.7.A.1 (AC Power Sources for single and two unit operation) may be modified to allow specified components to be inoperable for a limited period of time before requiring a unit shutdown. This Specification merely establishes the structure for the remedial actions in the CTS. The ITS contains specific usage rules for consistent application of the Conditions and Required Actions associated with varying system inoperabilities consistent with the format and presentation of NUREG 1431. Accordingly, deletion of a specific Specification directing usage of Actions is unnecessary, as it duplicates the ITS usage rules. This change is administrative.

CTS:	ITS:
15.03.07.B.01	N/A

Description of Changes - NUREG-1431 Section 3.08.01

21-Jul-00

DOC Number	DOC Text
A.05 Rev. A	The Bases of the current Technical Specifications for this section have been completely replaced by revised Bases that reflect the format and applicable content of PBNP ITS, consistent with the Standard Technical Specifications for Westinghouse Plants, NUREG-1431. The revised Bases are as shown in the PBNP ITS Bases.

CTS:	ITS:
BASES	B 3.08.01

DOC Number	DOC Text
A.06 Rev. A	CTS 15.3.7.A.1.b and c require the associated unit's 345/13.8 kV and 13.8/4.16 kV transformers to be in service, with 4.16 kV buses A03 and A04 energized from their normal power sources (the associated unit's 13.8/4.16 kV transformer), for the reactor to be made critical. In lieu of the associated unit's 345/13.8 kV transformer, unit operation utilizing the opposite units 345/13.8 kV transformer in service is acceptable, provided the 13.8 kV gas turbine generator is operating. In addition, CTS 15.3.7.A.1.i requires 4.16 kV safeguards buses A05 and A06 to be energized from their normal power supply (4.16 kV buses A03 and A04), and capable of being powered from an operable emergency power supply (emergency diesel generator). Proposed ITS LCO 3.8.1.a requires an offsite circuit between the offsite power distribution network, utilizing the associated unit's 345/13.8kV and 13.8/4.16 kV transformers to be operable. This requirement is equivalent to the CTS requirement to maintain these transformers in service (CTS 15.3.7.A.1.b) and supplying normal power to the associated unit's buses A03/A04 and A05/A06 (CTS 15.3.7.A.1.c and 15.3.7.A.1.i). Proposed ITS LCO 3.8.1.b requires an offsite circuit between the offsite power distribution network, and the opposite unit's 4.16 kV safeguards buses (A05 and A06) to be operable. This requirement is equivalent to CTS requirement 15.3.7.A.1.i for these buses. CTS 15.3.7.A.1.i requires the associated units 4.16 kV safeguards buses (e.g. buses 1A05 and 1A06) and the opposite unit's 4.16 kV safeguards buses (e.g. 2A05 and 2A06) to be energized from their normal power supplies. The normal power supplies for these buses are 4.16 kV buses 1A03/1A04 and 2A03/2A04 respectively. As previously addressed, the associated units buses A03 and A04 must be powered from the respective units 13.8/4.16 kV transformer (ITS 3.8.1.a), however normal power (offsite power) to the opposite unit's A03 and A04 buses is not prescriptively established, thereby allowing it's offsite source to be established by the licensee. Under normal circumstances, the offsite power supply to the opposite units A03 and A04 buses would be the 13.8/4.16 kv bus associated with the opposite unit; however, acceptable alternate sources include back feed through the opposite unit's 19.0/4.16 kV auxiliary transformer, or the associated unit's A03 and A04 buses. As such, simply requiring a circuit between the offsite transmission network and the opposite unit's buses A05 and A06 (ITS 3.8.1.b) is equivalent to CTS 15.3.7.A.1.c, and 15.3.7.A.1.i. Proposed ITS 3.8.1.c, requires a standby emergency power source for each 4.16 kV safeguards bus (1A05, 1A06, 2A05, and 2A06). The Point Beach standby emergency power supply design consists of four diesel generators. One diesel generator is normally aligned to each 4.16 kV safeguard bus (1A05, 1A06, 2A05, and 2A06); however, only one diesel generator is required per train (buses 1A05/2A05 and 1A06/2A06) based on shared alignment capabilities. Diesel generator shared alignment capability between units has been previously reviewed and approved in an NRC Safety Evaluation Report, A.G Hansen, to R.E. Link, dated October 24, 1994. This Safety Evaluation found a total of two diesel generators (one per safeguards train) to be acceptable for single or two unit operation. Each diesel generator has the capability to automatically start and supply the AC power requirements of one complete set of engineered safety features in one unit while providing sufficient power to allow the second unit to be placed into a safe shutdown condition. ITS Condition A and its associated Required Actions have been proposed to address the inoperability of the associated 345/13.8 kV transformer or the condition of the gas turbine not in

DOC Number	DOC Text
	operation when utilizing the opposite unit's 345/13.8 kV transformer. If the associated unit's 345/13.8 kV transformer is inoperable (not in service), Required Action A.1 requires verification that offsite power is supplying the associated unit's 4.16 kV safeguards buses from the opposite unit's X03 transformer, and Required Action A.2 requires that the gas turbine generator be placed in operation.

CTS:	ITS:
15.03.07.A.01.b	LCO 3.08.01 A LCO 3.08.01 COND A
15.03.07.A.01.c	LCO 3.08.01 A
15.03.07.A.01.l	LCO 3.08.01 A LCO 3.08.01 B LCO 3.08.01 C

A.07
Rev. B

CTS 15.3.7.B.1.k requires the applicable LCO Actions to be entered for equipment supported by any de-energized safeguards bus.

Based on the incorporation of proposed ITS LCO 3.0.6, and moving the requirement to maintain the safeguards buses energized to ITS LCO 3.8.9, it is necessary to retain a Condition and Required Action in LCO 3.8.1 addressing the combination of inoperabilities necessary to have a de-energized bus which will require entry into the applicable Conditions and Required Actions of proposed ITS LCO 3.8.9. Requiring entry into the applicable Conditions and required Actions of LCO 3.8.9, establishes the requirement to enter the Actions associated with inoperable supported equipment. This is accomplished by the addition of a Note to the Required Actions of Condition F that directs entry into the applicable Conditions and Required Actions of LCO 3.8.9 when normal and standby emergency power is inoperable to any Class 1E 4.16kV bus.

CTS:	ITS:
15.03.07.B.01.k	LCO 3.08.01 COND F RA F.1 NOTE

DOC Number	DOC Text
A.08 Rev. A	CTS 15.4.6.A.1 requires each required diesel generator to be started and loaded for a specified period of time on a monthly frequency. This requirement has been retained as proposed SR 3.8.1.2 and SR 3.8.1.3 which are required to be performed once per 31 days. Proposed SR 3.8.1.2, verifies that the required diesel generators start and achieve rated speed and voltage, while synchronization and operation of the diesel is addressed by SR 3.8.1.3. Dividing the CTS surveillance into two separate requirements has been done for consistency with the format and presentation of NUREG 1431.

CTS:	ITS:
15.04.06.A.01	SR 3.08.01.02 SR 3.08.01.02 NOTE 1 SR 3.08.01.02 NOTE 2 SR 3.08.01.03 SR 3.08.01.03 NOTE 1 SR 3.08.01.03 NOTE 3

A.09 Rev. A	CTS 15.3.7.B.1.f, 15.3.7.B.1.g, and 15.3.7.B.1.h provide Actions for inoperable normal and standby emergency AC power supplies. As part of these Actions, the CTS states that if normal power supply (offsite power) is out of service, the operable diesel generator will be supplying the affected safeguards buses. By design, if the offsite power supply is out of service, the associated diesel generator will auto start on a bus undervoltage condition and close on to its associated safeguards bus. Specifying the accomplishment of normal automatic functions is not necessary, and has therefore been omitted.

CTS:	ITS:
15.03.07.B.01.f	N/A
15.03.07.B.01.g	N/A
15.03.07.B.01.h	N/A

DOC Number	DOC Text
A.10 Rev. B	CTS 15.3.7.B.1.f, 15.3.7.B.1.g, and 15.3.7.B.1.h provide actions for inoperable standby emergency power sources. The following combinations of inoperable required standby emergency power sources to Class 1E 4.16 kV buses are allowed for a period not to exceed 7 days, provided the redundant engineered safety features are operable and the required redundant standby emergency power supplies are started within 24 hours of entry into the LCO: Unit 1 A05/B03 or Unit 2 A06/B04; Unit 1 A06/B04 or Unit 2 A05/B03 or both; Unit 1 A05/B03 and Unit 2 A05/B03; or Unit 1 A06/B04 and Unit 2 A06/B04. Any other inoperable standby emergency power source(s) to a different combination of safeguards buses would require entry into CTS 15.3.0.B. Furthermore, CTS requires that after 7 days, both units are required to be placed in hot shutdown within the following 6 hours and cold shutdown within 36 hours. Proposed ITS LCO 3.8.1, Condition E provides Required Actions in the event of inoperabilities in the combinations above. The other combinations require entry into proposed ITS LCO 3.8.1, Condition G (See DOC L.5). Required Actions E.2.1 and E.2.2 require determining other standby emergency power sources are not inoperable due to common mode failure or performing SR 3.8.1.2 (start of standby emergency power source) within 24 hours. In the event of a failure to complete Required Actions E.2.1 and E.2.2, Required Action E.2.3 requires declaring other standby emergency power sources inoperable. Required Action E.3 requires restoration of the standby emergency power source to an OPERABLE status within 7 days, or 14 days from discovery of failure to meet the LCO (See DOC M.2). If the standby emergency power source(s) are not restored to an OPERABLE status within 7 days, Condition H requires placing the unit in MODE 3 within 6 hours and MODE 5 within 36 hours. Therefore the CTS requirements have been conveyed to the ITS with only administrative changes.

CTS:	ITS:
15.03.07.B.01.f	LCO 3.08.01 COND E LCO 3.08.01 COND E NOTE LCO 3.08.01 COND E RA E.2.2 LCO 3.08.01 COND E RA E.2.3 LCO 3.08.01 COND E RA E.3 LCO 3.08.01 COND H LCO 3.08.01 COND H RA H.2
15.03.07.B.01.g	LCO 3.08.01 COND E LCO 3.08.01 COND E NOTE LCO 3.08.01 COND E RA E.2.2 LCO 3.08.01 COND E RA E.2.3 LCO 3.08.01 COND E RA E.3 LCO 3.08.01 COND H LCO 3.08.01 COND H RA H.2
15.03.07.B.01.h	LCO 3.08.01 COND E LCO 3.08.01 COND E NOTE LCO 3.08.01 COND E RA E.2.2 LCO 3.08.01 COND E RA E.2.3

DOC Number	DOC Text	
	15.03.07.B.01.h	LCO 3.08.01 COND E RA E.3 LCO 3.08.01 COND H LCO 3.08.01 COND H RA H.2 LCO 3.08.01 COND H RA H.2

A.11
Rev. A

CTS 15.3.7.B.1.f, 15.3.7.B.1.g, and 15.3.7.B.1.h provide actions for inoperable normal power supplies. The following combinations of inoperable required offsite power sources to Class 1E 4.16 kV buses are allowed for a period not to exceed 7 days, provided the redundant engineered safety features are operable: Unit 1 A05/B03 or Unit 2 A06/B04; Unit 1 A06/B04 or Unit 2 A05/B03 or both; Unit 1 A05/B03 and Unit 2 A05/B03; or Unit 1 A06/B04 and Unit 2 A06/B04. Any other combination of inoperable required offsite power source(s) to one or more required Class 1E 4.16 kV bus(es) would require entry into CTS 15.3.0.B. Furthermore the CTS requires that after 7 days, both units are required to be placed in hot shutdown within the following 6 hours and cold shutdown within 36 hours.

Proposed ITS LCO 3.8.1, Condition D covers the combinations above. The other combinations require entry into proposed ITS LCO 3.8.1, Condition C (See DOC L.6). The Condition D Required Actions require the restoration of the offsite power source(s) to an OPERABLE status within 7 days, or per Condition H, place the unit in MODE 3 within 6 hours and MODE 5 within 36 hours. Therefore the above CTS requirements are conveyed to the ITS with only administrative changes being made.

CTS:	ITS:
15.03.07.B.01.f	LCO 3.08.01 COND D LCO 3.08.01 COND D RA D.2 LCO 3.08.01 COND H LCO 3.08.01 COND H RA H.2
15.03.07.B.01.g	LCO 3.08.01 COND D LCO 3.08.01 COND D RA D.2 LCO 3.08.01 COND H LCO 3.08.01 COND H RA H.2
15.03.07.B.01.h	LCO 3.08.01 COND D LCO 3.08.01 COND D RA D.2 LCO 3.08.01 COND H LCO 3.08.01 COND H RA H.2
N/A	N/A N/A N/A

DOC Number	DOC Text
A.12 Rev. A	CTS 15.4.6.A includes the following statement, "The above tests will be considered satisfactory if all applicable equipment operates as designed." This detail on surveillance testing is not necessary to describe the actual regulatory requirement, and has therefore been deleted from the Technical Specifications. The proposed ITS specifies the safety objective that must be fulfilled by the surveillance tests, while leaving the details associated with acceptance verifications to licensee control. These type details are better suited for procedural control and are not required to be in the ITS to provide adequate protection to the public health and safety. Changes to plant procedures and other plant controlled documents are subject to controls imposed by plant administrative procedures, which are based on applicable regulations and standards. **CTS:** 15.04.06.A **ITS:** N/A
L.01 Rev. A	The Current Technical Specification describes how a system, subsystem, train, component or device's operability is determined when either its emergency AC power or normal AC power source is inoperable. When a system, subsystem, train, component or device redundant to one associated with the inoperable AC source is discovered inoperable, the CTS requires entry into the ACTIONS for both redundant systems, subsystems, trains, components or devices being inoperable. This limitation has been moved to proposed LCO 3.8.1 Required Actions for inoperable offsite circuits and inoperable DGs consistent with NUREG 1431. However, the ITS provides a limited period of time to verify redundant features are OPERABLE as well as time to restore the component to operable status after an AC source is discovered inoperable. 12 hours has been provided if an offsite circuit is inoperable, and 4 hours if one DG is inoperable. These times provide a reasonable time to restore the feature or AC source to OPERABLE status commensurate with the level of degradation of plant systems. Accordingly, this change is a relaxation consistent with NUREG 1431. **CTS:** 15.03.0.D **ITS:** LCO 3.08.01 COND D RA D.1 LCO 3.08.01 COND E RA E.1

DOC Number	DOC Text
L.02 Rev. A	The inoperability of a unit's 13.8 / 4.16 kV (X04) transformer renders offsite power to the associated unit's safeguards buses inoperable. CTS 15.3.7.B.1.c requires the reactor associated with an out of service 13.8 / 4.16 kV (X04) transformer to be placed in the hot shutdown condition. Proposed ITS LCO 3.8.1, Condition B is entered if an associated units X04 transformer is inoperable, with Required Action B.1 requiring restoration of the required offsite power source to an OPERABLE status within 24 hours. This change results in a relaxation of the current requirements, but is acceptable. According to Regulatory Guide 1.93, operation may continue with a required offsite circuit inoperable for a period that should not exceed 24 hours. This level of degradation means that the offsite electrical power system does not have the capability to effect a safe shutdown and to mitigate the effects of an accident; however, the onsite AC sources have not been degraded. This Condition is similar to NUREG 1431, LCO 3.8.1, Condition C, which has a 24 hour Completion Time for two offsite circuits inoperable. Because of the normally high availability of the offsite source, this level of degradation may appear to be more severe than other combinations of AC sources inoperable that involve one or more inoperable standby emergency power sources. However, two factors tend to decrease the severity of this level of degradation: a. The configuration of the redundant AC electrical power system that remains available is not susceptible to a single bus or switching failure; and b. The time required to detect and restore an unavailable offsite power source is generally much less than that required to detect and restore an unavailable onsite AC source, because normally offsite power can be restored by simple switching operations. With the required offsite circuit inoperable, sufficient onsite AC sources are available to maintain the unit in a safe shutdown condition in the event of a DBA or transient. In fact, a simultaneous loss of offsite AC sources, a LOCA, and a worst case single failure were postulated as a part of the design basis in the safety analysis. Thus, the 24 hour Completion Time provides a period of time to effect restoration of the offsite circuits commensurate with the importance of maintaining an AC electrical power system capable of meeting its design criteria.

CTS:	ITS:
15.03.07.B.01.c	LCO 3.08.01 COND B LCO 3.08.01 COND B RA B.1

DOC Number	DOC Text
L.03 Rev. A	CTS 15.3.7.B.1.f, 15.3.7.B.1.g, and 15.3.7.B.1.h require the redundant standby emergency power supplies be started within 24 hours of an out of service normal or standby emergency power supply. These specifications also require the redundant standby emergency power supply be started every 72 hours thereafter. The requirement to verify the OPERABILITY of the standby emergency power supplies every 72 hours while in the LCO has not been retained in ITS. Once the OPERABILITY of the standby emergency power source has been verified or shown to not to be subject to a common mode failure, it is unnecessary to revalidate this information with additional performances of the surveillance requirements. Additionally, the requirement to start the required redundant standby emergency power supply within 24 hours of an inoperable offsite power supply has not been retained in ITS. Surveillance requirements establish appropriate tests and frequencies to verify the operability of required equipment. Inoperability of the offsite power source does not affect the operability of the standby emergency power source; therefore, normal surveillances provide the required verifications of operability and additional testing is not required.

CTS:	ITS:
15.03.07.B.01.f	N/A
15.03.07.B.01.g	N/A
15.03.07.B.01.h	N/A
NEW	LCO 3.08.01 COND E RA E.2.1

DOC Number	DOC Text
L.04 Rev. A	CTS 15.3.7.B.1.f, 15.3.7.B.1.g and 15.3.7.B.1.h allow continued operation for up to 7 days in the event of specific normal or standby emergency power sources are out of service, provided the required redundant engineered safety feature(s) are operable. Proposed ITS LCO 3.8.1, Condition D is entered when one or more required offsite power source(s) to one or more required Class 1E 4.16 kV bus(es) is inoperable. Proposed ITS LCO 3.8.1, Condition E is entered when one or more required standby emergency power source(s) to one or more required Class 1E 4.16 kV bus(es) is inoperable. Required Actions D.2 and E.3 require the restoration of the associated required power source(s) to an OPERABLE status within 7 days. Required Action D.1 allows 12 hours to restore any inoperable required redundant feature(s) before declaring the required feature(s) supported by the inoperable offsite power source inoperable. Required Action E.1 allows 4 hours to restore any inoperable required redundant feature(s) before declaring the required feature(s) supported by the inoperable standby emergency power source inoperable. The addition of Required Actions D.1 and E.1 results in a relaxation of the current requirements. These additions are acceptable because they allow the operator time to evaluate and repair any discovered inoperabilities. The Completion Times minimize risk while allowing time for restoration before subjecting the unit to transients associated with shutdown. In this Condition, the remaining OPERABLE standby emergency power source and offsite circuits are adequate to supply electrical power to the onsite Class 1E Distribution System. Thus, on a component basis, single failure protection for the required feature's function may have been lost; however, function has not been lost. The Completion Times take into account the OPERABILITY of the redundant counterpart to the inoperable required feature. Additionally, the Completion Times take into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

CTS:	ITS:
NEW	LCO 3.08.01 COND D RA D.1 LCO 3.08.01 COND E RA E.1

DOC Number	DOC Text
L.05 Rev. B	CTS is modified by the addition of proposed Condition G. Condition G is entered when standby emergency power to both safeguards buses on the same unit are inoperable (i.e. 1A05 and 1A06, or 2A05 and 2A06), or standby emergency power to safeguards buses 1A05 and 2A06 are inoperable. CTS does not provide required actions for the above combinations of inoperable safeguards buses and would require entry into LCO 15.3.0.B. Under this condition, with an assumed loss of offsite electrical power, insufficient standby emergency power sources are available to power the minimum required ESF functions. Since the offsite electrical power system is the only source of AC power for this level of degradation, the risk associated with continued operation for a very short time would be less than that associated with an immediate controlled shutdown (the immediate shutdown could cause grid instability, which could result in a total loss of AC power). Any inadvertent generator trip could also result in a total loss of offsite AC power, however, the time allowed for continued operation is severely restricted. The intent here is to avoid the risk associated with an immediate controlled shutdown and to minimize the risk associated with this level of degradation. According to Regulatory Guide 1.93, operation may continue for a period that should not exceed 2 hours.

CTS:	ITS:
NEW	LCO 3.08.01 COND G LCO 3.08.01 COND G RA G.1

DOC Number	DOC Text
L.06 Rev. B	CTS is modified by the addition of Condition C. Condition C is entered when offsite power to both safeguards buses on the same unit are inoperable (i.e. 1A05 and 1A06, or 2A05 and 2A06), or offsite power to safeguards buses 1A05 and 2A06 are inoperable. CTS does not provide required actions for the above combinations of inoperable safeguards buses and would require entry into LCO 15.3.0.B. This level of degradation means that the offsite electrical power system does not have the capability to supply the minimum number of required ESF systems required to mitigate the effects of an accident; however, the onsite AC sources have not been degraded. This condition is similar to that of Condition B, which according to Regulatory Guide 1.93 (Ref. 5), allows operation to continue for a period that should not exceed 24 hours. This time will be used to restore the operability of the offsite power source. One of the most likely causes of the inoperability of all offsite power is problems with the offsite electrical grid. In these cases, immediately removing the plant's generation from the grid may further exacerbate the condition and adversely affect plant operation. A time of 24 hours is a reasonable time to correct such conditions. Because of the normally high availability of the offsite source, this level of degradation may appear to be more severe than other combinations of AC sources inoperable that involve one or more inoperable standby emergency power sources. However, two factors tend to decrease the severity of this level of degradation: a. The configuration of the redundant AC electrical power system that remains available is not susceptible to a single bus or switching failure; and b. The time required to detect and restore an unavailable offsite power source is generally much less than that required to detect and restore an unavailable onsite AC source. With the required offsite circuit inoperable, sufficient onsite AC sources are available to maintain the unit in a safe shutdown condition in the event of a DBA or transient. In fact, a simultaneous loss of offsite AC sources, a LOCA, and a worst case single failure were postulated as a part of the design basis in the safety analysis. Thus, the 24 hour Completion Time provides a period of time to effect restoration of the offsite circuits commensurate with the importance of maintaining an AC electrical power system capable of meeting its design criteria.

CTS:	ITS:
NEW	LCO 3.08.01 COND C LCO 3.08.01 COND C RA C.1

DOC Number	DOC Text	
L.07 Rev. B	CTS 15.4.6.A.2 specifies DG testing initiated by an actual interruption of normal station AC power supplies to associated engineered safety systems busses together with a simulated SI signal. ITS SR 3.8.1.5 permits an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ESF actuation signal to satisfy the SR requirements. The results of the testing are not affected by the nature of the initiating signal, because the system cannot discriminate whether the signals are actual or simulated. Simulating a loss of offsite power by manual actuation of the UV relays will result in an actual loss of power to the bus. Although this change results in a relaxation of the current requirement, it does not change the intent of the surveillance requirement and is therefore acceptable.	
	CTS:	**ITS:**
	15.04.06.A.02	SR 3.08.01.05
L.08 Rev. A	CTS 15.4.6.A.2 requires testing of the DGs to include an additional demonstration of automatic load shedding and restoration of vital loads by manually tripping the DG output breaker, after the DG has carried its load for a minimum of 5 minutes. This requirement is not being retained in the ITS, and therefore results in a relaxation of the current requirements. This change is acceptable, because the feature being tested is not relied upon in the mitigation of an analyzed accident.	
	CTS:	**ITS:**
	15.04.06.A.02	N/A

DOC Number	DOC Text
L.09 Rev. A	CTS 15.3.7.A.1.b requires the associated unit's 345/13.8 and 13.8/4.16 kV transformers to be in service, for the reactor to be made critical. In lieu of the associated unit's 345/13.8 kV transformer, unit operation with the opposite units 345/13.8 kV transformer in service is acceptable, providing the 13.8 kV gas turbine generator is operating. If the gas turbine is not operating when a unit's associated offsite power source becomes unavailable, entry into CTS 15.3.0.B is required until the gas turbine is started, synchronized and loaded. Proposed ITS LCO 3.8.1.a requires an offsite circuit between the offsite power distribution network, utilizing the associated unit's 345/13.8 kV and 13.8/4.16 kV transformers to be operable. Condition A and its associated Required Actions have been proposed to address the inoperability of one or both 345/13.8 kV transformers. The proposed ITS presentation clarifies the hierarchy for preferred offsite power sources, while retaining the current licensing basis. If the associated unit's 345/13.8 kV transformer is inoperable (not in service), Required Action A.1 requires verification that offsite power is supplying the associated unit's 4.16 kV safeguards buses from the opposite unit's X03 transformer, and Required Action A.2 requires that the gas turbine generator be placed in operation within 24 hours. Specifying completion times of 24 hours to place the gas turbine in service results in a relaxation of the current requirements. In the above condition, the offsite electrical power system does not have the capability to supply the minimum number of required ESF systems required to mitigate the effects of an accident; however, the onsite AC sources have not been degraded. This condition is similar to that of Conditions B and C, which according to Regulatory Guide 1.93 (Ref. 5), allows operation to continue for a period that should not exceed 24 hours. Because of the normally high availability of the offsite source, this level of degradation may appear to be more severe than other combinations of AC sources inoperable that involve one or more inoperable standby emergency power sources. However, two factors tend to decrease the severity of this level of degradation: a. The configuration of the redundant AC electrical power system that remains available is not susceptible to a single bus or switching failure; and b. The time required to detect and restore an unavailable offsite power source is generally much less than that required to detect and restore an unavailable onsite AC source, because normally offsite power can be restored by simple switching operations. With the required offsite circuit inoperable, sufficient onsite AC sources are available to maintain the unit in a safe shutdown condition in the event of a DBA or transient. In fact, a simultaneous loss of offsite AC sources, a LOCA, and a worst case single failure were postulated as a part of the design basis in the safety analysis. Thus, the 24 hour Completion Time provides a period of time to effect restoration of the offsite circuits commensurate with the importance of maintaining an AC electrical power system capable of meeting its design criteria. **CTS:** 15.03.07.A.01.b **ITS:** LCO 3.08.01 COND A RA A.2

DOC Number	DOC Text
L.10 Rev. B	CTS 15.3.0.D requires entry into 15.3.0.B, if the offsite and emergency power sources to a safeguards bus are inoperable. CTS 15.3.0.B requires actions be initiated within 1 hour to place the affected unit in hot shutdown within 7 hours and cold shutdown within 37 hours. Under the same conditions, proposed ITS LCO 3.8.1, Condition G, requires entry into the applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," thereby requiring entry into the actions associated with inoperable supported equipment. Whether the safeguards bus is de-energized, all of its AC power sources are inoperable, or a combination of normal and standby emergency power sources to opposite trains are inoperable, the remaining AC electrical power distribution subsystems are capable of supporting the minimum safety functions necessary to shutdown and maintain it in a safe shutdown condition, assuming no single failure. The overall reliability is reduced, however, because a single failure in the remaining distribution subsystems could result in the minimum required ESF functions not being supported. 12 hours to restore required redundancy of power supplies is reasonable based on the safety function being satisfied by the available power sources and the overall reliability of offsite and standby emergency power. Therefore, entering the Conditions and Required Actions of LCO 3.8.1 Condition G, is appropriate in any case, will ensure that the appropriate Required Actions are taken, and does not result in a reduction in the margin of safety.

CTS:	ITS:
15.03.0.D	LCO 3.08.01 COND F
15.03.07.B.01.k	LCO 3.08.01 COND F
NEW	LCO 3.08.01 COND F RA F.1 LCO 3.08.01 COND F RA F.2

L.11 Rev. B	CTS 15.4.6.A.1 requires the "Manually-initiated" start of the DG, followed by "manual" synchronization with other power sources and assumption of load by the DG. CTS 15.4.6.A.1 also states, "Normal plant operation will not be affected." Information specifying the method of starting or synchronizing the DG, as well as editorial information about the effect of the test on plant operation is not retained in ITS. This information provides details that are not directly pertinent to the actual requirements, but either describe a method of testing or provide unnecessary information. The purpose of the described test is to ensure the standby emergency power source will start from a standby condition and is capable of supplying rated load. This purpose can be fulfilled without specifying the exact means for starting and loading the power source. These details can be moved to other documents without impact on safety, because they are not necessary to adequately describe the regulatory requirement or analysis assumptions.

CTS:	ITS:
15.04.06.A.01	N/A

DOC Number	DOC Text
LA.01 Rev. B	CTS 15.3.7.A.1.a requires at least two 345 KV transmission lines to be in service. CTS 15.3.7.B.1.a provides actions in the event of a loss of one or more 345 KV lines. These requirements are not being retained in ITS. As discussed in the CTS Bases the purpose of the requirements and Required Actions for the loss of 345 KV lines is to ensure continuity of service and self-sustaining reactor operation in the event of the loss of the remaining 345 KV line. This requirement is not related to any safety requirement. Therefore, this information provides details that are not directly pertinent to the actual requirements, but rather describe offsite transmission network components which are not included in the requirement. These details can be moved to other documents without impact on safety, because they are not necessary to adequately describe the regulatory requirement. Changes to plant procedures and other plant controlled documents are subject to controls imposed by plant administrative procedures, which endorse applicable regulations and standards.

CTS:	ITS:
15.03.07.A.01.a	N/A
15.03.07.B.01.a	N/A

LA.03 Rev. B	CTS 15.4.6.A.3 states, "The proper operation of Emergency Lighting, including the automatic transfer switch for DC lights, will be demonstrated during each reactor shutdown for a major fuel reloading." This requirement is not being retained in ITS. Operation of the DC lighting is not a safety function and is not necessary to ensure required safeguards functions are accomplished. Therefore, these details can be moved to other documents without impact on safety, because they are not necessary to adequately describe the regulatory requirement. Changes to plant procedures and other plant controlled documents are subject to controls imposed by plant administrative procedures, which endorse applicable regulations and standards.

CTS:	ITS:
15.04.06.A.03	N/A

LA.04 Rev. B	CTS 15.4.6.A.4 requires each diesel generator to be inspected following the manufacturer's recommendations. This Surveillance is not specifically detailed in the proposed ITS. Procedural controls on DG inspections recommended by the manufacturer are sufficient to ensure the DG receives the necessary inspections. Removal of these details from the Technical Specifications will have no effect on DG OPERABILITY. The requirement for the maintenance inspections will be relocated to the Technical Requirements Manual (TRM). Placing these details in procedures provides adequate assurance that they will be maintained. Changes to these procedures will be controlled in accordance with plant processes and practices.

CTS:	ITS:
15.04.06.A.04	N/A

DOC Number	DOC Text
M.01 Rev. A	CTS 15.3.7.A.1 requires the requirements of 15.3.7.A.1.a through 15.3.7.A.1.i to be met before either of both reactors are made critical. Proposed ITS LCO 3.8.1 the AC electrical sources of LCO 3.8.1.a, 3.8.1.b and 3.8.1.c to be OPERABLE in MODES 1, 2, 3 and 4. The AC power requirements for MODES 5 and 6 are covered in LCO 3.8.2, "AC Sources—Shutdown. Expanding the applicability of the LCO to include MODES 3 and 4 places additional requirements on plant operation and is more restrictive, but is necessary to ensure acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of Anticipated Operational Occurrences (AOOs) or abnormal transients; and to ensure adequate core cooling is provided and containment OPERABILITY and other vital functions are maintained in the event of a postulated DBA. As a result of expanding the applicability of LCO 3.8.1, the default actions have also been changed from place unit in hot shutdown (CTS 15.3.7.B.1.c) to be in MODE 3 in 6 hours and in MODE 5 in 36 hours (ITS 3.8.1, Condition H). This removes the unit from a condition where LCO 3.8.1 applies. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging plant systems. **CTS:** — **ITS:** 15.03.07.A.01 — LCO 3.08.01 15.03.07.B.01.c — LCO 3.08.01 COND H RA H.1
M.02 Rev. A	CTS 15.3.7.B.1.f, 15.3.7.B.1.g and 15.3.7.B.1.h have been revised. Each of these specifications requires the inoperable normal or standby emergency power supply(s) to be restored within 7 days. Proposed ITS LCO 3.8.1 Required Actions D.2 and E.3 include an additional Completion Time of "AND 14 days from discovery of failure to meet LCO." The 14 day Completion Time for Required Action D.2 and E.3 establishes a limit on the maximum time allowed for any combination of required AC power sources to be inoperable during any single contiguous occurrence of failing to meet the LCO. If Condition D is entered while, for instance, a standby emergency power source is inoperable and that standby emergency power source is subsequently returned to OPERABLE status, the LCO may already have been not met for up to 7 days. This could lead to a total of 14 days since initial failure to meet the LCO, to restore the offsite power supply. At this time, a standby emergency power source could again become inoperable, the offsite power supply restored to OPERABLE status, and an additional 7 days (for a total of 21 days) allowed prior to complete restoration of the LCO. The 14 day Completion Time provides a limit on the time allowed in a specified condition after discovery of failure to meet the LCO. This limit is considered reasonable for situations in which Conditions D and E are entered concurrently. The "AND" connector between the 7 day and 14 day Completion Times means that both Completion Times apply simultaneously, and the more restrictive Completion Time must be met. **CTS:** — **ITS:** NEW — LCO 3.08.01 COND D RA D.2 LCO 3.08.01 COND E RA E.3

DOC Number	DOC Text
M.03 Rev. A	CTS 15.4.6.A.1 requires the start of the DG, followed by synchronization with other power sources and assumption of load by the DG shall not exceed 2850 kW, conducted monthly with a minimum running time of 30 minutes on each DG. Proposed ITS SR 3.8.1.3 requires each standby emergency power source be synchronized and loaded and operated for greater than or equal to 60 minutes at a load greater than or equal to 2500 KW and less than or equal to 2850 KW. This surveillance requirement is also modified by the addition of NOTE 2, which states that momentary transients, because of changing bus loads, do not invalidate this test. These changes impose additional requirements on unit operation and are more restrictive. The load band is provided to establish adequate DG minimum load and avoid routine overloading of the standby emergency power source. Routine overloading may result in more frequent inspections in accordance with vendor recommendations in order to maintain standby emergency power source OPERABILITY. A minimum run time of 60 minutes is required to stabilize engine temperatures, while minimizing the time that the standby emergency power source is connected to the offsite source.

CTS:	ITS:
15.04.06.A.01	SR 3.08.01.03
NEW	SR 3.08.01.03 NOTE 2

M.04 Rev. A	CTS 15.4.6.A has been modified by the adoption of ITS SR 3.8.1.1. This modification imposes additional requirements on unit operation and is more restrictive. This SR ensures proper circuit continuity for the offsite AC electrical power supply to the onsite distribution network and availability of offsite AC electrical power. The breaker alignment verifies that each breaker is in its correct position to ensure that distribution buses and loads are connected to their preferred offsite power source. The 7 day Frequency is adequate since breaker position is not likely to change without the operator being aware of it and because its status is displayed in the control room.

CTS:	ITS:
NEW	SR 3.08.01.01

DOC Number	DOC Text
M.05 Rev. A	CTS 15.3.6.A has been modified by the adoption of ITS SR 3.8.1.6. This modification imposes additional requirements on unit operation and is more restrictive. As required by Regulatory Guide 1.9, this Surveillance ensures that the manual synchronization and load transfer from the standby emergency power source to the offsite source can be made and the standby emergency power source can be returned to ready to load status when offsite power is restored. It also ensures that the autostart logic is reset to allow the standby emergency power source to reload if a subsequent loss of offsite power occurs. The standby emergency power source is considered to be in ready to load status when the standby emergency power source is at rated speed and voltage, the output breaker is open and can receive an autoclose signal on bus undervoltage, and the load sequence logic is reset. The Frequency of 18 months is consistent with the recommendations of Regulatory Guide 1.9, and takes into consideration unit conditions required to perform the Surveillance. **CTS:** NEW **ITS:** SR 3.08.01.06
M.06 Rev. A	CTS 15.4.6.A.2 requires the demonstration of standby emergency power source operation, during an actual loss of offsite power in conjunction with a simulated safety injection signal, during reactor shutdown for major fuel reloading. Proposed SR 3.8.1.5 requires performance of the standby emergency power source test once per 18 months. The CTS does not define a specific frequency of performance for this surveillance, but rather an evolution which can vary significantly from outage to outage with no boundary limit. Accordingly, the adoption of a bounding frequency (18 months) is a more restrictive change. **CTS:** 15.04.06.A.02 **ITS:** SR 3.08.01.05

DOC Number	DOC Text
M.07 Rev. A	CTS 15.3.7.A.1.b requires the associated unit's 345/13.8 kV and 13.8/4.16 kV transformers to be in service. In lieu of the associated unit's 345/13.8 kV transformer, unit operation with the opposite units 345/13.8 kV transformer in service is acceptable, providing the 13.8 kV gas turbine generator is operating. ITS Condition A and its associated Required Actions have been proposed to address the inoperability of one or both 345/13.8 kV transformers. If the associated unit's 345/13.8 kV transformer is inoperable (not in service), Required Action A.1 requires verification that offsite power is supplying the associated unit's 4.16 kV safeguards buses from the opposite unit's X03 transformer within 24 hours, and Required Action A.2 requires that the gas turbine generator be placed in operation. The addition of the 24 hour requirement to verify offsite power is supplying the associated unit's 4.16 kV safeguards buses from the opposite unit's X03 transformer imposes additional requirements on unit operation and is more restrictive. The 24 hours are sufficient to verify that the associated unit's safeguards buses continue to be energized from offsite power, since transfer to the opposite unit's X03 transformer should have occurred automatically. If auto bus transfer has not occurred, the 24 hour Completion Time is sufficient to return offsite power to the associated unit's safeguards buses. **CTS:** 15.03.07.A.01.b **ITS:** LCO 3.08.01 COND A RA A.1
M.08 Rev. A	Per CTS 15.3.7.B.1.b, if both 345 kV/13.8 kV auxiliary transformers are out of service and only the gas turbine is operating, only one reactor shall remain operating at less than 50% power, and the second reactor shall be placed in the hot shutdown condition. This allowance is not being retained in ITS. ITS LCO 3.8.2, Condition H, requires one circuit be verified between the offsite transmission network and the associated unit's 4.16 kV Class 1E safeguards buses, utilizing the opposite unit's X03 transformer within 24 hours. Additionally, the gas turbine shall be verified in operation within 24 hours. If either of these Required Actions cannot be met, Condition H is entered requiring the affected unit(s) be placed in MODE 3 in 6 hours and MODE 5 in 36 hours. This change imposes additional requirements on unit operation and is therefore more restrictive. **CTS:** 15.03.07.B.01.b **ITS:** N/A
M.09 Rev. A	CTS 15.4.6.A.1 requires each required diesel generator to be started and loaded for a specified period of time on a monthly frequency. This requirement has been retained as proposed SR 3.8.1.2 and SR 3.8.1.3 which are required to be performed once per 31 days. Proposed SR 3.8.1.2, verifies that the required diesel generators start and achieve rated speed and voltage. The verification of speed and voltage is a new, more restrictive requirement for this SR. **CTS:** 15.04.06.A.01 **ITS:** SR 3.08.01.02

DOC Number	DOC Text
M.10 Rev. A	CTS 15.4.6.A.2 requires each required diesel generator to be automatically started and loaded. This requirement has been retained as proposed SR 3.8.1.5. Proposed SR 3.8.1.5, verifies that the frequency and voltage are within limits. The verification of speed and voltage is a new, more restrictive requirement for this SR. **CTS:** 15.04.06.A.02 **ITS:** SR 3.08.01.05

2) A single train of spent fuel cooling is adequate to cool the spent fuel pool.

3) The required redundant shared engineered safety features for the other unit are operable. < See LCOs 3.8.9 >

f. The normal power supply or standby emergency power supply to Unit 1 A05/B03 or Unit 2 A06/B04 may be out of service for a period not exceeding 7 days provided the required redundant engineered safety features are operable and the required redundant standby emergency power supplies are started within 24 hours before or after entry into this LCO ~~and every 72 hours thereafter~~. If the normal power supply ~~is~~ out of service, an operable ~~emergency~~ diesel generator is ~~supplying the affected 4160/480 Volt buses~~. After 7 days, both units will be placed in hot shutdown within the following 6 hours and cold shutdown within 36 hours.

A.9

g. The normal power supply or standby emergency power supply to Unit 1 A06/B04 or Unit 2 A05/B03 or both may be out of service for a period not exceeding 7 days provided the required redundant engineered safety features are operable and the required redundant standby emergency power supplies are started within 24 hours before or after entry into this LCO ~~and every 72 hours thereafter~~. If the normal power supply is out of service, an operable emergency diesel generator is ~~supplying the affected 4160/480 Volt buses~~. After 7 days, both units will be placed in hot shutdown within the following 6 hours and cold shutdown within 36 hours.

A.9

h. The normal power supply or standby emergency power supply to Unit 1 A05/B03 and Unit 2 A05/B03, or Unit 1 A06/B04 and Unit 2 A06/B04 may be out of service for a period not exceeding 7 days provided the required redundant engineered safety features are operable and the required redundant standby emergency power supplies are started within 24 hours before or after entry into this LCO ~~and every 72 hours thereafter~~. If the normal ~~power supply~~ is out of service, an ~~operable emergency~~ diesel

A.11/L.4/L.6/M.2

A.9

Normal supply portion
See Insert 3.8.1-5:

- Cond D & RA's addresses normal power source inoperabilities.
- Cond C & RA's addresses normal power source inoperabilities which have no allowed outage time or result in entry into 15.3.0.B (ITS LCO 3.0.3).
- 12 hours allowed to restore an inoperable redundant.
- 14 day Completion Time limit added.

Emergency power supply portion
See Insert 3.8.1-4:

- Cond E & RA's addresses emergency power source inoperabilities.
- Cond F, G & RA's addresses emergency power source inoperabilities which result in entry into 15.3.0.B (ITS LCO 3.0.3).
- Four hours allowed to restore an inoperable redundant.
- 14 day Completion Time limit added.

B RAI 3.8.1-9

See Insert 3.8.1-4:

- Starting of the emergency power source (DGs), limited to the inoperability of the emergency power source (DG).
- 72 hr re-performance of DG start omitted.
- Common mode failure check allowed in lieu of diesel start.

A.10/L.4/M.2/L.5

L.3

A.10/A.11/L.4/M.2 → Emergency power supply portion See Insert 3.8.1-4
Normal supply portion See Insert 3.8.1-5:

A.9 → ~~generator is supplying the affected 4160/480~~ Volt buses. After 7 days, both units will be placed in hot shutdown within the following 6 hours and cold shutdown within 36 hours.

i. One of the four connected safety-related station batteries may be inoperable for a period not exceeding 24 hours provided four battery chargers remain operable with one charger carrying the DC loads of each main DC distribution bus. < See LCO 3.8.4

j. If an operating safety-related inverter is rendered inoperable and the associated loads transfer to a non-safety-related power source, the loads shall be transferred back to an operable safety-related inverter within 8 hours or be in hot shutdown within an additional 6 hours and cold shutdown within 44 hours of inverter inoperability. < See LCO 3.8.7

k. If any safeguards bus is deenergized, the applicable LCOs will be entered for the affected equipment.

l. One of the four connected battery chargers may be inoperable for a period not to exceed 2 hours. If an operable battery charger is not connected to the affected DC distribution bus within 2 hours, the operating unit(s) shall be sequentially placed in hot shutdown within the following 6 hours and 9 hours respectively, and placed in cold shutdown within the following 36 hours. < See LCO 3.8.4

Basis

This two unit plant has four 345 KV transmission line interconnections. A 20 MW gas turbine generator, two original and two additional diesel generators are installed at the plant. All of these energy sources will be utilized to provide depth and reliability of service to the Engineered Safeguards equipment through redundant station auxiliary power supply systems.

The electrical system equipment is arranged so that no single contingency can inactivate enough safeguards equipment to jeopardize the plant safety. The 480-volt equipment is arranged on 4 buses per unit. The 4160-volt equipment is supplied from 6 buses per unit.

Two separate outside sources can serve either unit's low voltage station auxiliary transformer. One is a direct feed from the unit's high voltage station auxiliary transformer and the second is from the other unit's high voltage station auxiliary transformer or the gas turbine via the 13,800 volt ← A.5

Replace with Condition F & RA Note. See Insert 3.8.1-6. ← A.7, L.10

I/B RAI 3.8.1-9

A.1

15.4.6EMERGENCY POWER SYSTEM PERIODIC TESTS

Applicability

LCO 3.8.1 A.2

Applies to periodic testing and surveillance requirements of the emergency power system.

A.3

Objective

To verify that the emergency power system will respond promptly and properly when required.

Specification

A.8 See Insert 3.8.1-7 SR 3.8.1.2 and SR 3.8.1.3

The following tests and surveillance shall be performed as stated:

M.9

A. Diesel Generators

L.11

1. Manually-initiated start of the diesel generator, followed by manual synchronization with other power sources and assumption of load by the diesel generator shall not exceed 2850KW. This test will be conducted monthly with a minimum running time of 30 minutes on each diesel generator. Normal plant operation will not be affected.

achieves rated voltage and frequency

≥ 2500 kW and ≤ 2850 kW

60

L.11 M.3

B additional

SR 3.8.1.5

2. Automatic start of each diesel generator, load shedding, and restoration to operation of particular vital equipment, initiated by an actual interruption of normal AC station service power supplies to associated engineered safety systems busses together with a simulated safety injection signal. In addition, after the diesel generator has carried its load for a minimum of 5 minutes, automatic load shedding and restoration of vital loads are tested again by manually tripping the diesel generator output breaker. This test will be conducted during reactor shutdown for major fuel reloading of each reactor to assure that the diesel generator will start and assume required load in accordance with the timing sequence listed in FSAR Section 8.8 after the initial starting signal.

L.7 or simulated

L.8

M.6 18 months

New SR 3.8.1.1 See Insert 3.8.1-7 M.4

New SR 3.8.1.6 See Insert 3.8.1-8 M.5

A.1

D. When a system, subsystem, train, component or device is determined to be inoperable solely because its emergency power source is inoperable, or solely because its normal power source is inoperable, the system, subsystem, train, component or device may be considered operable for the purpose of satisfying the requirements of the applicable LCO, provided:

Cond D & RA D.1
Cond E & RA E.1

L.1

1. The available power source (normal or emergency) is operable; AND
2. All required redundant system(s), subsystem(s), train(s), components(s) and device(s) are operable.

L.10 → Cond F.G → If either 15.3.0.D.1 or 15.3.0.D.2 cannot be met, specifications 15.3.0.A and 15.3.0.B become applicable. This specification is not applicable during cold shutdown or refueling shutdown conditions.

A.1

B
RAI 3.8.1-9

E. A momentary loss of normal or emergency power resulting in prompt corrective or required action in accordance with Table 15.3.5-2, i.e., placing associated channels into the trip condition or shutdown of the unit, shall not be interpreted as causing a violation of the specification with respect to minimum operable channels, unless said loss is the result of personnel error or procedural violation.

F. Equipment removed from service or declared inoperable to comply with required actions may be returned to service solely to perform testing required to demonstrate its operability or the operability of other equipment.

< See LCO 3.0 >

Bases

Specifications 15.3.0.A and 15.3.0.B delineate the actions to be taken for circumstances not directly provided for in the action statements of a Limiting Condition for Operation (LCO) and whose occurrence would violate the intent of the specification. These specifications delineate the time limits for placing the unit(s) in a safe condition when operation cannot be maintained within the limits for safe operation as defined by the LCO and its associated action statements. It is not intended to be used as an operational convenience that permits routine, voluntary removal of redundant systems or components from service in lieu of other alternatives

Insert 3.8.1-4:

--------NOTE-------- Separate Condition entry is allowed for each inoperable standby emergency power source. ----------	E.1	Declare required feature(s) supported by the inoperable standby emergency power source inoperable when its required redundant feature(s) is inoperable.	4 hours from discovery of Condition E concurrent with inoperability of redundant required feature(s)
E. One or more required standby emergency power source(s) inoperable.	AND		
	E.2.1	Determine other required standby emergency power source(s) is not inoperable due to common cause failure.	24 hours
	OR		
	E.2.2	Perform SR 3.8.1.2 for required redundant standby emergency power source(s).	Within 24 hours of entry into Condition E
	OR		
	E.2.3	Declare other required standby emergency power source(s) inoperable.	Within 24 hours of entry into Condition E
	AND		
	E.3	Restore required standby emergency power source(s) to OPERABLE status.	7 days AND 14 days from discovery of failure to meet LCO
G. Standby emergency power to buses A05 and A06 on the same unit inoperable. OR Standby emergency power to buses 1A05 and 2A06 inoperable.	G.1	Restore one required standby emergency power source to OPERABLE status.	2 hours

New L.4 New L.3 New M.2 New L.5 A.10 CTS 15.3.7.B.1.f 15.3.7.B.1.g 15.3.7.B.1.h B RAI 3.8.1-9

Insert 3.8.1-5:

C. Required offsite power source to buses A05 and A06 on the same unit inoperable. OR Required offsite power source to buses 1A05 and 2A06 inoperable.	C.1 Restore required offsite power source(s) to OPERABLE status.	24 hours New L.6
D. One or more required offsite power source(s) to one or more required Class 1E 4.16 kV bus(es) inoperable. CTS 15.3.7.B.1.f 15.3.7.B.1.g 15.3.7.B.1.h A.11	D.1 Declare required feature(s) supported by the inoperable required offsite power source inoperable when its required redundant feature(s) is inoperable. AND D.2 Restore required offsite power source(s) to OPERABLE status.	12 hours from discovery of Condition D concurrent with inoperability of redundant required feature(s) New L.4 7 days AND 14 days from discovery of failure to meet LCO New M.2

B RAI 3.8.1-8

Insert 3.8.1-6:

F. One required offsite power source to one or more Class 1E 4.16 kV safeguards bus(es) inoperable. AND Standby emergency power inoperable to redundant equipment.	----------NOTE---------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems–Operating," when Condition F is entered with no AC power source to any Class 1E safeguards bus. ----------	
	F.1 Restore required offsite power source. OR F.2 Restore required standby emergency power source.	12 hours 12 hours

A.7

L.10

B
RAI 3.8.1-9

Justification For Deviations - NUREG-1431 Section 3.08.01

21-Jul-00

JFD Number	JFD Text
01 Rev. A	NUREG 1431 LCO 3.8.1 and associated Bases have been modified to reflect the Point Beach design and nomenclature. The sources of power between the offsite transmission network and the onsite Class 1E electrical power distribution system and separate and independent standby emergency power sources for each safeguards train ensures the availability of required power to shut down the reactor and maintain it in a safe shutdown condition after an anticipated operational occurrence (AOO) or a postulated DBA. The following AC electrical power sources are required to be OPERABLE: a. One circuit between the offsite transmission network and the associated unit's 4.16 kV Class 1E safeguards buses, A05 and A06, utilizing the associated unit's X03 and X04 transformers or the opposite unit X03 and associated unit X04 transformers with the gas turbine operating; and b. One circuit between the offsite transmission network and the opposite unit's 4.16 kV Class 1E safeguards buses, A05 and A06; and c. One standby emergency power source capable of supplying each 4.16 kV Class 1E 4.16 kV safeguards bus. Incorporating the above Point Beach design features into LCO 3.8.1 has necessitated additional changes to entry conditions, required actions, and surveillance requirements to utilize the plant specific nomenclature and unique design aspects.

ITS:	NUREG:
B 3.08.01	B 3.08.01
LCO 3.08.01 A	LCO 3.08.01 A
LCO 3.08.01 B	LCO 3.08.01 B
LCO 3.08.01 C	LCO 3.08.01 C
LCO 3.08.01 COND D	LCO 3.08.01 COND A
LCO 3.08.01 COND D RA D.1	LCO 3.08.01 COND A RA A.2
LCO 3.08.01 COND D RA D.2	LCO 3.08.01 COND A RA A.3
LCO 3.08.01 COND E	LCO 3.08.01 COND B
LCO 3.08.01 COND E RA E.1	LCO 3.08.01 COND B RA B.2
LCO 3.08.01 COND E RA E.2.1	LCO 3.08.01 COND B RA B.3.1
LCO 3.08.01 COND E RA E.2.2	LCO 3.08.01 COND B RA B.3.2
LCO 3.08.01 COND E RA E.3	LCO 3.08.01 COND B RA B.4
LCO 3.08.01 COND F	LCO 3.08.01 COND D
LCO 3.08.01 COND F RA F.1	LCO 3.08.01 COND D RA D.1

Justification For Deviations - NUREG-1431 Section 3.08.01

21-Jul-00

JFD Number	JFD Text	
	LCO 3.08.01 COND F RA F.2	LCO 3.08.01 COND D RA D.2
	LCO 3.08.01 COND G	LCO 3.08.01 COND E
	LCO 3.08.01 COND G RA G.1	LCO 3.08.01 COND E RA E.1
	SR 3.08.01.02	SR 3.08.01.02
	SR 3.08.01.02 NOTE 1	SR 3.08.01.02 NOTE 2
	SR 3.08.01.02 NOTE 2	SR 3.08.01.02 NOTE 3
	SR 3.08.01.03	SR 3.08.01.03
	SR 3.08.01.03 NOTE 1	SR 3.08.01.03 NOTE 1
	SR 3.08.01.05	SR 3.08.01.19
	SR 3.08.01.06	SR 3.08.01.16

JFD Number	JFD Text
02 Rev. A	NUREG 1431 has been modified by the adoption of Conditions A, B and C and associated Required Actions. Condition A is necessary to ensure a highly reliable power source of offsite power remains available when the associated unit's X03 transformer is inoperable. Required Action A.1 requires verification that offsite power is supplying the associated unit's 4.16 kV safeguards buses from the opposite unit's X03 transformer within 24 hours, and Required Action A.2 requires that the gas turbine generator be placed in operation. According to Regulatory Guide 1.93, operation may continue in this Condition for a period that should not exceed 24 hours. The 24 hour Completion Time provides a period of time to effect restoration of the offsite circuits commensurate with the importance of maintaining an AC electrical power system capable of meeting its design criteria. The 24 hour Completion Time associated with Required Action A.1 is sufficient to verify that the associated unit's safeguards buses continue to be energized from offsite power, since transfer to the opposite unit's X03 transformer should have occurred automatically. If auto bus transfer has not occurred, the 24 hour Completion Time is sufficient to return offsite power to the associated unit's safeguards buses. Required Action B.1, applies when the associated unit's X04 transformer is inoperable. The inoperability of the associated unit's X04 transformer renders offsite power to the associated units safeguards buses inoperable. According to Regulatory Guide 1.93, operation may continue in this Condition for a period that should not exceed 24 hours. The 24 hour Completion Time provides a period of time to effect restoration of the offsite circuits commensurate with the importance of maintaining an AC electrical power system capable of meeting its design criteria. Required Action C.1, applies when offsite power to both safeguards buses on the same unit are inoperable (i.e. 1A05 and 1A06, or 2A05 and 2A06), or offsite power to safeguards buses 1A05 and 2A06 are inoperable. According to Regulatory Guide 1.93, operation may continue in this Condition for a period that should not exceed 24 hours. The 24 hour Completion Time provides a period of time to effect restoration of the offsite circuits commensurate with the importance of maintaining an AC electrical power system capable of meeting its design criteria. Adopting these Conditions and Required Actions also results in the re-numbering/re-lettering of subsequent Conditions and Required Actions.

ITS:	NUREG:
B 3.08.01	B 3.08.01
LCO 3.08.01 COND A	N/A
LCO 3.08.01 COND A RA A.1	N/A
LCO 3.08.01 COND A RA A.2	N/A
LCO 3.08.01 COND B	N/A
LCO 3.08.01 COND B RA B.1	N/A

JFD Number	JFD Text	
	LCO 3.08.01 COND C	N/A
	LCO 3.08.01 COND C RA C.1	N/A
	LCO 3.08.01 COND D	LCO 3.08.01 COND A
	LCO 3.08.01 COND D RA D.1	LCO 3.08.01 COND A RA A.2
	LCO 3.08.01 COND D RA D.2	LCO 3.08.01 COND A RA A.3
	LCO 3.08.01 COND E	LCO 3.08.01 COND B
	LCO 3.08.01 COND E RA E.1	LCO 3.08.01 COND B RA B.2
	LCO 3.08.01 COND E RA E.2.1	LCO 3.08.01 COND B RA B.3.1
	LCO 3.08.01 COND E RA E.2.2	LCO 3.08.01 COND B RA B.3.2
	LCO 3.08.01 COND E RA E.3	LCO 3.08.01 COND B RA B.4
03 Rev. B	Not used.	
	ITS:	**NUREG:**
	B 3.08.01	B 3.08.01
	N/A	N/A
04 Rev. A	NUREG 1431 LCO 3.8.1, Required Action A.1 has not been retained in ITS. Condition A is entered when one or more required offsite power sources are inoperable. Required Action A.1 was written for units with two qualified circuits between the offsite transmission network and the onsite Class 1E Electrical Power Distribution System. Required Action A.1 requires the performance of SR 3.8.1.1 for the required operable offsite circuit. Point Beach AC electrical sources design consists of one circuit between the offsite transmission unit's 4.16 kV safeguards buses utilizing the associated unit's X03 and X04 transformers; one circuit between the offsite transmission network and the opposite unit's 4.16 kV safeguards buses; and one standby emergency power source capable of supplying each 4.16 kV safeguards bus. Unit operation with the opposite units X03 transformer in service is acceptable, providing the 13.8 kV gas turbine generator is operating. Therefore performance of this surveillance requirement is unnecessary.	
	ITS:	**NUREG:**
	B 3.08.01	B 3.08.01
	N/A	LCO 3.08.01 COND A RA A.1

JFD Number	JFD Text
05 Rev. A	ITS LCO 3.8.1, Condition D is entered when one or more required offsite power sources to one or more Class 1E 4.16 kV bus(es) is inoperable. Required Action D.1, requires declaring required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable. The Completion Time associated with this Required Action has been changed from 24 hours to 12 hours from discovery of entry into the Condition concurrent with inoperable redundant required feature(s). CTS 15.3.0.D describes how a system, subsystem, train, component or device's operability is determined when either its emergency AC power or normal AC power source is inoperable. When a system, subsystem, train, component or device redundant to one associated with the inoperable AC source is discovered inoperable, the CTS requires entry into the ACTIONS for both redundant systems, subsystems, trains, components or devices being inoperable. The 12 hour Completion Time provides a reasonable time to restore the feature or AC source to OPERABLE status commensurate with the level of degradation of plant systems.

ITS:	NUREG:
B 3.08.01	B 3.08.01
LCO 3.08.01 COND D RA D.1	LCO 3.08.01 COND A RA A.2

JFD Number	JFD Text
06 Rev. A	The brackets have been removed and the proper plant specific information has been provided. TSTF-8, which deletes a portion of the Notes modifying NUREG 1431, SR 3.8.1.8, SR 3.8.1.12 and SR 3.8.1.17, is essentially incorporated by the deletion of these surveillance requirements.

ITS:	NUREG:
B 3.08.01	B 3.08.01
LCO 3.08.01 COND D RA D.2	LCO 3.08.01 COND A RA A.3
LCO 3.08.01 COND E RA E.2.1	LCO 3.08.01 COND B RA B.3.1
LCO 3.08.01 COND E RA E.2.2	LCO 3.08.01 COND B RA B.3.2
LCO 3.08.01 COND E RA E.3	LCO 3.08.01 COND B RA B.4
LCO 3.08.01 COND F	LCO 3.08.01 COND D
LCO 3.08.01 COND F RA F.1	LCO 3.08.01 COND D RA D.1
LCO 3.08.01 COND F RA F.2	LCO 3.08.01 COND D RA D.2
LCO 3.08.01 COND G RA G.1	LCO 3.08.01 COND E RA E.1
N/A	LCO 3.08.01 COND F LCO 3.08.01 COND F RA F.1 SR 3.08.01.08 SR 3.08.01.08 NOTE SR 3.08.01.12 SR 3.08.01.12 NOTE 1 SR 3.08.01.12 NOTE 2 SR 3.08.01.17 SR 3.08.01.17 NOTE
SR 3.08.01.01	SR 3.08.01.01
SR 3.08.01.03	SR 3.08.01.03
SR 3.08.01.04	SR 3.08.01.06
SR 3.08.01.05	SR 3.08.01.19
SR 3.08.01.06	SR 3.08.01.16

JFD Number	JFD Text
07 Rev. A	The Completion Time of ITS LCO 3.8.1, Required Action D.2 has been changed from 72 hours to 7 days, consistent with CTS 15.3.7.B.1.f, 15.3.7.B.1.g and 15.3.7.B.1.h which allow continued operation for up to 7 days, provided the redundant engineered safety features are operable. Additionally, the second Completion Time of Required Action D.2 has been changed from "6 days" to "14 days," to maintain the Basis of the Completion Time, i.e., concurrent entry into Conditions D and E.

ITS:	NUREG:
B 3.08.01	B 3.08.01
LCO 3.08.01 COND D RA D.2	LCO 3.08.01 COND A RA A.3

JFD Number	JFD Text
08 Rev. A	ITS LCO 3.8.1, Condition E has been modified by the adoption of a Note allowing separate condition entry for each inoperable required standby emergency power source. This is acceptable because the Required Actions for this Condition provide appropriate compensatory actions for each inoperable power supply, while the combination of Condition E and Condition F dictates which combinations of buses with inoperable power sources are allowed for 7 days versus 2 hours.

ITS:	NUREG:
B 3.08.01	B 3.08.01
LCO 3.08.01 COND E NOTE	N/A

JFD Number	JFD Text
09 Rev. A	NUREG 1431 LCO 3.8.1, Required Action B.1 has not been retained in ITS. Condition B is entered when one or more required standby emergency power sources are inoperable. Required Action B.1 was written for units with two qualified circuits between the offsite transmission network and the onsite Class 1E Electrical Power Distribution System and two DGs capable of supplying the onsite Class 1E Electrical Power Distribution System. Required Action B.1 requires the performance of SR 3.8.1.1 for the required operable offsite circuit, to ensure a highly reliable power source remains with an inoperable DG. Point Beach AC electrical sources design consists of one circuit between the offsite transmission unit's 4.16 kV safeguards buses utilizing the associated unit's X03 and X04 transformers; one circuit between the offsite transmission network and the opposite unit's 4.16 kV safeguards buses; and one standby emergency power source capable of supplying each 4.16 kV safeguards bus. Therefore performance of this surveillance requirement is unnecessary.

ITS:	NUREG:
B 3.08.01	B 3.08.01
N/A	LCO 3.08.01 COND B RA B.1

JFD Number	JFD Text
10 Rev. A	ITS LCO 3.8.1, Condition E has been modified by the addition of Required Action E.2.3. Condition E is entered when one or more required standby emergency power source(s) are inoperable. Required Actions E.2.1 and E.2.2 require determining other standby emergency power sources are not inoperable due to common mode failure or performing SR 3.8.1.2 (start of standby emergency power source) within 24 hours. The addition of Required Action E.2.3 requires declaring other standby emergency power sources inoperable, in the event of a failure to complete Required Actions E.2.1 and E.2.2. Declaring the standby emergency power source inoperable is consistent with the CTS requirements for failure to start a standby emergency power source.

ITS:	NUREG:
B 3.08.01	B 3.08.01
LCO 3.08.01 COND E RA E.2.3	N/A

JFD Number	JFD Text
11 Rev. A	The Completion Time of ITS LCO 3.8.1, Required Action E.3 has been changed from 72 hours to 7 days, consistent with CTS 15.3.7.B.1.f, 15.3.7.B.1.g and 15.3.7.B.1.h which allow continued operation for up to 7 days, provided the redundant engineered safety features are operable. Additionally, the second Completion Time of Required Action E.3 has been changed from "6 days" to "14 days," to maintain the Basis of the Completion Time, i.e., concurrent entry into Conditions D and E.

ITS:	NUREG:
B 3.08.01	B 3.08.01
LCO 3.08.01 COND E RA E.3	LCO 3.08.01 COND B RA B.4

JFD Number	JFD Text
12 Rev. B	NUREG 1431 LCO 3.8.1, Condition C has not been retained in ITS. Condition C addresses the loss of two offsite circuits. Point Beach design incorporates the following AC electrical power sources: one circuit between the offsite transmission network and the associated unit's 4.16 kV Class 1E safeguards buses, A05 and A06, utilizing the associated unit's X03 and X04 transformers; one circuit between the offsite transmission network and the opposite unit's 4.16 kV Class 1E safeguards buses, A05 and A06; and one standby emergency power source capable of supplying each 4.16 kV Class 1E safeguards bus. Therefore Condition C does not apply. Incorporation of these changes also results in the re-lettering/re-numbering of subsequent Conditions and Required Actions.

ITS:	NUREG:
B 3.08.01	B 3.08.01
LCO 3.08.01 COND F	LCO 3.08.01 COND D N/A
LCO 3.08.01 COND F RA F.1	LCO 3.08.01 COND D RA D.1
LCO 3.08.01 COND F RA F.1 NOTE	LCO 3.08.01 COND D RA D.1 NOTE
LCO 3.08.01 COND F RA F.2	LCO 3.08.01 COND D RA D.2
LCO 3.08.01 COND G	LCO 3.08.01 COND E
LCO 3.08.01 COND G RA G.1	LCO 3.08.01 COND E RA E.1
LCO 3.08.01 COND H	LCO 3.08.01 COND G
LCO 3.08.01 COND H RA H.1	LCO 3.08.01 COND G RA G.1
LCO 3.08.01 COND H RA H.2	LCO 3.08.01 COND G RA G.2
N/A	LCO 3.08.01 COND C LCO 3.08.01 COND C RA C.1 LCO 3.08.01 COND C RA C.2 LCO 3.08.01 COND D LCO 3.08.01 COND D RA D.1 LCO 3.08.01 COND D RA D.1 NOTE LCO 3.08.01 COND D RA D.2

JFD Number	JFD Text
13 Rev. A	Bases associated with LCO 3.8.1 have been modified by the addition of Table B 3.8.1-1. Table B 3.8.1-1 provides a listing of Inoperable Equipment with the accompanying Conditions that are required to be entered. This Table is provided as a guide to assist operators in the determination of the appropriate Conditions to enter given a set of equipment inoperabilities.

ITS:	NUREG:
B 3.08.01	B 3.08.01

JFD Number	JFD Text
14 Rev. A	NUREG 1431 LCO 3.8.1, Condition H has not been retained in ITS. Condition H addresses the loss of three or more AC sources. Point Beach design incorporates the following AC electrical power sources: one circuit between the offsite transmission network and the associated unit's 4.16 kV Class 1E safeguards buses, A05 and A06, utilizing the associated unit's X03 and X04 transformers; one circuit between the offsite transmission network and the opposite unit's 4.16 kV Class 1E safeguards buses, A05 and A06; and one standby emergency power source capable of supplying each 4.16 kV Class 1E 4.16 kV safeguards bus. Therefore Condition H does not apply.

ITS:	NUREG:
B 3.08.01	B 3.08.01
N/A	LCO 3.08.01 COND H LCO 3.08.01 COND H RA H.1

JFD Number	JFD Text
15 Rev. A	SR 3.8.1.2 Note 1 has not been retained in ITS and Note 3 has been modified. Note 1 allows the performance of SR 3.8.1.7 to satisfy SR 3.8.1.2. NUREG 1431, SR 3.8.1.7 has not been retained in ITS. Point Beach current licensing basis does not require verification of the standby emergency power source to be ready to accept load in 10 seconds. Note 3 refers to a start involving idling and gradual acceleration to synchronous speed. This note has been modified to remove the reference to SR 3.8.1.7, which has not been adopted. Deleting Note 1 also results in the re-numbering of subsequent SR 3.8.1.2 Notes. Additionally, because SR 3.8.1.2, Note 1, has not been retained in ITS, TSTF-253, which deletes SR 3.8.1.2, Note 1, is effectively incorporated.

ITS:	NUREG:
B 3.08.01	B 3.08.01
N/A	SR 3.08.01.02 NOTE 1
SR 3.08.01.02 NOTE 1	SR 3.08.01.02 NOTE 2
SR 3.08.01.02 NOTE 2	SR 3.08.01.02 NOTE 3

JFD Number	JFD Text
16 Rev. A	NUREG 1431, Table 3.8.1-1 has not been retained in ITS. Furthermore the Frequencies associated with SR 3.8.1.2 and SR 3.8.1.3 have been changed from "As specified in Table 3.8.1-1" to "31 days". Point Beach current technical specifications do not require increased frequency of performance for DG testing based on past performance of DG testing. The Frequency of 31 days is consistent with the current Point Beach requirements for standby emergency power source testing.

ITS:	NUREG:
B 3.08.01	B 3.08.01
N/A	LCO 3.08.01 T 3.08.01-01 LCO 3.08.01 T 3.08.01-01 FN A
SR 3.08.01.02	SR 3.08.01.02
SR 3.08.01.03	SR 3.08.01.03

JFD Number	JFD Text
17 Rev. A	SR 3.8.1.2 has been modified by removing the voltage and frequency ratings. The voltage limits are dependent on a number of factors including bus loading and cable routing, which may be frequently revised in accordance with various design changes. Similarly, frequency limits are dependent on various factors (such as the "droop" setting) specific to each test condition. Further, since neither the voltage or frequency values are specified in the current Technical Specifications, the voltage and frequency limits for the AC Sources are proposed to be identified in other licensee controlled documents. Changes to plant procedures and other plant controlled documents are subject to controls imposed by plant administrative procedures, which endorse applicable regulations and standards.

ITS:	NUREG:
SR 3.08.01.02	SR 3.08.01.02

JFD Number	JFD Text
18 Rev. A	SR 3.8.1.3 Note 1 has been modified by the deletion of "as recommended by the manufacturer." Point Beach DG design does not incorporate "gradual acceleration" on a DG start. However, because there is no stated prohibition to gradual loading, and the surveillance itself does not impose and loading-rate criteria, this Note is retained as revised to allow more flexibility.

ITS:	NUREG:
B 3.08.01	B 3.08.01
SR 3.08.01.03 NOTE 1	SR 3.08.01.03 NOTE 1

JFD Number	JFD Text
19 Rev. A	SR 3.8.1.3 Note 3 has not been retained in ITS. This note imposes a restriction on DG testing that does not currently exist at Point Beach. This change also results in the re-numbering of the subsequent Note within SR 3.8.1.3.

ITS:	NUREG:
B 3.08.01	B 3.08.01
N/A	SR 3.08.01.03 NOTE 3
SR 3.08.01.03 NOTE 3	SR 3.08.01.03 NOTE 4

JFD Number	JFD Text
20 Rev. A	The following NUREG 1431 surveillance requirements have not been retained in ITS: SR 3.8.1.4, SR 3.8.1.5, SR 3.8.1.7, SR 3.8.1.9, SR 3.8.1.10, SR 3.8.1.11, SR 3.8.1.13, SR 3.8.1.14, SR 3.8.1.15, SR 3.8.1.18 and SR 3.8.1.20. This has also resulted in the renumbering of subsequent retained surveillance requirements. TSTF-163, which modifies SR 3.8.1.7, SR 3.8.1.12, SR 3.8.1.15 and SR 3.8.1.20 and associated bases, has not been incorporated. TSTF-8, which deletes a portion of the Notes modifying SR 3.8.1.8, SR 3.8.1.12 and SR 3.8.1.17, is essentially incorporated by the deletion of these surveillance requirements. SR 3.8.1.4 and SR 3.8.1.5 - The requirement to check for and remove accumulated water and sediment from the fuel oil tanks is not included because these SRs do not directly indicate that the DG is incapable of performing its safety function. Further these surveillance requirements are not contained in Point Beach's current Technical Specifications. Additionally, fuel oil quality is maintained in accordance with LCO 3.8.3. SR 3.8.1.7, SR 3.8.1.9, SR 3.8.1.10, SR 3.8.1.11, SR 3.8.1.13, SR 3.8.1.14, SR 3.8.1.15, SR 3.8.1.18 and SR 3.8.1.20 - Point Beach licensing basis requires the standby emergency power sources be capable of supplying the necessary power to ESF systems in the event of a DBA coincident with a loss of offsite power. This capability is verified during the performance of ITS SR 3.8.1.5.

ITS:	NUREG:
B 3.08.01	B 3.08.01
N/A	SR 3.08.01.04
	SR 3.08.01.05
	SR 3.08.01.07
	SR 3.08.01.07 NOTE
	SR 3.08.01.09
	SR 3.08.01.09 NOTE 1
	SR 3.08.01.09 NOTE 2
	SR 3.08.01.10
	SR 3.08.01.10 NOTE
	SR 3.08.01.11
	SR 3.08.01.11 NOTE 1
	SR 3.08.01.11 NOTE 2
	SR 3.08.01.13
	SR 3.08.01.13 NOTE
	SR 3.08.01.14
	SR 3.08.01.14 NOTE 1
	SR 3.08.01.14 NOTE 2
	SR 3.08.01.15

JFD Number	JFD Text	
	N/A	SR 3.08.01.15 NOTE 1
		SR 3.08.01.15 NOTE 2
		SR 3.08.01.18
		SR 3.08.01.18 NOTE
		SR 3.08.01.20
		SR 3.08.01.20 NOTE
	SR 3.08.01.03 NOTE 3	SR 3.08.01.03 NOTE 4
	SR 3.08.01.04	SR 3.08.01.06
	SR 3.08.01.05	SR 3.08.01.19
	SR 3.08.01.06	SR 3.08.01.16
21 Rev. A	ITS SR 3.8.1.5 has been revised by the deletion of the 10 second time requirement for the standby emergency power source to energize the permanently connected loads. Point Beach current licensing basis does not require this verification.	
	ITS:	**NUREG:**
	SR 3.08.01.05	SR 3.08.01.19
22 Rev. A	ITS SR 3.8.1.5 has been modified to reflect the Point Beach standby emergency power source design that incorporates "load logic and" sequencer.	
	ITS:	**NUREG:**
	SR 3.08.01.05	SR 3.08.01.19
23 Rev. A	ITS SR 3.8.1.5 has been modified by removing the voltage and frequency ratings. The voltage limits are dependent on a number of factors including bus loading and cable routing, which may be frequently revised in accordance with various design changes. Similarly, frequency limits are dependent on various factors (such as the "droop" setting) specific to each test condition. Further, since neither the voltage or frequency values are specified in the current Technical Specifications, the voltage and frequency limits for the AC Sources are proposed to be identified in other licensee controlled documents. Changes to plant procedures and other plant controlled documents are subject to controls imposed by plant administrative procedures, which are based on applicable regulations and standards.	
	ITS:	**NUREG:**
	SR 3.08.01.05	SR 3.08.01.19

Justification For Deviations - NUREG-1431 Section 3.08.01

21-Jul-00

JFD Number	JFD Text	
24 Rev. A	Point Beach was constructed and licensed prior to the General Design Criteria (GDC) of 10 CFR 50 Appendix A being issued. The Point Beach construction permit was issued prior to the GDCs being issued in 1971. Point Beach was designed and constructed utilizing the 1967 proposed GDCs. Accordingly, NUREG 1431 LCO 3.8.1 and associated Bases discussions have been modified to reflect Point Beach design basis and the plant specific nomenclature.	
	ITS:	**NUREG:**
	B 3.08.01	B 3.08.01
25 Rev. A	LCO 3.8.1 Bases contain two references to the FSAR for Design Basis Accidents. The Point Beach FSAR contains this same information in a single FSAR chapter, therefore only a single reference is used in the proposed ITS. Deleting Reference 4 also results in the re-numbering of subsequent references.	
	ITS:	**NUREG:**
	B 3.08.01	B 3.08.01

JFD Number	JFD Text
26 Rev. A	ITS SR 3.8.1.5 Bases have been revised to reflect Point Beach design and licensing basis. This test verifies all actions encountered from the loss of offsite power, including shedding of the nonessential loads and energization of the emergency buses and respective loads from the standby emergency power source. It further demonstrates the capability of the standby emergency power source to automatically achieve the required voltage and frequency within analysis limits. The standby emergency power source autostart time of 10 seconds is derived from requirements of the accident analysis to respond to a design basis large break LOCA. The Surveillance should be continued for a minimum of 5 minutes in order to demonstrate that all starting transients have decayed and stability is achieved. The requirement to verify the connection and power supply of permanent and autoconnected loads is intended to satisfactorily show the relationship of these loads to the standby emergency power source loading logic. In certain circumstances, many of these loads cannot actually be connected or loaded without undue hardship or potential for undesired operation. For instance, Emergency Core Cooling Systems (ECCS) injection valves are not desired to be stroked open, or high pressure injection systems are not capable of being operated at full flow, or residual heat removal (RHR) systems performing a decay heat removal function are not desired to be realigned to the ECCS mode of operation. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the standby emergency power source systems to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified. The Frequency of 18 months is consistent with the recommendations of Regulatory Guide 1.9, takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with standard fuel cycle lengths. For the purpose of this testing, the Standby emergency power sources must be started from standby conditions, that is, with the engine oil continuously circulated and engine temperature maintained consistent with manufacturer recommendations for standby emergency power sources. **ITS:** B 3.08.01 — **NUREG:** B 3.08.01
27 Rev. A	The Bases associated with ITS 3.8.1, Required Actions D.2 and E.3 have been revised by the deletion of, "According to Regulatory Guide 1.93 (Ref. 6)." Point Beach has not adopted the allowable outage times of Regulatory Guide 1.93 for the restoration of the required offsite or standby emergency power source(s). **ITS:** B 3.08.01 — **NUREG:** B 3.08.01

JFD Number	JFD Text
28 Rev. A	ITS LCO 3.8.1, Required Action E.1 Bases have been modified to reflect Point Beach design. The discussion regarding AFW System redundancy has been deleted.

ITS:	NUREG:
B 3.08.01	B 3.08.01

29
Rev. B

ITS SR 3.8.1.5 (NUREG 1431, SR 3.8.1.19) has been revised by the deletion of Note 1 and Revising 2. Note 1 allows all DG starts to be preceded by an engine prelube period. The standby emergency power sources are started from a standby condition whereby the diesel engine coolant and oil are being continuously circulated and temperature is being maintained consistent with manufacturer recommendations. Therefore an engine prelube period is not required. Note 2 states, "This surveillance shall not be performed in MODES 1, 2, 3, or 4. However, credit may be taken for unplanned events that satisfy the SR." The safeguards buses in both units are necessary for operation of either unit due to shared equipment powered from each unit. Normally one unit will be operating during the performance of this SR. Therefore, the note has been modified to only allow the testing with the buses associated with the Unit in Mode 5 or below. The second provision of Note 2 allows credit for unplanned events to satisfy this SR. This is not valid for Point Beach because additional monitoring equipment is needed to collect the required data. With the deletion of Note 1, Note 2 has been renumbered accordingly

TSTF-8, which deletes a portion of NUREG 1431, SR 3.8.1.19 Note 2, is essentially incorporated by this deviation.

ITS:	NUREG:
B 3.08.01	B 3.08.01
N/A	SR 3.08.01.19 NOTE 1 SR 3.08.01.19 NOTE 2

30
Rev. A

ITS 3.8.1 Bases discussion of the surveillance requirements has been modified to reflect Point Beach current licensing Bases. The SRs for demonstrating the OPERABILITY of the DGs are not necessarily in accordance with the recommendations of Regulatory Guides 1.9, 1.108, or 1.137. Specific instances of the SRs paralleling the Regulatory Guides have been annotated therein.

ITS:	NUREG:
B 3.08.01	B 3.08.01

JFD Number	JFD Text
31 Rev. A	ITS 3.8.1 Bases discussion of the surveillance requirements has been modified to reflect Point Beach current licensing Bases. Where the various SRs discuss specific voltage and frequency limitations, the following is applicable. The minimum continuous rating for safety-related electrical motors is 90% of nominal motor voltage as recommended by ANSI C50.41-1977 and NEMA MG-1. Additionally, the safety-related motors have a one-minute rating of 75% of nominal motor voltage as recommended by ANSI C50.41-1977. Therefore, under a worst case (maximum) loading condition, safeguards bus voltages must be maintained high enough to prevent the terminal voltage at any 4160 or 480 V motor from falling below 3600 / 414 V continuous (90% of nominal) or 3000 / 345 V for one-minute (75% of normal). Additionally, motor control center continuous and instantaneous voltages must be maintained above 400 V and 308 V, respectively, to ensure that 480 V Motor Control Center contactors are able to close and do not drop-out. These voltages are below the minimum continuous and instantaneous 480 V motor voltage requirements. The maximum allowable 4160 V system voltage must be low enough to ensure all connected equipment will operate properly. Motors are the most sensitive 4.16 kV and 480 V loads to high voltages. The maximum continuous rating for safety-related motors is 110% of nominal as recommended by ANSI C50.41-1977. Therefore, under a worst case (minimum) loading condition, 4160 V System voltages should be maintained low enough to remain below 110% of the ratings. The safeguards distribution system frequency must be maintained within the limits allowed by connected equipment; below the setting of overcurrent relays; and above the setting of underfrequency relays. Electrical motors are sensitive to variations in operating frequency. Equipment Technical Manuals for various 4160 V and 480 V motors have indicated motor terminal frequency must be maintained between 57 - 63 Hz, which is consistent with industry motor standards. The 57 - 63 Hz rating is also consistent with the allowable frequency ranges for other frequency sensitive non-motor loads (i.e., 480 V battery chargers). Although 63 Hz is the upper limit for motor operation to prevent motor damage, motors may not be capable of operating at 63 Hz due to circuit breaker settings. Since motor current increases with frequency, the possibility exists that circuit breakers supplying 480 V motors may trip on overcurrent if the 4160 V System is operated at elevated frequencies. Calculations performed verify that all safety-related 480 V motors will not trip on overcurrent assuming their terminal frequency does not exceed 62.4 Hz. Therefore, to ensure that connected safety-related loads do not trip on overcurrent, 4160 V System frequency must not exceed 62.4 Hz. **ITS:** B 3.08.01 — **NUREG:** B 3.08.01
32 Rev. A	ITS SR 3.8.1.2 Bases description has been modified by deleting reference to the 10 second start requirement. Point Beach current licensing basis does not require verification of the capability of the standby emergency power sources to start and accept load within 10 seconds. **ITS:** B 3.08.01 — **NUREG:** B 3.08.01

JFD Number	JFD Text	
33 Rev. A	ITS SR 3.8.1.3 Bases have been modified to reflect the standby emergency power source load range specified in SR 3.8.1.3. This range does not correlate to the maximum expected accident load. Point Beach current licensing basis does not require the standby emergency power sources to be loaded to this value. The load band is provided to avoid routine overloading of the standby emergency power source. Routine overloading may result in more frequent inspections in accordance with vendor recommendations in order to maintain standby emergency power source OPERABILITY.	
	ITS:	**NUREG:**
	B 3.08.01	B 3.08.01
34 Rev. A	ITS SR 3.8.1.4 Bases discussion has been modified to reflect Point Beach design basis that includes standby emergency power sources that have an engine mounted sump and standby emergency power sources that do not have an engine mounted sump. Therefore the Bases states the SR demonstrates that each required fuel oil transfer pump operates and transfers fuel oil from its associated storage tank to its associated day tank "and engine mounted sump as applicable."	
	ITS:	**NUREG:**
	B 3.08.01	B 3.08.01
35 Rev. A	ITS SR 3.8.1.4 Bases discussion has been modified to reflect Point Beach design. The design of fuel transfer systems is such that pumps and valves operate automatically to maintain an adequate volume of fuel oil in the day and engine mounted sump tanks during or following standby emergency source testing.	
	ITS:	**NUREG:**
	B 3.08.01	B 3.08.01
36 Rev. A	ITS SR 3.8.1.6 Bases discussion has been modified to reflect Point Beach licensing basis. The verification that the standby emergency power sources will synchronize with offsite power source while loaded with emergency loads upon a simulated restoration of the offsite power and transfer the loads to offsite power source and return to the ready to load condition follows the recommendations of Regulatory Guide 1.9.	
	ITS:	**NUREG:**
	B 3.08.01	B 3.08.01
37 Rev. A	ITS SR 3.8.1.6 Bases description has been modified to reflect Point Beach design. The surveillance ensures the manual synchronization of the standby emergency power source with offsite power source, though not necessarily "automatic" load transfer.	
	ITS:	**NUREG:**
	B 3.08.01	B 3.08.01

Justification For Deviations - NUREG-1431 Section 3.08.01

21-Jul-00

JFD Number	JFD Text
38 Rev. A	ITS SR 3.8.1.6 (NUREG 1431, SR 3.8.1.16) has been revised by the deletion of the Note stating, "This surveillance shall not be performed in MODES 1, 2, 3, or 4. However, credit may be taken for unplanned events that satisfy the SR." This Note is not valid for Point Beach. The safeguards buses in both units are necessary for operation of either unit due to shared equipment powered from each unit. Normally one unit will be operating during the performance of this SR. Therefore the restriction that prohibits performance of this SR in MODES 1, 2, 3, and 4 is not valid for Point Beach. The second provision of Note 2 allows credit for unplanned events to satisfy this SR. This is not valid for Point Beach because additional monitoring equipment is needed to collect the required data. TSTF-8, which deletes a portion of the Note modifying NUREG 1431, SR 3.8.1.16, is essentially incorporated by this deviation.

ITS:	NUREG:
B 3.08.01	B 3.08.01
N/A	SR 3.08.01.16 NOTE

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources–Operating

LCO 3.8.1 The following AC electrical sources shall be OPERABLE:

1 Replace with Insert 3.8.1-1

a. Two qualified circuits between the offsite transmission network and the onsite Class 1E AC Electrical Power Distribution System; [and]

b. Two diesel generators (DGs) capable of supplying the onsite Class 1E power distribution subsystem(s)[; and

c. Automatic load sequencers for Train A and Train B].

B RAI 3.8.1-8

2 Insert 3.8.1-2, Conditions A,B,C

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A One [required] offsite circuit inoperable.	~~A.1 Perform SR 3.8.1.1 for [required] OPERABLE offsite circuit.~~	~~1 hour~~ ~~AND~~ ~~Once per 8 hours thereafter~~ 4
2 D One or more required offsite power sources to one or more required Class 1E 4.16 kV bus(es) inoperable.	~~AND~~ A.2 Declare required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable.	5 12 24 hours from discovery of no offsite power to one train concurrent with inoperability of redundant required feature(s)
1 Declare required feature(s) supported by the inoperable required offsite power source inoperable when its required redundant feature(s) is inoperable.	2 D.1	Condition D 1
	AND	(continued)

power source to one or more Class 1E 4.16 kV bus(es)

Standby emergency power inoperable to redundant equipment

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One [required] offsite circuit inoperable. AND One [required] DG inoperable.	----------NOTE---------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems–Operating," when Condition D is entered with no AC power source to any train. ----------	
Standby emergency power to buses A05 and A06 on the same unit inoperable. OR Standby emergency power to buses 1A05 and 2A06 inoperable.	D.1 Restore [required] offsite circuit to OPERABLE status. OR D.2 Restore [required] DG to OPERABLE status.	12 hours 12 hours
Two [required] DGs inoperable.	E.1 Restore one [required] DG to OPERABLE status.	2 hours

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
~~SR 3.8.1.18~~ ~~----------NOTE---------- This Surveillance shall not be performed in MODE 1, 2, 3, or 4. However, credit may be taken for unplanned events that satisfy this SR. ----------~~ ~~Verify interval between each sequenced load block is within ± [10% of design interval] for each emergency [and shutdown] load sequencer.~~	~~[18 months]~~ 20
SR 3.8.1.19 20 5 ~~----------NOTES---------- 1. All DG starts may be preceded by an engine prelube period.~~ ~~2. This Surveillance shall not be performed in MODE 1, 2, 3, or 4. However, credit may be taken for unplanned events that satisfy this SR.~~ 29 ---------- Verify on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ESF actuation signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; and c. DG auto-starts from standby condition and: 1. energizes permanently connected loads ~~in ≤ [10] seconds.~~ 21	29 with the associated unit 6 18 months [18 months] B RAI 3.8.1-13

1 standby emergency power source

(continued)

3.8.1-2 (continued)

C. Associated unit's required offsite power source to buses A05 and A06 inoperable. OR Required offsite power source to buses 1A05 and 2A06 inoperable.	C.1 Restore required offsite power source(s) to OPERABLE status.	24 hours

3.8.1-4

Note used.

B

RAI 3.8.1-6

3.8.1-4

	OR E.2.3 Declare other required standby emergency power source(s) inoperable.	24 hours

3.8.1-5

Not used.

B

RAI 3.6.1-9

BASES

APPLICABILITY (continued)

a. Acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of AOOs or abnormal transients; and

b. Adequate core cooling is provided and containment OPERABILITY and other vital functions are maintained in the event of a postulated DBA.

The AC power requirements fo r MODES 5 and 6 are covered in LCO 3.8.2, "AC Sources-Shutdown.

ACTIONS

Insert B 3.8.1-3 (2)

A.1

~~To ensure a highly reliable power source remains with one offsite circuit inoperable, it is necessary to verify the OPERABILITY of the remaining required offsite circuit on a more frequent basis. Since the Required Action only specifies "perform," a failure of SR 3.8.1.1 acceptance criteria does not result in a Required Action not met. However, if a second required circuit fails SR 3.8.1.1, the second offsite circuit is inoperable, and Condition C, for two offsite circuits inoperable, is entered.~~

(4)

~~[Reviewer's Note: The turbine driven auxiliary feedwater pump is only required to be considered a redundant required feature, and, therefore, required to be determined OPERABLE by this Required Action, if the design is such that the remaining OPERABLE motor or turbine driven auxiliary feedwater pump(s) is not by itself capable (without any reliance on the motor driven auxiliary feedwater pump powered by the emergency bus associated with the inoperable diesel generator) of providing 100% of the auxiliary feedwater flow assumed in the safety analysis.]~~

(2) → D.1 → A.2

Replace with Insert B 3.8.1-4 (1)

Required Action A.2, which only applies if the train cannot be powered from an offsite source, is intended to provide assurance that an event coincident with a single failure of the associated DG will not result in a complete loss of safety function of critical redundant required features. These features are powered from the redundant AC electrical

(B) RAI 3.8.1-8

BASES

ACTIONS (continued)

Replace with Insert B 3.8.1-4

1

power train. This includes motor driven auxiliary feedwater pumps. Single train systems, such as turbine driven auxiliary feedwater pumps, may not be included.

The Completion Time for Required Action A.2 is intended to allow the operator time to evaluate and repair any discovered inoperabilities. This Completion Time also allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." In this Required Action, the Completion Time only begins on discovery that both:

D.1 2

safeguards bus 1

a. The train has no offsite power supplying it loads; and

b. A required feature on the other train is inoperable.

2 D A ~~(one~~ 1

1 ~~offsite circuit inoperable)~~ a redundant required feature subsequently becomes inoperable, this Completion Time begins to be tracked.

safeguards bus 1

B RAI 3.8.1-20 redundant

Discovering no offsite power to one train of the onsite Class 1E Electrical Power Distribution System coincident with one or more inoperable required support or supported features, or both, ~~that are associated with the other train~~ 5

1 ~~that has offsite power,~~ results in starting the Completion Times for the Required Action. Twenty-four hours is acceptable because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown.

Twelve 1

safeguards bus(es)' offsite power supplies and standby emergency power sources

The remaining OPERABLE offsite circuit and DGs are adequate to supply electrical power to Train A and Train B of the onsite Class 1E Distribution System. The 24 hour Completion Time takes into account the component OPERABILITY of the redundant counterpart to the inoperable required feature. Additionally, the 24 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

12 5 12

2 D.2 A.3

27

~~According to Regulatory Guide 1.93 (Ref. 6),~~ operation may

BASES

ACTIONS (continued)

a. An inoperable DG exists; and

b. A required feature ~~on the other train~~ ~~(Train A or Train~~ ~~B)~~ is inoperable.

RAI 3.8.1-20

If at any time during the existence of this Condition ~~(one~~ ~~DG inoperable)~~ a required feature subsequently becomes inoperable, this Completion Time would begin to be tracked.

Discovering one required DG inoperable coincident with one or more inoperable required support or supported features, or both, that are associated with the OPERABLE DG, results in starting the Completion Time for the Required Action. Four hours from the discovery of these events existing concurrently is acceptable because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown.

In this Condition, the remaining OPERABLE DG and offsite circuits are adequate to supply electrical power to the onsite Class 1E Distribution System. Thus, on a component basis, single failure protection for the required feature's function may have been lost; however, function has not been lost. The 4 hour Completion Time takes into account the OPERABILITY of the redundant counterpart to the inoperable required feature. Additionally, the 4 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

E.2.1, E.2.2 and E.2.3 → B.3.1 and B.3.2

Required Action B.3.1 provides an allowance to avoid unnecessary testing of OPERABLE DG(s). If it can be determined that the cause of the inoperable DG does not exist on the OPERABLE DG, SR 3.8.1.2 does not have to be performed. If the cause of inoperability exists on other DG(s), the other DG(s) would be declared inoperable upon discovery and Condition E of LCO 3.8.1 would be entered. Once the failure is repaired, the common cause failure no longer exists, and Required Action B.3.1 is satisfied. If the cause of the initial inoperable DG cannot be confirmed not to exist on the remaining DG(s), performance of SR 3.8.1.2 suffices to provide assurance of continued

BASES

ACTIONS (continued)

12 ~~only one offsite source is restored within 24 hours, power operation continues in accordance with Condition A.~~

2 F D.1 and D.2

B RAI 3.8.1-9

Pursuant to LCO 3.0.6, the Distribution System ACTIONS would not be entered even if all AC sources to it were inoperable, resulting in de-energization. Therefore, the Required Actions of Condition D are modified by a Note to indicate that when Condition D is entered with no AC source to any train, the Conditions and Required Actions for LCO 3.8.9, "Distribution Systems-Operating," must be immediately entered. This allows Condition D to provide requirements for the loss of one offsite circuit and one DG without regard to whether a train is de-energized. LCO 3.8.9 provides the appropriate restrictions for a de-energized train.

Class 1E 4.16 kV bus

1

power source to one or more Class 1E 4.16 kV bus(es)

1 required standby emergency power source

2 F According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition D for a period that should not exceed 12 hours.

B RAI 3.8.1-9

D In Condition D individual redundancy is lost in both the offsite electrical power system and the onsite AC electrical power system. Since power system redundancy is provided by two diverse sources of power, however, the reliability of the power systems in this Condition may appear higher than that in Condition C (loss of both required offsite circuits). This difference in reliability is offset by the susceptibility of this power system configuration to a single bus or switching failure. The 12 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

power sources

1

B RAI 3.8.1-9

12 G.1 E.1

1 standby emergency power source

Replace with Insert B 3.8.1-6

1

With Train A and Train B DGs inoperable, there are no remaining standby AC sources. Thus, with an assumed loss of offsite electrical power, insufficient standby AC sources are available to power the minimum required ESF functions. Since the offsite electrical power system is the only source of AC power for this level of degradation, the risk associated with continued operation for a very short time

BASES

ACTIONS (continued)

could be less than that associated with an immediate controlled shutdown (the immediate shutdown could cause grid instability, which could result in a total loss of AC power). Since any inadvertent generator trip could also result in a total loss of offsite AC power, however, the time allowed for continued operation is severely restricted. The intent here is to avoid the risk associated with an immediate controlled shutdown and to minimize the risk associated with this level of degradation.

According to Reference 6, ~~with both DGs inoperable,~~ 1 operation may continue for a period that should not exceed 2 hours.

B RAI 3.8.1-9

[F.1

The sequencer(s) is an essential support system to [both the offsite circuit and the DG associated with a given ESF bus]. [Furthermore, the sequencer is on the primary success path for most major AC electrically powered safety systems powered from the associated ESF bus.] Therefore, loss of an [ESF bus sequencer] affects every major ESF system in the [division]. The [12] hour Completion Time provides a period of time to correct the problem commensurate with the importance of maintaining sequencer OPERABILITY. This time period also ensures that the probability of an accident (requiring sequencer OPERABILITY) occurring during periods when the sequencer is inoperable is minimal.

6 This Condition is preceded by a Note that allows the Condition to be deleted if the unit design is such that any sequencer failure mode will only affect the ability of the associated DG to power its respective safety loads under any conditions. Implicit in this Note is the concept that the Condition must be retained if any sequencer failure mode results in the inability to start all or part of the safety loads when required, regardless of power availability, or results in overloading the offsite power circuit to a safety bus during an event and thereby causes its failure. Also implicit in the Note, is that the Condition is not applicable to any train that does not have a sequencer.]

BASES

SURVEILLANCE REQUIREMENTS (continued)

20 ~~c. Performance of the SR, or failure of the SR, will not cause, or result in, an AOO with attendant challenge to plant safety systems.]~~

1 SR 3.8.1.19 5 6

standby emergency power source

In the event of a DBA coincident with a loss of offsite power, the DGs are required to supply the necessary power to ESF systems so that the fuel, RCS, and containment design limits are not exceeded.

standby emergency power source 1

This Surveillance demonstrates the DG operation, as 20 20 ~~discussed in the Bases for SR 3.8.1.11,~~ during a loss of offsite power actuation test signal in conjunction with an ESF actuation signal. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the DG system to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

Replace with Insert B 3.8.1-10. 26

The Frequency of [18 months] takes into consideration unit conditions required to perform the Surveillance and is intended to be consistent with an expected fuel cycle length of [18 months].

B RAI 3.8.1-13

a This SR is modified by two Notes. The reason for Note 1 is to minimize wear and tear on the DGs during testing. For the purpose of this testing, the DGs must be started from standby conditions, that is, with the engine coolant and oil continuously circulated and temperature maintained consistent with manufacturer recommendations for DGs. The reason for Note 2 is that the performance of the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. Credit may be taken for unplanned events that satisfy this SR.

29 the source 1

20 ~~SR 3.8.1.20~~

~~This Surveillance demonstrates that the DG starting independence has not been compromised. Also, this Surveillance demonstrates that each engine can achieve proper speed within the specified time when the DGs are~~

Insert B 3.8.1-1 (continued):

In lieu of both diesel room exhaust fans being OPERABLE for G-03 and G-04, only the large capacity fan (W-183C for G-03, W-184B for G-04) is required to be OPERABLE when outside air temperature is < 84°F, or only the small capacity fan (W-183B for G-03, W-184C for G-04) is required to be OPERABLE when outside air temperature is ≤ 36°F.

A detailed description of the AC power distribution network is contained in FSAR, Chapter 8 (Ref. 2).

Insert B 3.8.1-2:

Qualified sources of power between the offsite transmission network, the onsite Class 1E electrical power distribution system, and separate and independent standby emergency power sources for each safeguards train ensures the availability of required power to shut down the reactor and maintain it in a safe shutdown condition after an anticipated operational occurrence (AOO) or a postulated DBA.

The following AC electrical power sources are required to be OPERABLE:

a. One circuit between the offsite transmission network and the associated unit's 4.16 kV Class 1E safeguards buses, A05 and A06, utilizing the associated unit's X03 transformer or the opposite unit's X03 transformer with the gas turbine in operation, and the associated unit's X04 transformers; and

B RAI 3.8.1-16

b. One circuit between the offsite transmission network and the opposite unit's 4.16 kV Class 1E safeguards buses, A05 and A06; and

c. One standby emergency power source capable of supplying each 4.16 kV Class 1E safeguards bus, A05 and A06.

Each of the above required offsite sources is described in detail as follows:

The source of offsite AC power between the offsite transmission network and the associated unit's 4.16 kV Class 1E safeguards buses, A05 and A06, consists of:

a. The associated unit's high voltage system auxiliary transformer, X03, supplied from 345 kV Switchyard; or, the opposite unit's X03 with the gas turbine in operation.

B RAI 3.8.1-16

b. The associated unit's low voltage station auxiliary transformer, X04;

Insert B 3.8.1-2 (continued):

c. The associated unit's 4.16 kV distribution buses, A03 and A04; and

d. All associated breakers, switches, interrupting devices, cabling, and controls required to transmit power from the Offsite 345 kV Distribution System to its respective unit's 4.16 kV safeguards buses, A05 and A06.

The offsite AC power circuit between the offsite transmission network and the opposite unit's 4.16 kV Class 1E safeguards buses, A05 and A06, consists of:

a. Either high voltage system auxiliary transformer, X03, supplied from the 345 kV Switchyard, supplying power to either unit's low voltage station auxiliary transformer, X04, the opposite unit's 4.16 kV distribution buses, A03 and A04, the associated unit's 4.16 kV distribution buses, A03 and A04 (when power is being supplied by the associated unit's low voltage station auxiliary transformer, X04); and

b. All associated breakers, switches, inte rrupting devices, cabling, and controls required to transmit power from the Offsite 345 kV Distribution System to the opposite unit's 4.16 kV safeguards buses, A05 and A06.

Each of the required offsite sources must be capable of maintaining rated frequency and voltage, and accepting required loads during an accident, while connected to the ESF buses. For the offsite AC sources, separation and independence are to the extent practical. A circuit may be connected to more than one ESF bus. Additionally, fast transfer capability of offsite power to the opposite 13.8 kV AC Power Distribution Circuit or Gas Turbine Generator does not violate separation criteria. The closing of the tie breakers into a common fault is prevented by trip and lockout interlocks in the breaker control circuits.

Each Onsite Class 1E Safeguards AC Power Distribution System must be capable of being powered from an OPERABLE standby emergency power source. Each standby emergency power source must be capable of starting, accelerating to rated speed and voltage, and connecting to its respective safeguards bus(es) on detection of undervoltage within 10 seconds. Each standby emergency power source must also be capable of accepting ESF loads within the predetermined sequence established by the ESF safeguards logic and sequence timers, and continue to operate until offsite power can be restored to the ESF buses. Sequencing of loads, is a required function for standby emergency power source OPERABILITY.

LCO 3.8.1 BASES INSERTS

Insert B 3.8.1-4:

Condition D applies when offsite power is inoperable to one or more required 4.16 kV safeguards bus(es). The Required Actions for this Condition provide appropriate compensatory actions for each inoperable power supply, while the combination of Condition C and Condition D dictates which combinations of buses with inoperable power sources are allowed for 7 days versus 24 hours.

B RAI 3.8.1-8 RAI 3.8.1-19

Required Action D.1, is intended to provide assurance that an event coincident with a single failure of the associated standby emergency power source will not result in a complete loss of safety function of critical redundant required features. These features are powered from the redundant safeguards train.

Insert B 3.8.1-5:

Condition E applies when one or more standby emergency power supplies are inoperable. Condition E contains a Note which provides clarification that, for this Condition, separate Condition entry is allowed for each inoperable standby emergency power supply. This is acceptable since the Required Actions for this Condition provide appropriate compensatory actions for each inoperable power supply, while the combination of Condition E and Condition G dictates which combinations of buses with inoperable power sources are allowed for 7 days versus 2 hours.

B RAI 3.8.1-9

B RAI 3.8.1-9

Insert B 3.8.1-6:

Required Action G.1 applies when standby emergency power to both safeguards buses on the same unit are inoperable (i.e. 1A05 and 1A06, or 2A05 and 2A06), or standby emergency power to safeguards buses 1A05 and 2A06 are inoperable.

B RAI 3.8.1-9

Insert B 3.8.1-8:

Where various SRs discussed herein specify voltage and frequency limitations, the following is applicable. The minimum continuous rating for safety-related electrical motors is 90% of nominal motor voltage as recommended by ANSI C50.41-1977 and NEMA MG-1. Additionally, the safety-related motors have a one-minute rating of 75% of nominal motor voltage as recommended by ANSI C50.41-1977. Therefore, under a worst case (maximum) loading condition, safeguards bus voltages must be maintained high enough to prevent the terminal voltage at any 4160 or 480 V motor from falling below 3600 / 414 V continuous (90% of nominal) or 3000 / 345 V for one-minute (75% of normal). Additionally, motor control center continuous and instantaneous voltages must be maintained above 400 V and 308 V, respectively, to ensure that 480 V Motor Control Center contactors are able to close and do not drop-out. These voltages are below the minimum continuous and instantaneous 480 V motor voltage requirements.

The maximum allowable 4160 V system vol tage must be low enough to ensure all connected equipment will operate properly. Motors are the most sensitive 4.16 kV and 480 V loads to high voltages. The maximum continuous rating for safety-related motors is 110% of nominal as recommended by ANSI C50.41-1977. Therefore, under a worst case (minimum) loading condition, 4160 V System voltages should be maintained low enough to remain below 110% of the ratings.

The safeguards distribution system frequency must be maintained within the limits allowed by connected equipment; below the setting of overcurrent relays; and above the setting of underfrequency relays. Electrical motors are sensitive to variations in operating frequency. Equipment Technical Manuals for various 4160 V and 480 V motors have indicated motor terminal frequency must be maintained between 57 - 63 Hz, which is consistent with industry motor standards. The 57 - 63 Hz rating is also consistent with the allowable frequency ranges for other frequency sensitive non-motor loads (i.e., 480 V battery chargers). Although 63 Hz is the upper limit for motor operation to prevent motor damage, motors may not be capable of operating at 63 Hz due to circuit breaker settings. Since motor current increases with frequency, the possibility exists that circuit breakers supplying 480 V motors may trip on overcurrent if the 4160 V System is operated at elevated frequencies. Calculations performed verify that all safety-related 480 V motors will not trip on overcurrent assuming their terminal frequency does not exceed 62.4 Hz. Therefore, to ensure that connected safety-related loads do not trip on overcurrent, 4160 V System frequency must not exceed 62.4 Hz.

LCO 3.8.1 BASES INSERTS

Insert B 3.8.1-9:

The design of fuel transfer systems is such that pumps and valves operate automatically to maintain an adequate volume of fuel oil in the day and engine mounted sump tanks during or following standby emergency source testing.

The 31 day Frequency is adequate to assure that the fuel oil transfer system is OPERABLE, since low level alarms are provided.

Insert B 3.8.1-10:

This test verifies all actions encountered from the loss of offsite power, including shedding of the nonessential loads and energization of the emergency buses and respective loads from the standby emergency power source. It further demonstrates the capability of the standby emergency power source to automatically achieve the required voltage and frequency within analysis limits.

The standby emergency power source autostart time of 10 seconds is derived from requirements of the accident analysis to respond to a design basis large break LOCA. The Surveillance should be continued for a minimum of 5 minutes in order to demonstrate that all starting transients have decayed and stability is achieved.

The requirement to verify the connection and power supply of permanent and autoconnected loads is intended to satisfactorily show the relationship of these loads to the standby emergency power source loading logic. In certain circumstances, many of these loads cannot actually be connected or loaded without undue hardship or potential for undesired operation. For instance, Emergency Core Cooling Systems (ECCS) injection valves are not desired to be stroked open, or high pressure injection systems are not capable of being operated at full flow, or residual heat removal (RHR) systems performing a decay heat removal function are not desired to be realigned to the ECCS mode of operation. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the standby emergency power source systems to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

The Frequency of 18 months is consistent with the recommendations of Regulatory Guide 1.9 (Ref. 4), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with standard fuel cycle lengths.

Insert B 3.8.1-10 (continued):

For the purpose of this testing, the standby emergency power sources must be started from standby conditions. That is, with the engine oil continuously circulated and engine temperature maintained consistent with manufacturer recommendations for standby emergency power sources.

Insert B 3.8.1-11:

Table B 3.8.1-1 (page 1 of 2)
Conditions for AC Sources Component Inoperabilities

Inoperable Equipment	Condition(s)
Inoperable standby emergency power source to 1A05, 1A06, 2A05, or 2A06. OR Inoperable standby emergency power sources to 1A05 and 2A05. OR Inoperable standby emergency power sources to 1A06 and 2A06.	Condition E
Inoperable standby emergency power source to A05 and A06 on the same unit OR Inoperable standby emergency power to 1A05 and 2A06.	Condition E AND Condition G
One or more de-energized 4.16 kV safeguards buses (1A05/2A05/1A06/2A06). OR One or more 4.16 kV safeguards buses (1A05/2A05/1A06/2A06) with inoperable standby emergency power source(s) and inoperable offsite power source(s).	Condition D AND Condition E AND Condition G OR Condition F
Inoperable offsite power source to A05 and A06 on the same unit. OR Inoperable offsite power to 1A05 and 2A06.	Condition C AND Condition D
Inoperable offsite power source to 1A05, 1A06, 2A05, or 2A06. OR Inoperable offsite sources to 1A05 and 2A05. OR Inoperable offsite sources to 1A06 and 2A06.	Condition D

B RAI 3.8.1-9

B RAI 3.8.1-9

No Significant Hazards Considerations - NUREG-1431 Section 3.08.01

24-Jul-00

NSHC Number	NSHC Text
A Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The proposed change involves reformatting and rewording of the current Technical Specifications. The reformatting and rewording process involves no technical changes to existing requirements. As such, this change is administrative in nature and does not impact initiators of analyzed events or assumed mitigation of accident or transient events. Therefore, this change does not increase the probability or consequences of an accident previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not require a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal plant operation. The proposed change will not impose any new or eliminate any old requirements. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated. 3. Does this change involve a significant reduction in a margin of safety? The proposed change will not significantly reduce the margin of safety because it has no impact on any safety analysis assumptions. This change is administrative. As such, there is no technical change to the requirements and, therefore, there is no reduction in the margin of safety.

No Significant Hazards Considerations - NUREG-1431 Section 3.08.01

24-Jul-00

NSHC Number	NSHC Text
L.01 Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. The Current Technical Specifications (CTS) describe how a system, subsystem, train, component or device's operability is determined when either its emergency AC power or normal AC power source is inoperable. When a system, subsystem, train, component or device redundant to one associated with the inoperable AC source is discovered inoperable, the CTS requires entry into the ACTIONS for both redundant systems, subsystems, trains, components or devices being inoperable. This limitation has been moved to proposed LCO 3.8.1 Required Actions for inoperable offsite circuits and inoperable DGs consistent with NUREG 1431. However, the ITS provides a limited period of time to verify redundant features are OPERABLE, as well as time to restore the component to operable status after an AC source is discovered inoperable. 12 hours has been provided if an offsite circuit is inoperable, and 4 hours if one DG is inoperable. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The AC Sources are used to support mitigation of the consequences of an accident; however, they are not initiators of any previously analyzed accident. As such, the proposed increase in the Completion Time will not increase the probability of any accident previously evaluated. The proposed actions continue to provide adequate assurance of OPERABILITY for required equipment. Therefore, this change does not involve a significant increase in the consequences of any accident previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not require a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal plant operation. The proposed change will still ensure corrective actions are taken to restore plant systems to an OPERABLE status, as assumed in the safety analysis. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated. 3. Does this change involve a significant reduction in a margin of safety? This change does not involve a significant reduction in a margin of safety, since the OPERABILITY of the equipment and loss of function continue to be evaluated in the same manner. The increase in time allowed for such an evaluation and restoration is minimal and provides additional potential for the preferred action of restoration of the equipment to OPERABLE status, rather than requiring a shutdown which could induce a plant transient.

NSHC Number	NSHC Text
L.02 Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. The inoperability of a unit's 13.8 / 4.16 kV (X04) transformer renders offsite power to the associated unit's safeguards buses inoperable. Current Technical Specifications require the reactor associated with an out of service X04 transformer to be placed in the hot shutdown condition. The proposed ITS Required Actions allow 24 hours to restore the required offsite power source to an OPERABLE status before requiring shutdown of the unit. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The AC Sources are used to support mitigation of the consequences of an accident; however, they are not initiators of any previously analyzed accident. As such, the proposed increase in the Completion Time will not increase the probability of any accident previously evaluated. The proposed actions continue to provide adequate assurance of OPERABILITY for required equipment. Therefore, this change does not involve a significant increase in the consequences of any accident previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not require a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal plant operation. The proposed change will still ensure corrective actions are taken to restore plant systems to OPERABLE status, as assumed in the safety analysis. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated. 3. Does this change involve a significant reduction in a margin of safety? This change does not involve a significant reduction in a margin of safety since the Operability of the equipment and loss of function continue to be evaluated in the same manner. The increase in time allowed for such an evaluation and restoration is minimal and provides additional potential for the preferred action of restoration of the equipment to OPERABLE status, rather than requiring a shutdown which could induce a plant transient.

NSHC Number	NSHC Text
L.03 Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. Current Technical Specifications require the redundant standby emergency power supplies be started within 24 hours of an out of service normal or standby emergency power supply, and every 72 hours thereafter. The requirement to verify the OPERABILITY of the standby emergency power supplies every 72 hours while in the LCO has not been retained in ITS. Additionally, the requirement to start the required redundant standby emergency power supply within 24 hours of an inoperable offsite power supply has not been retained in ITS. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The AC Sources are used to support mitigation of the consequences of an accident; however, they are not initiators of any previously analyzed accident. As such relaxing the requirements to verify the OPERABILITY of the standby emergency power source in the event of an out of service normal or standby emergency power supply will not increase the probability of any accident previously evaluated. The proposed actions continue to provide adequate assurance of OPERABILITY for required equipment. Therefore, this change does not involve a significant increase in the consequences of any accident previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not require a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal plant operation. The proposed change will still ensure corrective actions are taken to restore plant systems to OPERABLE status, as assumed in the safety analysis. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated. 3. Does this change involve a significant reduction in a margin of safety? This change does not involve a significant reduction in a margin of safety since the OPERABILITY of the equipment and loss of function continue to be evaluated in the same manner. Once the OPERABILITY of the standby emergency power source has been verified or shown to not to be subject to a common mode failure, it is unnecessary to revalidate this information with additional performances of the surveillance requirements.

NSHC Number	NSHC Text
L.04 Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. Current Technical Specifications allow continued operation for up to 7 days, if specific normal or standby emergency power sources are out of service, provided the required redundant engineered safety feature(s) are operable. Proposed ITS Required Actions for inoperable offsite power source(s) or standby emergency power source(s) to Class 1E 4.16 kV bus(es) require the restoration of the associated power source(s) to an OPERABLE status within 7 days. However, the proposed ITS allows 12 hours to restore any inoperable required redundant feature(s) before declaring the required feature(s) supported by the inoperable offsite power source inoperable, and 4 hours to restore any inoperable required redundant feature(s) before declaring the required feature(s) supported by the inoperable standby emergency power source inoperable. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The AC Sources are used to support mitigation of the consequences of an accident; however, they are not initiators of any previously analyzed accident. As such the proposed increase in the Completion Time will not increase the probability of any accident previously evaluated. The proposed actions continue to provide adequate assurance of OPERABILITY for required equipment and therefore, do not involve an increase in the consequences of any accident previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not require a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal plant operation. The proposed change will still ensure corrective actions are taken to restore plant systems to OPERABLE status, as assumed in the safety analysis. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated. 3. Does this change involve a significant reduction in a margin of safety? This change does not involve a significant reduction in a margin of safety since the OPERABILITY of the equipment and loss of function continue to be evaluated in the same manner. The increase in time allowed for such a evaluation and restoration is minimal and provides additional potential for the preferred action of restoration of the equipment to OPERABLE status, rather than requiring a shutdown which could induce a plant transient.

NSHC Number	NSHC Text
L.05 Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. Proposed ITS Required Actions allow 2 hours to restore standby emergency power to both safeguards buses on the same unit (i.e. 1A05 and 1A06, or 2A05 and 2A06), or standby emergency power to safeguards buses 1A05 and 2A06, before requiring unit shutdown. The Current Technical Specifications do not provide required actions for the above combinations of inoperable safeguards buses and would require entry into LCO 15.3.0.B. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The AC Sources are used to support mitigation of the consequences of an accident; however, they are not initiators of any previously analyzed accident. As such the proposed increase in the Completion Time will not increase the probability of any accident previously evaluated. The proposed actions continue to provide adequate assurance of OPERABILITY for required equipment and therefore, do not involve an increase in the consequences of any accident previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not require a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal plant operation. The proposed change will still ensure corrective actions are taken to restore plant systems to OPERABLE status, as assumed in the safety analysis. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated. 3. Does this change involve a significant reduction in a margin of safety? This change does not involve a significant reduction in a margin of safety since the OPERABILITY of the equipment and loss of function continue to be evaluated in the same manner. The increase in time allowed for such a evaluation and restoration is minimal and provides additional potential for the preferred action of restoration of the equipment to OPERABLE status, rather than requiring a shutdown which could induce a plant transient.

NSHC Number	NSHC Text
L.06 Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. Proposed ITS Required Actions allow 24 hours to restore offsite power to both safeguards buses on the same unit (i.e. 1A05 and 1A06, or 2A05 and 2A06), or offsite power to safeguards buses 1A05 and 2A06, before requiring unit shutdown. The Current Technical Specifications do not provide required actions for the above combinations of inoperable safeguards buses and would require entry into LCO 15.3.0.B. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The AC Sources are used to support mitigation of the consequences of an accident; however, they are not initiators of any previously analyzed accident. As such the proposed increase in the Completion Time will not increase the probability of any accident previously evaluated. The proposed actions continue to provide adequate assurance of Operability for required equipment and therefore, do not involve an increase in the consequences of any accident previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not require a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal plant operation. The proposed change will still ensure corrective actions are taken to restore plant systems to Operable status, as assumed in the safety analysis. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated. 3. Does this change involve a significant reduction in a margin of safety? This change does not involve a significant reduction in a margin of safety since the Operability of the equipment and loss of function continue to be evaluated in the same manner. The increase in time allowed for such a evaluation and restoration is minimal and provides additional potential for the preferred action of restoration of the equipment to Operable status, rather than requiring a shutdown which could induce a plant transient.

NSHC Number	NSHC Text
L.07 Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. CTS 15.4.6.A.2 specifies DG testing initiated by an actual interruption of normal station AC power supplies to associated engineered safety systems busses together with a simulated SI signal. ITS SR 3.8.1.5 permits an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ESF actuation signal to satisfy the SR requirements. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The AC Sources are used to support mitigation of the consequences of an accident; however, they are not initiators of any previously analyzed accident. As such the relaxing the requirements under which the DG testing is performed does not affect the results of the surveillance and will not increase the probability of any accident previously evaluated. The proposed actions continue to provide adequate assurance of Operability for required equipment and therefore, do not involve an increase in the consequences of any accident previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not require a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal plant operation. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated. 3. Does this change involve a significant reduction in a margin of safety? This change does not involve a significant reduction in a margin of safety since the Operability of the equipment continue to be evaluated in the same manner. The results of the DG testing are not affected by the nature of the initiating signal, because the system cannot discriminate whether the signals are actual or simulated. The intent of the surveillance requirement has not been altered and does not result in a reduction in the margin of safety.

NSHC Number	NSHC Text
L.08 Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. CTS 15.4.6.A.2 requires testing of the DGs to include an additional demonstration of automatic load shedding and restoration of vital loads by manually tripping the DG output breaker, after the DG has carried its load for a minimum of 5 minutes. This requirement is not being retained in the ITS. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The AC Sources are used to support mitigation of the consequences of an accident; however, they are not initiators of any previously analyzed accident. As such the relaxing the requirements under which the DG testing is performed does not affect the results of the surveillance and will not increase the probability of any accident previously evaluated. The proposed actions continue to provide adequate assurance of Operability for required equipment and therefore, do not involve an increase in the consequences of any accident previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not require a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal plant operation. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated. 3. Does this change involve a significant reduction in a margin of safety? This change does not involve a significant reduction in a margin of safety, because the feature that will no longer be tested is not relied upon in the mitigation of an analyzed accident.

NSHC Number	NSHC Text
L.09 Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. Current Technical Specifications require the a unit's 345/13.8 kV (X03) and 13.8/4.16 kV (X04) transformers to be in service, for the reactor to be made critical. In lieu of the associated unit's X03 transformer, unit operation with the opposite unit's X03 transformer in service is acceptable, providing the 13.8 kV gas turbine generator is operating. If the gas turbine is not operating when a unit's associated offsite power source becomes unavailable, entry into CTS 15.3.0.B is required until the gas turbine is started, synchronized and loaded. Proposed ITS Required Actions for an inoperable X03 transformer require verification that offsite power is supplying the associated unit's 4.16 kV safeguards buses from the opposite unit's X03 transformer, and requires that the gas turbine generator be placed in operation within 24 hours. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The AC Sources are used to support mitigation of the consequences of an accident; however, they are not initiators of any previously analyzed accident. As such the proposed increase in the Completion Time will not increase the probability of any accident previously evaluated. The proposed actions continue to provide adequate assurance of Operability for required equipment and therefore, do not involve an increase in the consequences of any accident previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not require a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal plant operation. The proposed change will still ensure corrective actions are taken to restore plant systems to Operable status, as assumed in the safety analysis. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated. 3. Does this change involve a significant reduction in a margin of safety? This change does not involve a significant reduction in a margin of safety since the Operability of the equipment and loss of function continue to be evaluated in the same manner. The increase in time allowed for such a evaluation and restoration is minimal and provides additional potential for the preferred action of restoration of the equipment to Operable status, rather than requiring a shutdown which could induce a plant transient.

NSHC Number	NSHC Text
L.10 Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. CTS 15.3.0.D requires entry into 15.3.0.B, if the offsite and emergency power sources to a safeguards bus are inoperable. Proposed ITS LCO 3.8.1, Condition G, will require entry into the applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," thereby requiring entry into the actions associated with inoperable supported equipment. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The AC Sources are used to support mitigation of the consequences of an accident; however, they are not initiators of any previously analyzed accident. As such, relaxing the required actions for loss of AC sources to a safeguards bus to be consistent with the required actions for a de-energized safeguards bus will not increase the probability of any accident previously evaluated. The proposed actions continue to provide adequate assurance of Operability for required equipment and therefore, do not involve an increase in the consequences of any accident previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not require a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal plant operation. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated. 3. Does this change involve a significant reduction in a margin of safety? Whether the safeguards bus is de-energized or all of its AC power sources are inoperable, the remaining AC electrical power distribution subsystems are capable of supporting the minimum safety functions necessary to shutdown and maintain it in a safe shutdown condition, assuming no single failure. The overall reliability is reduced, however, because a single failure in the remaining distribution subsystems could result in the minimum required ESF functions not being supported. Therefore entering the Conditions and Required Actions of LCO 3.8.9 is appropriate in either case, will ensure that the appropriate Required Actions are taken if redundant required features are inoperable, and does not result in a reduction in the margin of safety.

NSHC Number	NSHC Text
L.11 Rev. B	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The change eliminates the description in the Surveillance that the start of the standby emergency power source and synchronization to the load is done manually; and, eliminates an editorial statement that the test does not affect plant operation. The purpose of the test is to demonstrate that the standby emergency power source (EDG) is capable of starting from a standby condition and supplying rated load. This can be accomplished safely without specifying the means of testing. In addition, operational and Technical Specification requirements ensure that any impact of the testing on system operation is appropriately accounted for. Testing will continue to demonstrate that the design function of starting and supplying load is accomplished. The design function of the standby emergency power source is to supply required loads upon the loss of power to the safeguards bus. The Surveillances will continue to ensure this function is performed. Therefore, the probability of a loss of all power to safety related loads is not increased. As adequate assurance continues to be provided that the safety fuction will be performed, elimination of this information also cannot result in an increase in the consequences of any accident previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not require a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal plant operation. The changes do not result in a change in the function or method of function of the standby emergency power sources. Therefore, the change cannot result in a new or different kind of accident from any accident previously evaluated. 3. Does this change involve a significant reduction in a margin of safety? With the proposed changes, the Surveillance requirements continue to demonstrate that the standby emergency power source will start from a standby condition and is capable of supplying rated load. Therefore, the Surveillances continue to demonstrate that the standby emergency power sources are capable of meeting this aspect of their design basis. Thus, the change cannot result in a reduction in a margin of safety.

NSHC Number	NSHC Text
LA Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The proposed change relocates requirements from the Technical Specifications to the Bases, FSAR, or other plant controlled documents. The Bases and FSAR will be maintained using the provisions of 10 CFR 50.59. In addition to 10 CFR 50.59 provisions, the Technical Specifications Bases are subject to the change process in the Administrative Controls Chapter of the ITS. Plant procedures and other plant controlled documents are subject to controls imposed by plant administrative procedures, which endorse applicable regulations and standards. Changes to the Bases, FSAR, or other plant controlled documents will be evaluated in accordance with the requirements of the Bases Control Program in Chapter 5.0 of the ITS, 10 CFR 50.59, or plant administrative processes. Therefore, no increase in the probability or consequences of an accident previously evaluated will be allowed. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not require a physical alteration to the plant (no new or different type of equipment will be installed) or changes in parameters governing normal plant operation. The proposed change will not impose any different requirements and adequate control of the information will be maintained. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated. 3. Does this change involve a significant reduction in a margin of safety? The proposed change will not reduce a margin of safety because it has no impact on any safety analysis assumptions. In addition, the requirements to be moved from the Technical Specifications to the Bases, FSAR, or other plant controlled documents are as they currently exist. Future changes to the requirements in the Bases, FSAR, or other plant controlled documents will be evaluated in accordance with the requirements of 10 CFR 50.59, the Bases Control Program in Chapter 5.0 of the ITS, or the applicable plant process and no reduction in a margin of safety will be allowed.

NSHC Number	NSHC Text
M Rev. A	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The proposed change provides more restrictive requirements for operation of the facility. These more stringent requirements do not result in operation that will increase the probability of initiating an analyzed event and do not alter the assumptions relative to the mitigation of an accident or transient event. These more restrictive requirements continue to ensure process variables, structures, systems and components are maintained consistent with the safety analyses. Therefore, this change does not increase the probability or consequences of an accident previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The proposed change does not require a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal plant operation. The proposed change does impose different requirements. However, these changes are consistent with assumptions made in the safety analysis. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated. 3. Does this change involve a significant reduction in a margin of safety? The imposition of more restrictive requirements either has no affect on or increases the margin of safety. Each change is providing additional restrictions to enhance plant safety. These changes are consistent with the safety analysis. Therefore, this change does not involve a reduction in a margin of safety.

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Associated unit's required offsite power source to buses A05 and A06 inoperable. OR Required offsite power source to buses 1A05 and 2A06 inoperable.	C.1 Restore required offsite power source(s) to OPERABLE status.	24 hours
D. One or more required offsite power source(s) to one or more required Class 1E 4.16 kV bus(es) inoperable.	D.1 Declare required feature(s) supported by the inoperable required offsite power source inoperable when its required redundant feature(s) is inoperable. AND D.2 Restore required offsite power source(s) to OPERABLE status.	12 hours from discovery of Condition D concurrent with inoperability of redundant required feature(s) B RAI 3.8.1-8 7 days AND 14 days from discovery of failure to meet LCO

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. One or more required offsite power source to one or more Class 1E 4.16 kV safeguards bus(es) inoperable. AND Standby emergency power inoperable to redundant equipment.	----------NOTE---------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems – Operating," when Condition F is entered with no AC power to any train. ---------- F.1 Restore required offsite circuit to OPERABLE status. OR F.2 Restore required standby emergency power source to OPERABLE status.	 12 hours 12 hours
G. Standby emergency power to buses A05 and A06 on the same unit inoperable. OR Standby emergency power to buses 1A05 and 2A06 inoperable.	G.1 Restore one required standby emergency power source to OPERABLE status.	2 hours
H. Required Action and associated Completion Time not met.	H.1 Be in MODE 3. AND H.2 Be in MODE 5.	6 hours 36 hours

B
RAI 3.8.1-9

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.5	----------NOTE---------- This surveillance shall not be performed with the associated unit in MODE 1, 2, 3, or 4. ---------- Verify on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ESF actuation signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; and c. Standby emergency power source auto-starts from standby condition and: 1. energizes permanently connected loads, 2. energizes auto-connected emergency loads through load logic and sequencer, 3. achieves steady state voltage within limits, 4. achieves steady state frequency within limits, and 5. supplies permanently connected and auto-connected emergency loads for ≥ 5 minutes.	18 months
SR 3.8.1.6	Verify each standby emergency power source: a. Synchronizes with offsite power source while loaded with emergency loads upon a simulated restoration of offsite power; b. Transfers loads to offsite power source; and c. Returns to ready-to-load operation.	18 months

B
RAI 3.8.1-13

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.1 AC Sources - Operating

BASES

BACKGROUND

The unit Class 1E AC Electrical Power Distribution System AC sources consist of; the preferred normal offsite power source, and the onsite standby emergency power sources. As required by the Point Beach Design Criteria (Ref. 1), the design of the AC electrical power system provides independence and redundancy to ensure an available source of power to the Engineered Safety Feature (ESF) systems.

The Class 1E AC Distribution System is divided into two redundant load groups (safeguards buses) so that the loss of any one group does not prevent a safety function from being performed. Each safeguards bus has connections to the normal offsite power source and a standby emergency power source.

Offsite power is supplied to the switchyard from the offsite transmission network by four transmission lines. From the switchyard, two separate circuits provide AC power through high voltage (345/13.8 kV) station auxiliary transformers 1X03 and 2X03 to the 13.8 kV distribution network. The 13.8 kV distribution network is divided into three buses designated; H01, H02, and H03. The high voltage station auxiliary transformers 1X03 and 2X03, are the normal supplies to the 13.8 kV network, directly supplying buses H02 and H03, respectively. A 13.8 kV gas turbine generator (G05) can also supply power to the 13.8 kV distribution network via bus H01. The high voltage station auxiliary transformer 1X03 normally supplies offsite power to the Unit 1 low voltage station auxiliary transformer 1X04 via bus H02. Alternate power supplies to the Unit 1 station auxiliary transformer 1X04 are the gas turbine generator (G05) and the high voltage station transformer 2X03. Similarly the high voltage station auxiliary transformer 2X03 supplies power to the Unit 2 low voltage station auxiliary transformer 2X04 with alternate power supplies from the gas turbine generator (G05) and high voltage station transformer 1X03. The normal 13.8 kV electrical arrangement is to have one of the two bus tie breakers from bus H02 or Bus H03 to bus H01 closed supplying power to bus H01.

The 13.8 kV bus configuration allows a high voltage station auxiliary transformer (1X03 or 2X03) to be removed from service, allowing its associated low voltage auxiliary transformer (1X04 or 2X04) to be supplied from the opposite unit's redundant high voltage station auxiliary transformer (1X03 or 2X03) or the gas turbine generator. If a high voltage station auxiliary transformer lockout occurs, the 13.8 kV bus tie breakers will receive an automatic close signal to supply the affected unit's low voltage station auxiliary transformer. The closing of

BASES

BACKGROUND (continued)

the tie breakers into a common fault is prevented by trip and lockout interlocks in the breaker control circuits.

The 13.8 kV distribution network supplies power to the low voltage (13.8/4.16 kV) station auxiliary transformers, 1X04 and 2X04, which in turn supply power to 4.16 kV distribution buses, A03 and A04. The 4.16 kV distribution buses, A03 and A04, supply power to safeguards buses A05 and A06.

The offsite AC power source consists of all breakers, transformers, switches, interrupting devices, cabling, and controls required to transmit power from the offsite 345 kV transmission network to the 4.16 kV Class 1E safeguards bus(es).

The onsite standby emergency power system is comprised of four diesel generators that directly supply the 4.16 kV safeguards electrical distribution buses (A05 and A06). The two A train standby emergency power sources (G-01 and G-02) are normally aligned; G-01 to the Unit 1 A train 4.16 kV bus (1A05) and G-02 to the Unit 2 A train 4.16 kV bus (2A05). The two Train B standby emergency power sources are normally aligned; G-03 to the Unit 1 B train 4.16 kV bus (1A06) and G-04 to the Unit 2 B train 4.16 kV bus (2A06). Each emergency diesel generator is capable of starting and supplying the power requirement of one complete set of safeguards equipment for one reactor unit, while simultaneously providing sufficient power to allow the other unit to be placed in a safe shutdown condition (no accident is assumed in the second unit).

Normally, all four standby emergency power sources are OPERABLE and aligned to their normal bus; however, the standby emergency power sources can be aligned such that only one diesel generator per safeguards train is required OPERABLE to support one or both units. In addition, either diesel generator may be manually connected to one or both of its respective trains' 4.16 kV safeguards distribution buses.

Each diesel generator will automatically start on an undervoltage signal from its associated 4.16 kV train in either unit, and will restore power on the bus(es) to which it is aligned (refer to LCO 3.3.5, "Loss of Power (LOP) Diesel Generator (standby emergency power source) Start Instrumentation"). All four diesel generators will automatically start on a safety injection (SI) signal from either unit.

A logic circuit controls the permissive and sequential start signals to various loads to prevent overloading the diesel generator by automatic load application. Sequence and permissives differ based on the initiation signal(s) which are received. The standby emergency power sources will start and operate in the standby mode without tying to its respective 4.16 kV ESF bus(es) on an SI signal alone.

BASES

BACKGROUND (continued)

Response to a undervoltage condition alone is as follows:

a. The standby emergency power source(s) auto starts.

b. Trip of the 4.16 kV bus supply breaker(s).

c. All feeder and bus tie breakers on the 480 V safeguards bus, except for the component cooling pump motor, auxiliary feedwater pump motor, and the safeguards motor control centers, are tripped. For the A train 480 V buses, this load shedding function is blocked after the bus emergency diesel generator output circuit breaker closes. This is necessary to prevent inadvertent load shedding during load sequencing. For the train B buses, this load shedding function is not blocked. The train B emergency diesel generator transient voltage response is sufficient to maintain bus voltage above the 480 VAC Loss of Voltage Relay setpoint during load sequencing.

d. After the standby emergency power source comes up to speed (as sensed by diesel generator speed switches) and voltage (as determined by generator field being present), the associated standby emergency power source breaker closes, re-energizing the safeguards buses.

e. Manually start any auxiliary as required for safe plant operation.

Response to a Safety Injection signal, coincident with an undervoltage condition, is as follows:

a. The standby emergency power source(s) auto starts.

b. Trip of the 4.16 kV bus supply breaker(s) in response to the undervoltage condition.

c. All feeder and bus tie breakers on the 480 V safeguards bus, except for auxiliary feedwater pump motor, and the safeguards motor control centers, are tripped. For the A train 480 V buses, this load shedding function is blocked after the bus emergency diesel generator output circuit breaker closes. This is necessary to prevent inadvertent load shedding during load sequencing. For the train B buses, this load shedding function is not blocked. The train B emergency diesel generator transient voltage response is sufficient to maintain bus voltage above the 480 VAC Loss of Voltage Relay setpoint during load sequencing.

d. Automatic start of the component cooling pump motor is blocked, and the battery charger input contactors are tripped open.

BASES

BACKGROUND (continued)

e. After the standby emergency power source comes up to speed (as sensed by diesel generator speed switches) and voltage (as determined by generator field being present), the associated standby emergency power source breaker closes, re-energizing the safeguards buses.

f. Loading sequence of ESF equipment is initiated (refer to FSAR Section 8.8 for sequencer times).

g. Starting of containment spray pumps is independent of the ESF starting sequence. Containment spray start occurs within 10 seconds after a containment high pressure signal with the safeguards bus energized and may occur simultaneously with the start of other equipment.

The emergency generator automatic loading sequence, including engine starting, will be accomplished in approximately 60 seconds. The time between when the emergency diesel generator receives a start signal (i.e., after actuation of the 4.16 kV Loss of Voltage relay), until the emergency diesel generator is ready to accept load, shall not exceed 10 seconds.

The Train A standby emergency power sources (G01 and G02) are rated at 2,850 kW for 2000 hours, 0.8 power factor. Additional ratings for the Train A units include 2963 kW for 200 hours, 3000 kW for 4 hours and 3053 kW for a 30-minute period. The Train B standby emergency power sources are rated at 2848 kW for 2000 hours. Additional ratings for the Train B units include 2951 kW for 200 hours, and 2987 kW for 4 hours. The ESF loads that are powered from the 4.16 kV ESF buses are listed in Reference 2.

The two Train A emergency diesel-generator sets are located in separate rooms in the seismic Class I section of the turbine building. The two Train B emergency diesel-generator sets are located in separate rooms in the seismic Class I Emergency Diesel Generator building.

The emergency diesel generators have several auxiliary support systems that must function in order to perform their safety related functions, including; the diesel starting air system, engine fuel oil system, engine cooling system, engine lubricating system, and room ventilation system.

A diesel generator is OPERABLE when diesel room temperature can be maintained ≤ 120°F with the diesel engine operating at full load. Temperature will be maintained ≤ 120°F when: 1) all gravity-operated louvers are OPERABLE, and 2) both diesel room exhaust fans are OPERABLE.

BASES

BACKGROUND (continued)

In lieu of both diesel room exhaust fans being OPERABLE for G-01 and G-02; only one diesel room exhaust fan is required to be OPERABLE when outside air temperature is ≤ 80°F.

In lieu of both diesel room exhaust fans being OPERABLE for G-03 and G-04, only the large capacity fan (W-183C for G-03, W-184B for G-04) is required to be OPERABLE when outside air temperature is < 84°F, or only the small capacity fan (W-183B for G-03, W-184C for G-04) is required to be OPERABLE when outside air temperature is ≤ 36°F.

A detailed description of the AC power distribution network is contained in FSAR, Chapter 8 (Ref. 2).

APPLICABLE SAFETY ANALYSES

The initial conditions of DBA and transient analyses in the FSAR, Chapter 14 (Ref. 3), assume ESF systems are OPERABLE. The AC electrical power sources are designed to provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF systems so that the fuel, Reactor Coolant System (RCS), and containment design limits are not exceeded. These limits are discussed in more detail in the Bases for Section 3.2, Power Distribution Limits; 3.4, Reactor Coolant System (RCS); and Section 3.6, Containment Systems.

The OPERABILITY of the AC electrical power sources is consistent with the initial assumptions of the accident analyses and is based upon meeting the design basis of the unit. This results in maintaining at least the minimum number of safeguard buses required in support of equipment required to mitigate the consequences of design basis accidents and anticipated operational occurrences in the event of:

a. An assumed loss of all offsite power or all onsite AC power; and

b. A worst case single failure.

The AC sources satisfy Criterion 3 of NRC Policy Statement.

LCO

Qualified sources of power between the offsite transmission network, the onsite Class 1E electrical power distribution system, and separate and independent standby emergency power sources for each safeguards train ensures the availability of required power to shut down the reactor and maintain it in a safe shutdown condition after an anticipated operational occurrence (AOO) or a postulated DBA.

BASES

LCO (continued)

The following AC electrical power sources are required to be OPERABLE:

a. One circuit between the offsite transmission network and the associated unit's 4.16 kV Class 1E safeguards buses, A05 and A06, utilizing the associated unit's X03 transformer or the opposite unit's X03 transformer with the gas turbine in operation, and associated unit's X04 transformer; and

B RAI 3.8.1-16

b. One circuit between the offsite transmission network and the opposite unit's 4.16 kV Class 1E safeguards buses, A05 and A06; and

c. One standby emergency power source capable of supplying each 4.16 kV Class 1E safeguards bus, A05 and A06.

Each of the above required offsite sources is described in detail as follows:

The source of offsite AC power between the offsite transmission network and the associated unit's 4.16 kV Class 1E safeguards buses, A05 and A06, consists of:

a. The associated unit's high voltage system auxiliary transformer, X03, supplied from 345 kV Switchyard; or, the opposite unit's X03 with the gas turbine in operation;

B RAI 3.8.1-16

b. The associated unit's low voltage station auxiliary transformer, X04;

c. The associated unit's 4.16 kV distribution buses, A03 and A04; and

d. All associated breakers, switches, interrupting devices, cabling, and controls required to transmit power from the Offsite 345 kV Distribution System to its respective unit's 4.16 kV safeguards buses A05 and A06.

The offsite AC power circuit between the offsite transmission network and the opposite unit's 4.16 kV Class 1E safeguards buses, A05 and A06, consists of:

a. Either high voltage system auxiliary transformer, X03, supplied from the 345 kV Switchyard, supplying power to either unit's low voltage station auxiliary transformer, X04, the opposite unit's 4.16 kV distribution buses, A03 and A04, the associated unit's 4.16 kV distribution buses, A03 and A04 (when power is being supplied by the associated unit's low voltage station auxiliary X04 transformer); and

BASES

LCO (continued)

b. All associated breakers, switches, interrupting devices, cabling, and controls required to transmit power from the Offsite 345 kV Distribution System to the opposite unit's 4.16 kV safeguards buses, A05 and A06.

Each of the required offsite sources must be capable of maintaining rated frequency and voltage, and accepting required loads during an accident, while connected to the ESF buses. For the offsite AC sources, separation and independence are to the extent practical. A circuit may be connected to more than one ESF bus. Additionally, fast transfer capability of offsite power to the opposite 13.8 kV AC Power Distribution Circuit or Gas Turbine Generator does not violate separation criteria. The closing of the tie breakers into a common fault is prevented by trip and lockout interlocks in the breaker control circuits.

Each Onsite Class 1E Safeguards AC Power Distribution System must be capable of being powered from an OPERABLE standby emergency power source. Each standby emergency power source must be capable of starting, accelerating to rated speed and voltage, and connecting to its respective safeguards bus(es) on detection of undervoltage within 10 seconds. Each standby emergency power source must also be capable of accepting ESF loads within the predetermined sequence established by the ESF safeguards logic and sequence timers, and continue to operate until offsite power can be restored to the ESF buses. Sequencing of loads is a required function for standby emergency power source OPERABILITY.

APPLICABILITY

The AC sources are required to be OPERABLE in MODES 1, 2, 3, and 4 to ensure that:

a. Acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of AOOs or abnormal transients; and

b. Adequate core cooling is provided and containment OPERABILITY and other vital functions are maintained in the event of a postulated DBA.

The AC power requirements for MODES 5 and 6 are covered in LCO 3.8.2, "AC Sources-Shutdown.

BASES

ACTIONS

Bases Table B 3.8.1-1 provides a reference of Conditions that are applicable based on various inoperabilities.

A.1 and A.2

To ensure a highly reliable power source of offsite power remains available when the associated unit's X03 transformer is inoperable, Required Action A.1 requires verification that offsite power is supplying the associated unit's 4.16 kV safeguards buses from the opposite unit's X03 transformer within 24 hours and Required Action A.2 requires that the gas turbine generator be placed in operation within 24 hours. The 24 hour Completion Time associated with Required Action A.2 is sufficient time to start, synchronize and load the gas turbine.

The 24 hour Completion Time associated with Required Action A.1 is sufficient to verify that the associated unit's safeguards buses continue to be energized from offsite power, since transfer to the opposite unit's X03 transformer should have occurred automatically. If auto bus transfer has not occurred, the 24 hour Completion Time is sufficient to return offsite power to the associated unit's safeguards buses.

B.1

Required Action B.1 applies when the associated unit's X04 transformer is inoperable. The inoperability of the associated unit's X04 transformer renders offsite power to the associated units safeguards buses inoperable. According to Regulatory Guide 1.93 (Ref. 5), operation may continue in Condition B for a period that should not exceed 24 hours. This level of degradation means that the offsite electrical power system does not have the capability to effect a safe shutdown and to mitigate the effects of an accident; however, the onsite AC sources have not been degraded.

Because of the normally high availability of the offsite source, this level of degradation may appear to be more severe than other combinations of AC sources inoperable that involve one or more inoperable standby emergency power sources. However, two factors tend to decrease the severity of this level of degradation:

a. The configuration of the redundant AC electrical power system that remains available is not susceptible to a single bus or switching failure; and

b. The time required to detect and restore an unavailable offsite power source is generally much less than that required to detect and restore an unavailable onsite AC source.

BASES

ACTIONS (continued) With the required offsite circuit inoperable, sufficient onsite AC sources are available to maintain the unit in a safe shutdown condition in the event of a DBA or transient. In fact, a simultaneous loss of offsite AC sources, a LOCA, and a worst case single failure were postulated as a part of the design basis in the safety analysis. Thus, the 24 hour Completion Time provides a period of time to effect restoration of the offsite circuits commensurate with the importance of maintaining an AC electrical power system capable of meeting its design criteria.

C.1

Required Action C.1, applies when offsite power to both safeguards buses on the same unit are inoperable (i.e., 1A05 and 1A06, or 2A05 and 2A06), or offsite power to safeguards buses 1A05 and 2A06 are inoperable. This level of degradation means that the offsite electrical power system does not have the capability to supply the minimum number of ESF systems required to effect a safe shutdown and to mitigate the effects of an accident; however, the onsite AC sources have not been degraded. This condition is similar to that of Condition B, which according to Regulatory Guide 1.93 (Ref. 5), allows operation to continue for a period that should not exceed 24 hours. Because of the normally high availability of the offsite source, this level of degradation may appear to be more severe than other combinations of AC sources inoperable that involve one or more inoperable standby emergency power sources. However, two factors tend to decrease the severity of this level of degradation:

a. The configuration of the redundant AC electrical power system that remains available is not susceptible to a single bus or switching failure; and

b. The time required to detect and restore an unavailable offsite power source is generally much less than that required to detect and restore an unavailable onsite AC source.

With the required offsite circuit inoperable, sufficient onsite AC sources are available to maintain the unit in a safe shutdown condition in the event of a DBA or transient. In fact, a simultaneous loss of offsite AC sources, a LOCA, and a worst case single failure were postulated as a part of the design basis in the safety analysis. Thus, the 24 hour Completion Time provides a period of time to effect restoration of the offsite circuits commensurate with the importance of maintaining an AC electrical power system capable of meeting its design criteria.

BASES

ACTIONS (continued) D.1

Condition D applies when offsite power is inoperable to one or more required 4.16 kV safeguards bus(es). The Required Actions for this Condition provide appropriate compensatory actions for each inoperable power supply, while the combination of Condition C and Condition D dictates which combinations of buses with inoperable power sources are allowed for 7 days versus 24 hours. B RAI 3.8.1-1

Required Action D.1 is intended to provide assurance that an event coincident with a single failure of the associated standby emergency power source will not result in a complete loss of safety function of critical redundant required features. These features are powered from the redundant safeguards train.

The Completion Time for Required Action D.1 is intended to allow the operator time to evaluate and repair any discovered inoperabilities. This Completion Time also allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." In this Required Action, the Completion Time only begins on discovery that both:

a. The safeguards bus has no offsite power supplying its loads; and

b. A required feature on the other train is inoperable.

If at any time during the existence of Condition D a redundant required feature subsequently becomes inoperable, this Completion Time begins to be tracked.

Discovering no offsite power to one safeguards bus coincident with one or more inoperable required redundant support or supported features, or both, results in starting the Completion Times for the Required Action. Twelve hours is acceptable because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown. B RAI 3.8.1-20

The remaining OPERABLE safeguards bus(es)' offsite power supplies and standby emergency power sources are adequate to supply electrical power to Train A and Train B of the onsite Class 1E Distribution System. The 12 hour Completion Time takes into account the component OPERABILITY of the redundant counterpart to the inoperable required feature. Additionally, the 12 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

BASES

ACTIONS (continued) D.2

Operation may continue in Condition D for a period that should not exceed 7 days with offsite power to one or more 4.16 kV safeguards buses inoperable. In this condition, the reliability of the offsite system is degraded, and the potential for a loss of offsite power may be increased, with attendant potential for a challenge to the unit safety systems. However, the remaining OPERABLE 4.16 kV safeguards buses supplied by offsite power and standby emergency power sources are adequate to supply electrical power to the onsite Class 1E Safeguards Distribution System.

The 7 day Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

The second Completion Time for Required Action D.2 establishes a limit on the maximum time allowed for any combination of required AC power sources to be inoperable during any single contiguous occurrence of failing to meet the LCO. If Condition D is entered while, for instance, a standby emergency power source is inoperable and that standby emergency power source is subsequently returned to OPERABLE, the LCO may already have been not met for up to 7 days. This could lead to a total of 14 days, since initial failure to meet the LCO, to restore the offsite power supply. At this time, a standby emergency power source could again become inoperable, the offsite power supply restored OPERABLE, and an additional 7 days (for a total of 21 days) allowed prior to complete restoration of the LCO. The 14 day Completion Time provides a limit on the time allowed in a specified condition after discovery of failure to meet the LCO. This limit is considered reasonable for situations in which Conditions D and E are entered concurrently. The "AND" connector between the 7 day and 14 day Completion Times means that both Completion Times apply simultaneously, and the more restrictive Completion Time must be met.

As in Required Action D.1, the Completion Time allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." This will result in establishing the "time zero" at the time that the LCO was initially not met, instead of at the time Condition D was entered.

E.1

Condition E applies when one or more standby emergency power supplies are inoperable. Condition E contains a Note which provide clarification that, for this Condition, separate Condition entry is allowed for each inoperable standby emergency power supply. This is acceptable since the Required Actions for this Condition provide

BASES

ACTIONS (continued) appropriate compensatory actions for each inoperable power supply, while the combination of Condition E and Condition G dictates which combinations of buses with inoperable power sources are allowed for 7 days versus 2 hours. B RAI 3.8.1-9

Required Action E.1 is intended to provide assurance that a loss of offsite power, during the period that a standby emergency power source is inoperable, does not result in a complete loss of safety function of critical systems. These features are designed with redundant safety related trains. Redundant required feature failures consist of inoperable features associated with a train, redundant to the train that has the inoperable standby emergency power source.

The Completion Time for Required Action E.1 is intended to allow the operator time to evaluate and repair any discovered inoperabilities. This Completion Time also allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." In this Required Action, the Completion Time only begins on discovery that both:

a. An inoperable standby emergency power source exists; and

b. A required redundant feature is inoperable. B RAI 3.8.1-20

If at any time during the existence of this Condition a redundant required feature subsequently becomes inoperable, this Completion Time begins to be tracked.

Discovering an inoperable standby emergency power source coincident with one or more inoperable required support or supported features, or both, that are associated with the remaining OPERABLE standby emergency power source, results in starting the Completion Time for the Required Action. Four hours from the discovery of these events existing concurrently is acceptable because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown.

In this Condition, the remaining OPERABLE standby emergency power source(s) and offsite circuits are adequate to supply electrical power to the onsite Class 1E Distribution System. Thus, on a component basis, single failure protection for the required feature's function may have been lost; however, function has not been lost. The 4 hour Completion Time takes into account the OPERABILITY of the redundant counterpart to the inoperable required feature. Additionally, the 4 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

BASES

ACTIONS (continued) E.2.1, E.2.2, and E.2.3

Required Action E.2.1 provides an allowance to avoid unnecessary testing of OPERABLE standby emergency power source(s). If it can be determined that the cause of the inoperable standby emergency power source does not exist on the OPERABLE standby emergency power source, SR 3.8.1.2 does not have to be performed. If the cause of inoperability exists on other standby emergency power source(s), the other standby emergency power source(s) would be declared inoperable upon discovery and Condition E of LCO 3.8.1 would be entered for the additional inoperable source. Which additional standby emergency power supply(ies) are inoperable will dictate whether entry into LCO 3.8.1 Condition F is required. Once the failure is repaired, the common cause failure no longer exists, and Required Action E.2.1 is satisfied. If the cause of the initial inoperable standby emergency power source cannot be confirmed not to exist on the remaining standby emergency power source(s), performance of SR 3.8.1.2 suffices to provide assurance of continued OPERABILITY of that standby emergency power source.

In the event the inoperable standby emergency power source is restored to OPERABLE status prior to completing either E.2.1 or E.2.2, the plant corrective action program will continue to evaluate the common cause possibility. This continued evaluation, however, is no longer under the 24 hour constraint imposed while in Condition E.

According to Generic Letter 84-15 (Ref. 6), 24 hours is reasonable to confirm that the OPERABLE standby emergency power source(s) is not affected by the same problem as the inoperable standby emergency power source.

Failure to complete Required Action E.2.1 or E.2.2 outlined above will result in declaring the other required standby emergency power sources inoperable in accordance with Required Action E.2.3.

E.3

Operation may continue in Condition E for a period that should not exceed 7 days.

In Condition E, the remaining OPERABLE standby emergency power source and offsite circuits are adequate to supply electrical power to the onsite Class 1E Distribution System. The 7 day Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

BASES

ACTIONS (continued) The second Completion Time for Required Action E.3 establishes a limit on the maximum time allowed for any combination of required AC power sources to be inoperable during any single contiguous occurrence of failing to meet the LCO. If Condition E is entered while, for instance, an offsite source is inoperable and that source is subsequently restored OPERABLE, the LCO may already have been not met for up to 7 days. This could lead to a total of 14 days, since initial failure to meet the LCO, to restore the standby emergency power source. At this time, an offsite source could again become inoperable, the standby emergency power source restored OPERABLE, and an additional 7 days (for a total of 21 days) allowed prior to complete restoration of the LCO. The 14 day Completion Time provides a limit on time allowed in a specified condition after discovery of failure to meet the LCO. This limit is considered reasonable for situations in which Conditions D and E are entered concurrently. The "AND" connector between the 7 day and 14 day Completion Times means that both Completion Times apply simultaneously, and the more restrictive Completion Time must be met.

As in Required Action E.1, the Completion Time allows for an exception to the normal "time zero" for beginning the allowed time "clock." This will result in establishing the "time zero" at the time that the LCO was initially not met, instead of at the time Condition E was entered.

F.1 and F.2

Pursuant to LCO 3.0.6, the distribution system Actions would not be entered even if all AC sources to it were inoperable, resulting in de-energization. Therefore, the Required Action of Condition F are modified by a Note to indicate that when Condition F is entered with no AC power to any Class 1E 4.16 kV bus, the Conditions and Required Actions for LCO 3.8.9, "Distribution Systems – Operating" must be immediately entered. This allows Condition F to provide requirements for the loss of one offsite power source to one or more Class 1E 4.16 kV bus(es) and one required standby emergency power source, without regard to whether a train is de-energized. LCO 3.8.9 provides appropriate restrictions for a de-energized Class 1E 4.16 kV bus.

B RAI 3.8.1-9

G.1

Required Action G.1 applies when standby emergency power to both safeguards buses on the same unit are inoperable (i.e., 1A05 and 1A06, or 2A05 and 2A06), or standby emergency power to safeguards buses 1A05 and 2A06 are inoperable. Thus, with an assumed loss of offsite electrical power, insufficient standby emergency power sources are available to power the minimum required ESF functions. Since the offsite electrical power system is the only source of AC power for this

BASES

ACTIONS (continued)

level of degradation, the risk associated with continued operation for a very short time could be less than that associated with an immediate controlled shutdown (the immediate shutdown could cause grid instability, which could result in a total loss of AC power). Since any inadvertent generator trip could also result in a total loss of offsite AC power, however, the time allowed for continued operation is severely restricted. The intent here is to avoid the risk associated with an immediate controlled shutdown and to minimize the risk associated with this level of degradation.

According to Reference 5, operation may continue for a period that should not exceed 2 hours.

H.1 and H.2

RAI 3.8.1-9

If the inoperable AC electric power sources cannot be restored to OPERABLE status within the required Completion Time, the unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the unit must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

The AC sources are designed to permit inspection and testing of all important areas and features, especially those that have a standby function, in accordance with the Point Beach Design Criteria (Ref. 1). Periodic component tests are supplemented by extensive functional tests during refueling outages (under simulated accident conditions).

Where various SRs discussed herein specify voltage and frequency limitations, the following is applicable. The minimum continuous rating for safety-related electrical motors is 90% of nominal motor voltage as recommended by ANSI C50.41-1977 and NEMA MG-1. Additionally, the safety-related motors have a one-minute rating of 75% of nominal motor voltage as recommended by ANSI C50.41-1977. Therefore, under a worst case (maximum) loading condition, safeguards bus voltages must be maintained high enough to prevent the terminal voltage at any 4160 or 480 V motor from falling below 3600 / 414 V continuous (90% of nominal) or 3000 / 345 V for one minute (75% of normal). Additionally, motor control center continuous and instantaneous voltages must be maintained above 400 V and 308 V, respectively, to ensure that 480 V Motor Control Center contactors are able to close and do not drop out. These voltages are below the minimum continuous and instantaneous 480 V motor voltage

BASES

SURVEILLANCE REQUIREMENTS (continued)

To minimize the wear on moving parts that do not get lubricated when the engine is not running, SR 3.8.1.2 is modified by a Note to indicate that all standby emergency power source starts for this surveillance may be preceded by an engine prelube and followed by a warmup period prior to loading.

For the purposes of SR 3.8.1.2 testing, the standby emergency power sources are started from standby conditions. Standby conditions for a standby emergency power source mean that the diesel engine coolant and oil are being continuously circulated and temperature is being maintained consistent with manufacturer recommendations.

SR 3.8.1.2 requires that, at a 31 day Frequency, the standby emergency power source starts from standby conditions and achieves required voltage and frequency.

The 31 day Frequency for SR 3.8.1.2 is consistent with Regulatory Guide 1.9 (Ref. 4). This Frequency provides adequate assurance of standby emergency power source OPERABILITY, while minimizing degradation resulting from testing.

SR 3.8.1.3

This Surveillance verifies that the standby emergency power sources are capable of synchronizing with the offsite electrical system and accepting loads ≥ 2500 kW and ≤ 2850 kW. A minimum run time of 60 minutes is required to stabilize engine temperatures, while minimizing the time that the standby emergency power source is connected to the offsite source.

Although no power factor requirements are established by this SR, the standby emergency power source is normally operated at a power factor between 0.8 lagging and 1.0. The 0.8 value is the design rating of the machine, while the 1.0 is an operational limitation to ensure circulating currents are minimized. The load band is provided to avoid routine overloading of the standby emergency power source. Routine overloading may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain standby emergency power source OPERABILITY.

The 31 day Frequency for this Surveillance is consistent with Regulatory Guide 1.9 (Ref. 4).

This SR is modified by three Notes. Note 1 indicates that diesel engine runs for this Surveillance may include gradual loading, so that mechanical stress and wear on the diesel engine are minimized. Note 2 states that momentary transients, because of changing bus

BASES

SURVEILLANCE REQUIREMENTS (continued)

requirements.

The maximum allowable 4160 V system voltage must be low enough to ensure all connected equipment will operate properly. Motors are the most sensitive 4.16 kV and 480 V loads to high voltages. The maximum continuous rating for safety-related motors is 110% of nominal as recommended by ANSI C50.41-1977. Therefore, under a worst case (minimum) loading condition, 4160 V System voltages should be maintained low enough to remain below 110% of the ratings.

The safeguards distribution system frequency must be maintained within the limits allowed by connected equipment; below the setting of overcurrent relays; and above the setting of underfrequency relays. Electrical motors are sensitive to variations in operating frequency.

Equipment Technical Manuals for various 4160 V and 480 V motors have indicated motor terminal frequency must be maintained between 57 - 63 Hz, which is consistent with industry motor standards. The 57 - 63 Hz rating is also consistent with the allowable frequency ranges for other frequency sensitive non-motor loads (i.e., 480 V battery chargers). Although 63 Hz is the upper limit for motor operation to prevent motor damage, motors may not be capable of operating at 63 Hz due to circuit breaker settings. Since motor current increases with frequency, the possibility exists that circuit breakers supplying 480 V motors may trip on overcurrent if the 4160 V System is operated at elevated frequencies. Calculations performed verify that all safety related 480 V motors will not trip on overcurrent assuming their terminal frequency does not exceed 62.4 Hz. Therefore, to ensure that connected safety-related loads do not trip on overcurrent, 4160 V System frequency must not exceed 62.4 Hz.

SR 3.8.1.1

This SR ensures proper circuit continuity for the offsite AC electrical power supply to the onsite distribution network and availability of offsite AC electrical power. The breaker alignment verifies that each breaker is in its correct position to ensure that distribution buses and loads are connected to their preferred power source. The 7 day Frequency is adequate since breaker position is not likely to change without the operator being aware of it and because its status is displayed in the control room.

SR 3.8.1.2

This SR helps to ensure the availability of the standby electrical power supply to mitigate DBAs and transients and to maintain the unit in a safe shutdown condition.

BASES

SURVEILLANCE REQUIREMENTS (continued)

loads, do not invalidate this test. Similarly, momentary power factor transients above the limit do not invalidate the test. Note 3 stipulates a prerequisite requirement for performance of this SR. A successful standby emergency power source start must precede this test to credit satisfactory performance.

SR 3.8.1.4

This Surveillance demonstrates that each required fuel oil transfer pump system operates and transfers fuel oil from its associated storage tank to its associated day tank and engine mounted sump as applicable. This is required to support continuous operation of standby power sources. This Surveillance provides assurance that the fuel oil transfer system is OPERABLE, the fuel oil piping system is intact, the fuel delivery piping is not obstructed, and the controls and control systems for automatic fuel transfer systems are OPERABLE.

The design of fuel transfer systems is such that pumps and valves operate automatically to maintain an adequate volume of fuel oil in the day and engine mounted sump tanks during or following standby emergency source testing.

The 31 day Frequency is adequate to assure that the fuel oil transfer system is OPERABLE, since low level alarms are provided.

SR 3.8.1.5

In the event of a DBA coincident with a loss of offsite power, the standby emergency power sources are required to supply the necessary power to ESF systems so that the fuel, RCS, and containment design limits are not exceeded.

This Surveillance demonstrates the standby emergency power source operation, during a loss of offsite power actuation test signal in conjunction with an ESF actuation signal.

This test verifies all actions encountered from the loss of offsite power, including shedding of the nonessential loads and energization of the emergency buses and respective loads from the standby emergency power source. It further demonstrates the capability of the standby emergency power source to automatically achieve the required voltage and frequency within analysis limits.

The standby emergency power source autostart time of 10 seconds is derived from requirements of the accident analysis to respond to a design basis large break LOCA. The Surveillance should be continued for a minimum of 5 minutes in order to demonstrate that all starting transients have decayed and stability is achieved.

BASES

SURVEILLANCE REQUIREMENTS (continued)

The requirement to verify the connection and power supply of permanent and autoconnected loads is intended to satisfactorily show the relationship of these loads to the standby emergency power source loading logic. In certain circumstances, many of these loads cannot actually be connected or loaded without undue hardship or potential for undesired operation. For instance, Emergency Core Cooling Systems (ECCS) injection valves are not desired to be stroked open, or high pressure injection systems are not capable of being operated at full flow, or residual heat removal (RHR) systems performing a decay heat removal function are not desired to be realigned to the ECCS mode of operation. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the standby emergency power source systems to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

The Frequency of 18 months is consistent with the recommendations of Regulatory Guide 1.9 (Ref. 4), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with standard fuel cycle lengths.

For the purpose of this testing, the standby emergency power sources must be started from standby conditions. That is, with the engine oil continuously circulated and engine temperature maintained consistent with manufacturer recommendations for standby emergency power sources.

This SR is modified by a note. The reason for the Note is that the performance of the Surveillance would remove a required offsite source from service, perturb the electrical distribution system and challenge safety systems. B RAI 3.8.1-13

SR 3.8.1.6

As required by Regulatory Guide 1.9 (Ref. 4), this Surveillance ensures that the manual synchronization and load transfer from the standby emergency power source to the offsite source can be made and the standby emergency power source can be returned to ready to load status when offsite power is restored. It also ensures that the autostart logic is reset to allow the standby emergency power source to reload if a subsequent loss of offsite power occurs. The standby emergency power source is considered to be in ready to load status when the standby emergency power source is at rated speed and voltage, the output breaker is open and can receive an autoclose signal on bus undervoltage, and the load sequence timers are reset.

BASES

SURVEILLANCE REQUIREMENTS (continued)	The Frequency of 18 months is consistent with the recommendations of Regulatory Guide 1.9 (Ref. 4), and takes into consideration unit conditions required to perform the Surveillance.

REFERENCES

1. FSAR. Section 1.3.
2. FSAR. Chapter 8.
3. FSAR. Chapter 14.
4. Regulatory Guide 1.9, Rev. 3, July 1993.
5. Regulatory Guide 1.93, Rev. 0, December 1974.
6. Generic Letter 84-15, "Proposed Staff Actions to Improve and Maintain Diesel Generator Reliability," July 2, 1984.

Table B 3.8.1-1 (page 1 of 2)
Conditions for AC Sources Component Inoperabilities

Inoperable Equipment	Condition(s)
Inoperable standby emergency power source to 1A05, 1A06, 2A05, or 2A06. OR Inoperable standby emergency power sources to 1A05 and 2A05. OR Inoperable standby emergency power sources to 1A06 and 2A06.	Condition E
Inoperable standby emergency power source to A05 and A06 on the same unit. OR Inoperable standby emergency power to 1A05 and 2A06.	Condition E AND Condition G B RAI 3.8.1-9
One or more de-energized 4.16 kV safeguards buses (1A05/2A05/1A06/2A06). OR One or more 4.16 kV safeguards buses (1A05/2A05/1A06/2A06) with inoperable standby emergency power source(s) and inoperable offsite power source(s).	Condition D AND Condition E AND Condition F OR Condition G B RAI 3.8.1-9
Inoperable offsite power source to A05 and A06 on the same unit. OR Inoperable offsite power to 1A05 and 2A06.	Condition C AND Condition D
Inoperable offsite power source to 1A05, 1A06, 2A05, or 2A06. OR Inoperable offsite sources to 1A05 and 2A05. OR Inoperable offsite sources to 1A06 and 2A06.	Condition D

Table B 3.8.1-1 (page 2 of 2)
Conditions for AC Sources Component Inoperabilities

Inoperable Equipment	Condition(s)
X04 transformer de-energized.	Condition B AND Condition C AND Condition D
Associated unit's X03 transformer de-energized.	Condition A -------NOTE------- Enter appropriate Conditions for a de-energized X04 if auto bus transfer is incomplete. ----------

Description of Changes - NUREG-1431 Section 3.08.02

24-Jul-00

DOC Number	DOC Text
M.01 Rev. B	The CTS does not contain an explicit LCO or Required Actions which address AC power sources during Modes 5 and 6. The CTS definition of operability states that for a system, subsystem, train, component, or device to be operable its normal and emergency power sources must be capable of performing their intended support functions. Therefore, whenever a system, subsystem, train, component, or device is required to be operable, its associated AC power source is required to be operable. When operating at power, when required AC sources become inoperable, the required actions will ultimately place the affected unit in cold shutdown if the power source is not restored to operable within the required allowed outage time. This places the unit in a condition where the operability requirements no longer apply. Thus normal and standby emergency power are not required by the CTS in cold shutdown and below. Proposed ITS LCO 3.8.2 will require the one circuit between the offsite transmission network and the 480 V Class 1E safeguards buses (required by LCO 3.8.10) and one standby emergency power source capable of supplying one of the associated unit's 480 V Class 1E safeguards buses (required by LCO 3.8.10) to be operable in Modes 5 and 6. Proposed LCO 3.8.2 contains Required Actions which require associated supported feature(s) to be declared inoperable immediately when a AC source is inoperable (as would be required by the CTS definition of operability.) Additional Required Actions stipulate to immediately initiate actions to restore the required AC power source to OPERABLE status. As such, the proposed LCO and Required Actions are consistent with the CTS definition of operability. However, this change is more restrictive due to the addition of explicit Surveillance Requirements which define operability, in turn establishing when the Conditions and Required Actions must be entered.

CTS:	ITS:
NEW	LCO 3.08.02
	LCO 3.08.02 A
	LCO 3.08.02 B
	LCO 3.08.02 COND A
	LCO 3.08.02 COND A RA A.1
	LCO 3.08.02 COND A RA A.2
	LCO 3.08.02 COND B
	LCO 3.08.02 COND B RA B.1
	LCO 3.08.02 COND B RA B.2
	SR 3.08.02.01
	SR 3.08.02.02
	SR 3.08.02.03
	SR 3.08.02.04
	SR 3.08.02.05

BASES

ACTIONS (continued)

increase reactor vessel inventory provided the required SDM is maintained.

Suspension of these activities does not preclude completion of actions to establish a safe conservative condition. These actions minimize the probability or the occurrence of postulated events. It is further required to immediately initiate action to restore the required AC sources and to continue this action until restoration is accomplished in order to provide the necessary AC power to the unit safety systems.

Replace with Insert 3.8.2-4.

4

The Completion Time of immediately is consistent with the required times for actions requiring prompt attention. The restoration of the required AC electrical power sources should be completed as quickly as possible in order to minimize the time during which the unit safety systems may be without sufficient power.

Pursuant to LCO 3.0.6, the Distribution System's ACTIONS would not be entered even if all AC sources to it are inoperable, resulting in de-energization. Therefore, the Required Actions of Condition A are modified by a Note to indicate that when Condition A is entered with no AC power to any required ESF bus, the ACTIONS for LCO 3.8.10 must be immediately entered. This Note allows Condition A to provide requirements for the loss of the offsite circuit, whether or not a train is de-energized. LCO 3.8.10 would provide the appropriate restrictions for the situation involving a de-energized train.

SURVEILLANCE REQUIREMENTS

SR 3.8.2.1

SR 3.8.2.1 requires the SRs from LCO 3.8.1 that are necessary for ensuring the OPERABILITY of the AC sources in other than MODES 1, 2, 3, and 4. SR 3.8.1.8 is not required to be met since only one offsite circuit is required to be OPERABLE. SR 3.8.1.17 is not required to be met because the required OPERABLE DG(s) is not required to undergo periods of being synchronized to the offsite circuit. SR 3.8.1.20 is excepted because starting independence is not required with the DG(s) that is not required to be operable. B

Replace with Insert 3.8.2-5.

5

This SR is modified by a Note. The reason for the Note is to preclude requiring the OPERABLE DG(s) from being paralleled

BASES

SURVEILLANCE REQUIRMENTS (CONTINUED)

Replace with Insert 3.8.2-5.

5

with the offsite power network or otherwise rendered inoperable during performance of SRs, and to preclude deenergizing a required 4160 V ESF bus or disconnecting a required offsite circuit during performance of SRs. With limited AC sources available, a single event could compromise both the required circuit and the DG. It is the intent that these SRs must still be capable of being met, but actual performance is not required during periods when the DG and offsite circuit is required to be OPERABLE. Refer to the corresponding Bases for LCO 3.8.1 for a discussion of each SR.

B

REFERENCES

None.

1. Regulatory Guide 1.9, Rev. 3, July, 1993.

4

3.8.2 Inserts

3.8.2-2

The AC electrical offsite sources for a unit in MODE 5 or 6 is described as follows:

One circuit between the offsite transmission network and the associated unit's 480V Class 1E safeguards buses, B03 and B04, utilizing:

a. Either unit's X03 and X04 transformers;

b. Either unit's 4.16 kV buses, A03 and A04;

c. Associated unit's 4.16 kV Class 1E safeguards buses, A05 and A06; and,

d. All associated breakers, switches, interrupting devices, cabling, and controls required to transmit power from the Offsite 345 kV Distribution System to the required 480 VAC safeguards buses B03 and B04.

B

RAI 3.8.2-3

3.8.2-3

A.1 and A.2

An offsite circuit would be considered inoperable if it were not available to the safeguards buses required to be OPERABLE by LCO 3.8.10. Declaring the required features associated with an inoperable offsite circuit inoperable ensures that the appropriate restrictions are implemented in accordance with the affected supported features LCO Required Actions. The Completion Time of immediately is consistent with the required times for actions requiring prompt attention.

It is further required to immediately initiate action to restore the required AC sources and to continue this action until restoration is accomplished in order to provide the necessary AC power to the unit safety systems. The restoration of the required AC electrical power sources should be completed as quickly as possible in order to minimize the time during which the unit safety systems may be without sufficient power.

3.8.2-5 (continued)

SR 3.8.2.2 (continued)

achieves required voltage and frequency. While not specifically stated within this SR, the standby emergency power source must be capable of starting and accepting loads.

B

RAI 3.8.2-4

This Frequency provides adequate assurance of standby emergency power source OPERABILITY, while minimizing degradation resulting from testing.

SR 3.8.2.3

This Surveillance demonstrates that each required fuel oil transfer system operates and transfers fuel oil from its associated storage tank to its associated day tank. This is required to support continuous operation of standby power sources. This Surveillance provides assurance that the fuel oil transfer system is OPERABLE, the fuel oil piping system is intact, the fuel delivery piping is not obstructed, and the controls and control systems for automatic fuel transfer systems are OPERABLE.

The design of fuel transfer systems is such that pumps and valves operate automatically in order to maintain an adequate volume of fuel oil in the day tanks during or following standby emergency source testing.

The 31 day Frequency is adequate to assure that the fuel oil transfer system is OPERABLE, since low level alarms are provided.

SR 3.8.2.4

In the event of a loss of offsite power, the standby emergency power source is required to supply support systems necessary to avoid immediate difficulty, to operate the unit in a safe manner and to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents).

This test verifies all actions encountered from a loss of offsite power, including shedding of the nonessential loads and energization of the emergency buses and respective connected loads from the standby emergency power source. It further demonstrates the capability of the standby emergency

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.2 AC Sources-Shutdown

BASES

BACKGROUND

A description of the AC sources is provided in the Bases for LCO 3.8.1, "AC Sources-Operating.

APPLICABLE SAFETY ANALYSES

The OPERABILITY of the minimum AC sources during MODES 5 and 6 ensures that:

a. The unit can be maintained in the shutdown or refueling condition for extended periods;

b. Sufficient instrumentation and control capability is available for monitoring and maintaining the unit status; and

c. Adequate AC electrical power is provided to mitigate events postulated during shutdown.

In general, when the unit is shut down, the Technical Specifications requirements ensure that the unit has the capability to mitigate the consequences of postulated accidents. However, assuming a single failure and concurrent loss of all offsite or all onsite power is not required. The rationale for this is based on the fact that many Design Basis Accidents (DBAs) that are analyzed in MODES 1, 2, 3, and 4 have no specific analyses in MODES 5 and 6. Worst case bounding events are deemed not credible in MODES 5 and 6 because the energy contained within the reactor pressure boundary, reactor coolant temperature and pressure, and the corresponding stresses result in the probabilities of occurrence being significantly reduced or eliminated, and in minimal consequences. These deviations from DBA analysis assumptions and design requirements during shutdown conditions are allowed by the LCO for required systems.

During MODES 1, 2, 3, and 4, various deviations from the analysis assumptions and design requirements are allowed within the Required Actions. This allowance is in recognition that certain testing and maintenance activities must be conducted provided an acceptable level of risk is not exceeded. During MODES 5 and 6, performance of a significant number of required testing and maintenance activities is also required. In MODES 5 and 6, the activities are generally planned and administratively controlled. Relaxations from MODE 1, 2, 3, and 4 LCO requirements are acceptable during shutdown modes based on:

a. The fact that time in an outage is limited. This is a risk prudent goal as well as a utility economic consideration.

BASES

APPLICABLE SAFETY ANALYSES (continued)

b. Requiring appropriate compensatory measures for certain conditions. These may include administrative controls, reliance on systems that do not necessarily meet typical design requirements applied to systems credited in operating MODE analyses, or both.

c. Prudent utility consideration of the risk associated with multiple activities that could affect multiple systems.

d. Maintaining, to the extent practical, the ability to perform required functions (even if not meeting MODE 1, 2, 3, and 4 OPERABILITY requirements) with systems assumed to function during an event.

In the event of an accident during shutdown, this LCO ensures the capability to support systems necessary to avoid immediate difficulty, assuming either a loss of all offsite power or a loss of all onsite diesel generator (DG) power.

The AC sources satisfy Criterion 3 of the NRC Policy Statement.

LCO

One offsite circuit capable of supplying the onsite Class 1E power distribution subsystem(s) of LCO 3.8.10, "Distribution Systems-Shutdown," ensures that all required loads are powered from offsite power. An OPERABLE standby emergency power source, associated with the distribution system train required to be OPERABLE by LCO 3.8.10, ensures a diverse power source is available to provide electrical power support, assuming a loss of the offsite circuit. Together, OPERABILITY of the required offsite circuit and standby emergency power source ensures the availability of sufficient AC sources to operate the unit in a safe manner and to mitigate the consequences of postulated events during shutdown.

The offsite circuit must be capable of maintaining rated frequency and voltage, and accepting required loads during an accident, while connected to the Engineered Safety Feature (ESF) bus(es). Offsite circuits are those that are described in the FSAR.

The AC electrical offsite sources for a unit in MODE 5 or 6 is described as follows:

One circuit between the offsite transmission network and the associated unit's 480 V Class 1E safeguards buses, B03 and B04, utilizing:

a. Either unit's X03 and X04 transformers;

b. Either unit's 4.16 kV buses, A03 and A04;

BASES

LCO (continued)

c. Associated unit's 4.16 kV Class 1E safeguards buses, A05 and A06; and,

d. All associated breakers, switches, interrupting devices, cabling, and controls required to transmit power from the Offsite 345 kV Distribution System to the required 480 VAC safeguards buses B03 and B04.

B RAI 3.8.2-3

The standby emergency power source must be capable of starting, accelerating to rated speed and voltage, and connecting to its respective ESF bus on detection of bus undervoltage. This sequence must be accomplished within 10 seconds. The standby emergency power source must be capable of accepting required loads within the assumed loading sequence intervals and continue to operate until offsite power can be restored to the ESF buses. These capabilities are required to be met from a variety of initial conditions such as standby emergency power source in standby with the engine hot and standby emergency power source in standby at ambient conditions.

It is acceptable for safeguards buses to be cross tied during shutdown conditions for limited periods of time as addressed in LCO 3.8.9 and 3.8.10.

APPLICABILITY

The AC sources required to be OPERABLE in MODES 5 and 6 provide assurance that:

a. Systems to provide adequate coolant inventory makeup are available for the irradiated fuel assemblies in the core;

b. Systems necessary to mitigate the effects of events that can lead to core damage during shutdown are available; and

c. Instrumentation and control capability is available for monitoring and maintaining the unit in a cold shutdown condition or refueling condition.

The AC power requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.1.

BASES

ACTIONS

A.1 and A.2

An offsite circuit would be considered inoperable if it were not available to the safeguards buses required to be OPERABLE by LCO 3.8.10. Declaring the required features associated with an inoperable offsite circuit inoperable ensures that the appropriate restrictions are implemented in accordance with the affected supported features LCO Required Actions. The Completion Time of immediately is consistent with the required times for actions requiring prompt attention.

It is further required to immediately initiate action to restore the required AC sources and to continue this action until restoration is accomplished in order to provide the necessary AC power to the unit safety systems. The restoration of the required AC electrical power sources should be completed as quickly as possible in order to minimize the time during which the unit safety systems may be without sufficient power.

B.1 and B.2

With the required standby emergency power source inoperable, the minimum required diversity of AC power sources is not available. Declaring the required features associated with the inoperable standby emergency power source inoperable ensures that the appropriate restrictions are implemented in accordance with the affected supported features LCO Required Actions. The Completion Time of immediately is consistent with the required times for actions requiring prompt attention.

It is further required to immediately initiate action to restore the required standby emergency power source to OPERABLE status. The restoration of the required standby emergency power sources should be completed as quickly as possible in order to minimize the time during which the unit safety systems may be without sufficient power.

SURVEILLANCE REQUIREMENTS

SR 3.8.2.1

This SR ensures proper circuit continuity for the offsite AC electrical power supply to the onsite distribution network and availability of offsite AC electrical power. The breaker alignment verifies that each breaker is in its correct position to ensure that distribution buses and loads are connected to their preferred offsite power source. The 7 day Frequency is adequate since breaker position is not likely to change without the operator being aware of it and because its status is displayed in the control room.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.2.2

This SR helps to ensure the availability of the standby electrical power supply to mitigate DBAs and to maintain the unit in a safe shutdown condition.

To minimize wear on moving parts that do not get lubricated when the engine is not running, SR 3.8.2.2 is modified by a Note to indicate that all standby emergency power source starts for this Surveillance may be preceded by an engine prelube period and followed by a warmup period prior to loading.

SR 3.8.2.2 requires that, at a 31 day Frequency, the standby emergency power source starts from standby conditions and achieves required voltage and frequency. While not specifically stated within this SR, the standby emergency power source must be capable of starting and accepting loads.

B
RAI 3.8.2-4

This Frequency provides adequate assurance of standby emergency power source OPERABILITY, while minimizing degradation resulting from testing.

SR 3.8.2.3

This Surveillance demonstrates that each required fuel oil transfer system operates and transfers fuel oil from its associated storage tank to its associated day tank. This is required to support continuous operation of standby power sources. This Surveillance provides assurance that the fuel oil transfer system is OPERABLE, the fuel oil piping system is intact, the fuel delivery piping is not obstructed, and the controls and control systems for automatic fuel transfer systems are OPERABLE.

The design of fuel transfer systems is such that pumps and valves operate automatically in order to maintain an adequate volume of fuel oil in the day tanks during or following standby emergency source testing.

The 31 day Frequency is adequate to assure that the fuel oil transfer system is OPERABLE, since low level alarms are provided.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.2.4

In the event of a loss of offsite power, the standby emergency power source is required to supply support systems necessary to avoid immediate difficulty, to operate the unit in a safe manner and to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents).

This test verifies all actions encountered from a loss of offsite power, including shedding of the nonessential loads and energization of the emergency buses and respective connected loads from the standby emergency power source. It further demonstrates the capability of the standby emergency power source to automatically achieve the required voltage and frequency.

The Surveillance should be continued for a minimum of 5 minutes in order to demonstrate that all starting transients have decayed and stability is achieved.

The Frequency of 18 months is consistent with the recommendations of Regulatory Guide 1.9 (Ref. 1), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with standard fuel cycle lengths.

For the purpose of this testing, the Standby emergency power sources must be started from standby conditions, that is, with the engine oil continuously circulated and engine temperature maintained consistent with manufacturer recommendations for standby emergency power sources.

This SR is modified by a note which exempts performance of this SR if the Frequency has expired. The standby emergency power source must continue to be capable of automatically starting and accepting loads; however, performance of the SR is not required if it is not met solely due to an expired frequency. The reason for the Note is to preclude requiring the OPERABLE standby emergency power source(s) from being paralleled with the offsite power network or otherwise rendered inoperable during performance of SRs, and to preclude deenergizing a required 4160 V ESF bus or disconnecting a required offsite circuit during performance of SRs. With limited AC sources available, a single event could compromise both the required circuit and the standby emergency power source. It is the intent that these SRs must still be capable of being met, but actual performance is not required during periods when the standby emergency power source and offsite circuit is required to be OPERABLE.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.2.5

As required by Regulatory Guide 1.9 (Ref. 1), this Surveillance ensures that the manual synchronization and automatic load transfer from the standby emergency power source to the offsite source can be made and the standby emergency power source can be returned to ready to load status when offsite power is restored. It also ensures that the autostart logic is reset to allow the standby emergency power source to reload if a subsequent loss of offsite power occurs.

The standby emergency power source is considered to be in ready to load status when the standby emergency power source is at rated speed and voltage, the output breaker is open and can receive an autoclose signal on bus undervoltage, and the load sequence logic is reset.

The Frequency of 18 months is consistent with the recommendations of Regulatory Guide 1.9 (Ref. 1), and takes into consideration unit conditions required to perform the Surveillance.

This SR is modified by a note which exempts performance of this SR if the Frequency has expired. The standby emergency power source must continue to be capable of synchronizing with offsite power and returning to a ready to load status, however performance of the SR is not required if it is not met solely due to an expired frequency. The reason for the Note is to preclude requiring the OPERABLE standby emergency power source(s) from being paralleled with the offsite power network or otherwise rendered inoperable during performance of SRs, and to preclude deenergizing a required 4160 V ESF bus or disconnecting a required offsite circuit during performance of SRs. With limited AC sources available, a single event could compromise both the required circuit and the DG. It is the intent that these SRs must still be capable of being met, but actual performance is not required during periods when the DG and offsite circuit is required to be OPERABLE.

REFERENCES

1. Regulatory Guide 1.9, Rev. 3, July 1993

Description of Changes - NUREG-1431 Section 3.08.03

24-Jul-00

DOC Number	DOC Text	
A.01 Rev. A	In the conversion of Point Beach current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted which do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the Standard Technical Specifications, Westinghouse Plants, NUREG-1431, Revision 1 (i.e., Improved Standard Technical Specifications (ISTS)).	
	CTS:	**ITS:**
	15.04.06.A.06	SR 3.08.03.02
A.02 Rev. A	The Bases of the current Technical Specifications for this section have been completely replaced by revised Bases that reflect the format and applicable content of PBNP ITS, consistent with the Standard Technical Specifications for Westinghouse Plants, NUREG-1431. The revised Bases are as shown in the PBNP ITS Bases.	
	CTS:	**ITS:**
	BASES	B 3.08.03
A.03 Rev. A	ITS LCO 3.8.3 establishes the conditions whereby Diesel Fuel Oil and Starting Air are required to be OPERABLE to support the operation of the standby emergency power sources. ITS LCO 3.8.3 will require the stored diesel fuel oil to be within limits and the starting air subsystem to be OPERABLE for each required standby emergency power source. By default the applicability of LCO 3.8.3 is consistent with the requirements of ITS LCO 3.8.1 and ITS LCO 3.8.2, requiring the OPERABILITY of these support systems when the associated standby emergency power source is required to be OPERABLE.	
	CTS:	**ITS:**
	NEW	LCO 3.08.03
A.04 Rev. A	If the stored fuel oil is not within limits, the CTS does not provide specific actions. Consistent with the definition of OPERABLE, the associated standby emergency power sources are required to be declared inoperable. Proposed ITS LCO 3.8.3, Required Action A.1 requires declaring the associated standby emergency power source(s) inoperable, if the volume of a storage tank is < 11,000 gals. Proposed ITS LCO 3.8.3, Required Action E.1 requires declaring the associated standby emergency power source(s) inoperable, if one or more standby emergency power sources' diesel fuel oil is not within limits, for reasons other than total particulates or new fuel oil properties not within limits. Therefore, adopting Conditions A and E and associated Required Actions is an administrative change and is consistent with NUREG 1431.	
	CTS:	**ITS:**
	NEW	LCO 3.08.03 COND A LCO 3.08.03 COND A RA A.1 LCO 3.08.03 COND E LCO 3.08.03 COND E RA E.1

Description of Changes - NUREG-1431 Section 3.08.03

24-Jul-00

DOC Number	DOC Text
A.05 Rev. A	If the starting air subsystem is not OPERABLE, the CTS does not provide specific actions. Consistent with the definition of OPERABLE, the associated standby emergency power sources are required to be declared inoperable. Proposed ITS LCO 3.8.3, Condition D requires declaring the associated standby emergency power source inoperable. Therefore, adopting Condition D is an administrative change and is consistent with NUREG 1431. **CTS:** NEW **ITS:** LCO 3.08.03 COND D LCO 3.08.03 COND D RA D.1
L.01 Rev. A	CTS 15.3.7.A.1.e requires a fuel supply of 11,000 gallons to be available in each tank which is being relied upon to supply any operable emergency diesel generator(s). CTS 15.04.01 Table 15.04.01-02 Item 17 requires a daily diesel fuel supply inventory. This change reduces the frequency of this surveillance. Proposed SR 3.8.3.1 requires verification that each fuel oil storage tank contains 11,000 gallons of fuel at least once per 31 days. The 31 day Frequency is adequate to ensure that a sufficient supply of fuel oil is available, because low level alarms are provided and unit operators would be aware of any large uses of fuel oil during this period. The CTS was originally based on maintaining 11,000 gallons in a single 14,000 gallon tank. The fuel oil system was modified in the 1990's to utilize two 35,000 gallon tanks. The capacity and normal inventory in these tanks provides substantial excess capacity that was not previously available. **CTS:** 15.04.01 T 15.04.01-02 17 **ITS:** SR 3.08.03.01
LA.01 Rev. A	CTS 15.4.6.A.6 requires a diesel fuel oil testing program be maintained to test stored fuel oil "on a quarterly basis in accordance with the applicable ASTM standards." Proposed ITS SR 3.8.3.2 requires verification that fuel oil properties of stored fuel oil is tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program at a frequency of "In accordance with the Diesel Fuel Oil Testing Program." The testing frequency of the CTS requirement and the reference to the ASTM standards is not required to be in the ITS to provide adequate protection of the public health and safety, as the regulatory requirement (Diesel Fuel Oil Testing Program) is being maintained in Technical Specifications. Changes to plant procedures and other plant controlled documents are subject to controls imposed by plant administrative procedures, which endorse applicable regulations and standards. The testing of stored fuel oil will continue to be performed in accordance with the Diesel Fuel Oil Testing program. **CTS:** 15.04.06.A.06 **ITS:** N/A

DOC Number	DOC Text
M.01 Rev. A	The CTS does not contain requirements comparable to proposed ITS LCO 3.8.3 Conditions B and C. Proposed ITS LCO 3.8.3 Required Action B.1 requires restoring out of specification fuel oil total particulates to within limit within 7 days. This Condition is entered as a result of a failure to meet the acceptance criterion of SR 3.8.3.2. Normally, trending of particulate levels allows sufficient time to correct high particulate levels prior to reaching the limit of acceptability. Poor sample procedures (bottom sampling), contaminated sampling equipment, and errors in laboratory analysis can produce failures that do not follow a trend. It is prudent to allow a brief period prior to declaring the associated standby emergency power source inoperable, because the presence of particulates does not mean failure of the fuel oil to burn properly in the diesel engine; particulate concentration is unlikely to change significantly between Surveillance Frequency intervals; and, proper engine performance has been recently demonstrated (within 31 days). The 7 day Completion Time allows for further evaluation, resampling and re-analysis of the standby emergency power source fuel oil. With the new fuel oil properties defined in the Diesel Fuel Oil Testing Program for SR 3.8.3.2 not within the required limits, proposed ITS LCO 3.8.3 Required Action C.1 allows 30 days to restore the stored fuel oil properties. This period provides sufficient time to test the stored fuel oil to determine that the new fuel oil, when mixed with previously stored fuel oil, remains acceptable, or to restore the stored fuel oil properties. Even if a standby emergency power source start and load was required during this time interval and the fuel oil properties were outside limits, there is a high likelihood that the standby emergency power source would still be capable of performing its intended function. The adoption of above Actions and associated Required Actions to proposed ITS LCO 3.8.3 imposes additional requirements on unit operation and is more restrictive.

CTS:	ITS:
NEW	LCO 3.08.03 COND B LCO 3.08.03 COND B RA B.1 LCO 3.08.03 COND C LCO 3.08.03 COND C RA C.1

DOC Number	DOC Text
M.02 Rev. B	The CTS does not contain requirements comparable to proposed ITS SR 3.8.3.3 and SR 3.8.3.4. SR 3.8.3.3 ensures that, without the aid of the refill compressor, sufficient air start capacity for each standby emergency power source is available. The system design requirements provide the capability to start and ready the standby emergency power source to accept load in 10 seconds from receipt of a start signal. The pressure specified in this SR is intended to reflect the lowest value at which the 10 second start can be accomplished. The 31 day Frequency takes into account the capacity, capability, redundancy, and diversity of the AC sources and other indications available in the control room, including alarms, to alert the operator to below normal air start pressure. SR 3.8.3.4 requires the removal of water from each fuel oil storage tank once per 92 days. Microbiological fouling is a major cause of fuel oil degradation. There are numerous bacteria that can grow in fuel oil and cause fouling, but all must have a water environment in order to survive. Removal of water from the fuel storage tanks once every 92 days, if necessary, eliminates the environment required for bacteria survival. This is the most effective means of controlling microbiological fouling. In addition, it eliminates the potential for water entrainment in the fuel oil during standby emergency power source operation. The addition of these surveillance requirements imposes additional requirements on unit operation and are more restrictive.

CTS:	ITS:
NEW	SR 3.08.03.03 SR 3.08.03.04

Justification For Deviations - NUREG-1431 Section 3.08.03

24-Jul-00

JFD Number	JFD Text
03 Rev. A	NUREG LCO 3.8.3, Condition A has been changed to require immediately declaring inoperable any standby emergency power source associated with a fuel oil tank with less than the required fuel volume. Similarly, Condition E has been changed to require immediately declaring inoperable any standby emergency power source associated with the inoperable starting air system. These changes are consistent with the actions that would be required under these conditions, applying the current Point Beach definition of OPERABILITY.

ITS:	NUREG:
B 3.08.03	B 3.08.03
LCO 3.08.03 COND A	LCO 3.08.03 COND A
LCO 3.08.03 COND A RA A.1	LCO 3.08.03 COND A RA A.1
LCO 3.08.03 COND D	LCO 3.08.03 COND E
LCO 3.08.03 COND D RA D.1	LCO 3.08.03 COND E RA E.1
LCO 3.08.03 COND E	LCO 3.08.03 COND F
LCO 3.08.03 COND E RA E.1	LCO 3.08.03 COND F RA F.1

04 Rev. A	The brackets have been removed and the proper plant specific information has been provided.

ITS:	NUREG:
B 3.08.03	B 3.08.03
LCO 3.08.03 COND A	LCO 3.08.03 COND A
SR 3.08.03.01	SR 3.08.03.01
SR 3.08.03.03	SR 3.08.03.04
SR 3.08.03.04	SR 3.08.03.05

05 Rev. A	NUREG SR 3.8.3.4 (ITS SR 3.8.3.3) has been modified by changing, "DG air start receiver" to "standby emergency power source air start bottle bank," to be consistent with current Point Beach nomenclature.

ITS:	NUREG:
SR 3.08.03.03	SR 3.08.03.04

06 Rev. B	LCO 3.8.3 Bases contains two references to the FSAR for Design Basis Accidents. The Point Beach FSAR contains this same information in a single FSAR chapter, therefore only a single reference is used in the proposed ITS. References were renumbered as appropriate.

ITS:	NUREG:
B 3.08.03	B 3.08.03

Justification For Deviations - NUREG-1431 Section 3.08.03

24-Jul-00

JFD Number	JFD Text	
07 Rev. A	The Bases discussion of LCO 3.8.3, Proposed Condition B, Required Action B.1, has been modified. Proposed Condition B is not entered as a result of a failure to meet the acceptance criteria of SR 3.8.3.5 (Check for and remove accumulated water from each fuel oil storage tank), but rather as a result of a failure to meet the acceptance criteria of SR 3.8.3.2 (Verify fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program).	
	ITS:	**NUREG:**
	B 3.08.03	B 3.08.03
08 Rev. B	LCO 3.8.3 Bases description of new and stored fuel oil properties has been modified. The tests, limits and applicable ASTM standards for new and stored fuel oil have been revised to reflect information that will be defined in the Diesel Fuel Oil Testing Program.	
	ITS:	**NUREG:**
	B 3.08.03	B 3.08.03
09 Rev. A	The Bases discussion of ITS LCO 3.8.3, Proposed Condition C, Required Action C.1, has been modified. Proposed Condition C is not entered as a result of a failure to meet the acceptance criteria of SR 3.8.3.4 (Verify each standby emergency power source air start bottle bank pressure is greater than or equal to 165 psig), but rather as a result of a failure to meet the acceptance criteria of SR 3.8.3.2 (Verify fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program).	
	ITS:	**NUREG:**
	B 3.08.03	B 3.08.03
10 Rev. A	The Bases discussion of ITS SR 3.8.3.1 has been modified. Per Point Beach licensing basis, the required capacity of fuel oil in the storage tanks is sufficient to place the unit in a safe shutdown condition and bring in replenishment fuel from an offsite location.	
	ITS:	**NUREG:**
	B 3.08.03	B 3.08.03
11 Rev. A	The Bases discussion of ITS SR 3.8.3.3 has been modified. Per Point Beach licensing basis, the specified pressure in the air start bottle bank is the minimum required to ensure the associated standby emergency power source can be started and ready to accept load within 10 seconds from receipt of a start signal, without the aid of the refill compressor.	
	ITS:	**NUREG:**
	B 3.08.03	B 3.08.03

SURVEILLANCE REQUIREMENTS (continued)

~~operation for each DG. The [500] gal requirement is based on the DG manufacturer consumption values for the run time of the DG. Implicit in this SR is the requirement to verify the capability to transfer the lube oil from its storage location to the DG, when the DG lube oil sump does not hold adequate inventory for 7 days of full load operation without the level reaching the manufacturer recommended minimum level.~~

~~A 31 day Frequency is adequate to ensure that a sufficient lube oil supply is onsite, since DG starts and run time are closely monitored by the unit staff.~~

SR 3.8.3

The tests listed below are a means of determining whether new fuel oil is of the appropriate grade and has not been contaminated with substances that would have an immediate, detrimental impact on diesel engine combustion. If results from these tests are within acceptable limits, the fuel oil may be added to the storage tanks without concern for contaminating the entire volume of fuel oil in the storage tanks. These tests are to be conducted prior to adding the new fuel to the storage tank(s), but in no case is the time between receipt of new fuel and conducting the tests to exceed 31 days. The tests, limits, and applicable ASTM Standards are as follows:

a. Sample the new fuel oil in accordance with ASTM D4057-[ ] (Ref. 6);

b. Verify in accordance with the test specified in ASTM D975-[ ] (Ref. 6) that the sample has an absolute specific gravity at 60/60 °F of ≥ 0.83 and ≤ 0.89 or an API gravity at 60 °F of ≥ 27° and ≤ 39°, a kinematic viscosity at 40 °C of ≥ 1.9 centistokes and ≤ 4.1 centistokes, and a flash point of ≥ 125°F; and

c. Verify that the new fuel oil has a clear and bright appearance with proper color when tested in accordance with ASTM D4176-[ ] (Ref. 6).

Failure to meet any of the above limit s is cause for rejecting the new fuel oil, but does not represent a failure

BASES

SURVEILLANCE REQUIREMENTS (continued)

to meet the LCO concern since the fuel oil is not added to the storage tanks.

Within 31 days following the initial new fuel oil sample, the fuel oil is analyzed to establish that the other properties specified in Table 1 of ASTM D975-[ ] (Ref. 7) are met for new fuel oil when tested in accordance with ASTM D975-[ ] (Ref. 6), except that the analysis for sulfur may be performed in accordance with ASTM D1552-[ ] (Ref. 6) or ASTM D2622-[ ] (Ref. 6). The 31 day period is acceptable because the fuel oil properties of interest, even if they were not within stated limits, would not have an immediate effect on DG operation. This Surveillance ensures the availability of high quality fuel oil for the DGs.

for Grade Low Sulfur No. 2D

Fuel oil degradation during long term storage shows up as an increase in particulate, due mostly to oxidation. The presence of particulate does not mean the fuel oil will not burn properly in a diesel engine. The particulate can cause fouling of filters and fuel oil injection equipment, however, which can cause engine failure.

Particulate concentrations should be determined in accordance with ASTM D2276-[ ], Method A (Ref. 6). This method involves a gravimetric determination of total particulate concentration in the fuel oil and has a limit of 10 mg/l. It is acceptable to obtain a field sample for subsequent laboratory testing in lieu of field testing. ~~[For those designs in which the total stored fuel oil volume is contained in two or more interconnected tanks, each tank must be considered and tested separately.]~~

D6217-98

The Frequency of this test takes into consideration fuel oil degradation trends that indicate that particulate concentration is unlikely to change significantly between Frequency intervals.

RAI 3.8.3-2

SR 3.8.3

This Surveillance ensures that, without the aid of the refill compressor, sufficient air start capacity for each DG is available. The system design requirements provide for a minimum of [five] engine start cycles without recharging.

standby emergency power source

the capability to start and ready the standby emergency power source to accept load in 10 seconds from receipt of a start signal.

BASES

SURVEILLANCE REQUIREMENTS (continued)

Approved TSTF-2

~~hypochlorite solutions, or their equivalent, rather than soap or detergents. This SR is for preventive maintenance. The presence of sediment does not necessarily represent a failure of this SR, provided that accumulated sediment is removed during performance of the Surveillance.~~

REFERENCES

1. FSAR, Section [9.5.4.2]
2. Regulatory Guide 1.137.
3. ANSI N195-1976, Appendix B.
4. FSAR, Chapter [6]

RAI 3.8.3-2

~~5. FSAR, Chapter [15].~~

6. ASTM Standards: D4057-[ ]; D975-[ ]; D4176-[ ]; D1552-[ ]; D2622-[ ]; D2276, Method A.

7. ASTM Standards, D975, Table 1.

Approved TSTF-2

~~8. ASME, Boiler and Pressure Vessel Code, Section XI.~~

3.8.3 Inserts

3.8.3-3

There are two underground fuel oil storage tanks on site (T -175A/B). Each tank has a capacity of approximately 35,000 gallons. Sufficient fuel is normally maintained between the two tanks to allow one diesel to operate continuously at the required load for 7 days (Ref. 1). At minimum required level, which is 11,000 gallons in each emergency diesel fuel oil storage tank, one tank could provide enough fuel for an emergency diesel generator to operate for over 48 hours.

The onsite fuel oil capacity is sufficient to operate the standby emergency power sources for longer than the time to replenish the onsite supply from outside sources.

Fuel oil is transferred from storage tank to day tank by either of two transfer pumps associated with each storage tank. Redundancy of pumps and piping precludes the failure of one pump, or the rupture of any pipe, valve or tank to result in the loss of more than one train of standby emergency power sources. The Train A day tanks are normally split and the Train B day tanks are normally split, but can be cross-connected allowing either tank to supply either diesel generator in the same Train.

For proper operation of the standby emergency power sources, it is necessary to ensure the proper quality of the fuel oil. Regulatory Guide 1.137 (Ref. 2) addresses the recommended fuel oil practices as supplemented by ANSI N195 (Ref. 3). The fuel oil properties governed by these SRs are the water and sediment content, the kinematic viscosity, specific gravity (or API gravity), and impurity level.

Each standby emergency power source has an air start system capable of storing sufficient air to roll the associated diesel generator up to starting speed fast enough to complete its starting cycle and be up to final speed and voltage within 10 seconds from receipt of a start signal.

The air start system for each standby emergency power source consists of two separate and redundant starting air banks, each capable of five successive start attempts without recharging. B

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.3 Diesel Fuel Oil and Starting Air

BASES

BACKGROUND

There are two underground fuel oil storage tanks on site (T-175A/B). Each tank has a capacity of approximately 35,000 gallons. Sufficient fuel is normally maintained between the two tanks to allow one diesel to operate continuously at the required load for 7 days (Ref. 1). At minimum required level, which is 11,000 gallons in each emergency diesel fuel oil storage tank, one tank could provide enough fuel for an emergency diesel generator to operate for over 48 hours.

The onsite fuel oil capacity is sufficient to operate the standby emergency power sources for longer than the time to replenish the onsite supply from outside sources.

Fuel oil is transferred from storage tank to day tank by either of two transfer pumps associated with each storage tank. Redundancy of pumps and piping precludes the failure of one pump, or the rupture of any pipe, valve or tank to result in the loss of more than one train of standby emergency power sources. The Train A day tanks are normally split and the Train B day tanks are normally split, but can be cross-connected allowing either tank to supply either diesel generator in the same Train.

For proper operation of the standby emergency power sources, it is necessary to ensure the proper quality of the fuel oil. Regulatory Guide 1.137 (Ref. 2) addresses the recommended fuel oil practices as supplemented by ANSI N195 (Ref. 3). The fuel oil properties governed by these SRs are the water and sediment content, the kinematic viscosity, specific gravity (or API gravity), and impurity level.

Each standby emergency power source has an air start system capable of storing sufficient air to roll the associated diesel generator up to starting speed fast enough to complete its starting cycle and be up to final speed and voltage within 10 seconds from receipt of a start signal.

The air start system for each standby emergency power source consists of two separate and redundant starting air banks, each capable of five successive start attempts without recharging.

BASES

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in the FSAR, Chapter 14 (Ref. 4), assume Engineered Safety Feature (ESF) systems are OPERABLE. The standby emergency power sources are designed to provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF systems so that fuel, Reactor Coolant System and containment design limits are not exceeded. These limits are discussed in more detail in the Bases for Section 3.2, Power Distribution Limits; Section 3.4, Reactor Coolant System (RCS); and Section 3.6, Containment Systems.

Since diesel fuel oil and the air start subsystem support the operation of the standby AC power sources, they satisfy Criterion 3 of the NRC Policy Statement.

LCO

Stored diesel fuel oil is required to have sufficient capacity to support standby emergency power source operation until fuel oil can be delivered from off-site or offsite power can be restored. Onsite storage of fuel oil, in conjunction with an ability to obtain additional fuel oil if required, supports the availability of standby emergency power sources required to shut down the reactor and to maintain it in a safe condition for an anticipated operational occurrence (AOO) or a postulated DBA with loss of offsite power.

Fuel oil is also required to meet specific standards for quality.

Standby emergency power source day tank requirements, as well as fuel oil transfer capability from the storage tank to the day tank, are addressed in LCO 3.8.1, "AC Sources—Operating," and LCO 3.8.2, "AC Sources—Shutdown."

The starting air system is required to have a minimum capacity such that the standby emergency power source is capable of being started and ready to accept load in 10 seconds from receipt of a start signal.

APPLICABILITY

The AC sources (LCO 3.8.1 and LCO 3.8.2) are required to ensure the availability of the required power to shut down the reactor and maintain it in a safe shutdown condition after an AOO or a postulated DBA. Since stored diesel fuel oil and the starting air subsystem support LCO 3.8.1 and LCO 3.8.2, stored diesel fuel oil and starting air are required to be within limits when the associated standby emergency power source is required to be OPERABLE.

BASES

ACTIONS

The ACTIONS Table is modified by a Note indicating that separate Condition entry is allowed for each standby emergency power source. This is acceptable, since the Required Actions for each Condition provide appropriate compensatory actions for each inoperable standby emergency power source subsystem. Complying with the Required Actions for one inoperable standby emergency power source subsystem may allow for continued operation, and subsequent inoperable standby emergency power source subsystem(s) are governed by separate Condition entry and application of associated Required Actions.

A.1

In this Condition, the minimum required fuel supply for a standby emergency power source is not available. All standby emergency power sources that are associated with any fuel oil storage tank (T-175A or T-175B) that does not meet the 11,000 gallon requirement must be declared inoperable immediately and the applicable Conditions for the associated standby emergency power sources that are declared inoperable must be entered.

B.1

This Condition is entered as a result of a failure to meet the acceptance criterion of SR 3.8.3.2. Normally, trending of particulate levels allows sufficient time to correct high particulate levels prior to reaching the limit of acceptability. Poor sample procedures (bottom sampling), contaminated sampling equipment, and errors in laboratory analysis can produce failures that do not follow a trend.

Since the presence of particulates does not mean failure of the fuel oil to burn properly in the diesel engine, and particulate concentration is unlikely to change significantly between Surveillance Frequency intervals, and proper engine performance has been recently demonstrated (within 31 days), it is prudent to allow a brief period prior to declaring the associated standby emergency power source inoperable. The 7 day Completion Time allows for further evaluation, resampling and re-analysis of the standby emergency power source fuel oil.

C.1

With the new fuel oil properties defined in the Diesel Fuel Oil Testing Program for SR 3.8.3.2 not within the required limits, a period of 30 days is allowed for restoring the stored fuel oil properties. This period provides sufficient time to test the stored fuel oil to determine that the new fuel oil, when mixed with previously stored fuel oil, remains

BASES

ACTIONS (continued)

acceptable, or to restore the stored fuel oil properties. This restoration may involve feed and bleed procedures, filtering, or combinations of these procedures. Even if a standby emergency power source start and load was required during this time interval and the fuel oil properties were outside limits, there is a high likelihood that the standby emergency power source would still be capable of performing its intended function.

D.1

With one or more standby emergency power sources' starting air system not within limits, the associated standby emergency power source may be incapable of performing its intended function and must be immediately declared inoperable.

E.1

With a Required Action and associated Completion Time of Condition B or C not met, or one or more standby emergency power source's fuel oil not within limits for reasons other than addressed by Conditions B or C, the associated standby emergency power source may be incapable of performing its intended function and must be immediately declared inoperable.

SURVEILLANCE REQUIREMENTS

SR 3.8.3.1

This SR provides verification that there is an adequate inventory of fuel oil in the storage tanks to support operation of each standby emergency power source. The required fuel oil capacity is sufficient to place the unit in a safe shutdown condition and to bring in replenishment fuel from an offsite location.

The 31 day Frequency is adequate to ensure that a sufficient supply of fuel oil is available, since low level alarms are provided and unit operators would be aware of any large uses of fuel oil during this period.

SR 3.8.3.2

The tests listed in the Diesel Fuel Oil Testing Program are a means of determining whether new fuel oil is of the appropriate grade and has not been contaminated with substances that would have an immediate, detrimental impact on diesel engine combustion. If results from these tests are within acceptable limits, the fuel oil may be added to the storage tanks without concern for contaminating the entire volume of fuel oil in the storage tanks. These tests are to be conducted in accordance with the Diesel Fuel Oil Testing Program.

BASES

SURVEILLANCE REQUIREMENTS (continued)

The tests, limits and applicable ASTM Standards are as follows:

a. Sample the new fuel oil in accordance with ASTM D4057-88 (Ref. 5);

RAI 3.8.3-2

b. Verify in accordance with the test specified in ASTM D1298-99 (Ref. 5) that the sample has an absolute specific gravity at 60/60°F of ≥ 0.83 and ≤ 0.89 or an API specific gravity at 60°F of ≥27° and ≤ 39°. Verify in accordance with tests specified in ASTM D975-98b (Ref. 6) a kinematic viscosity at 40°C of ≥ 1.9 centistokes and ≤ 4.1 centistokes, and a flashpoint of ≥ 125°F; and

c. Verify that the new fuel oil has a clear and bright appearance with proper color when testing in accordance with ASTM D4176-91 (Ref. 5).

Failure to meet any of the above limits is cause for rejecting the new fuel oil, but does not represent a failure to meet the LCO concern since the fuel oil is not added to the storage tanks.

Within 31 days following the initial new fuel oil sample, the fuel is analyzed to establish that the other properties specified in Table 1 for Grade Low Sulfur No. 2D of ASTM D975-98b (Ref. 6) are met for new fuel oil when tested in accordance with ASTM D975-98b (Ref. 6), except that the analysis for sulfur may be performed in accordance with ASTM D1552-95 (Ref. 5) or ASTM D 2622-98 (Ref. 5). The 31 day period is acceptable because the fuel oil properties of interest, even if they were not within stated limits, would not have an immediate effect on DG operation. This Surveillance ensures the availability of high quality fuel oil for the DGs.

Fuel oil degradation during long term storage shows up as an increase in particulate, due mostly to oxidation. The presence of particulate does not mean the fuel oil will not burn properly in a diesel engine. The particulate can cause fouling of filters and fuel oil injection equipment, however, which can cause engine failure.

Particulate concentrations should be determined in accordance with ASTM D6217-98, Method A (Ref. 5). This method involves gravimetric determination of total particulate concentration in the fuel oil and has a limit of 10 mg/ml. It is acceptable to obtain a field sample for subsequent laboratory testing.

RAI 3.8.3-2

The Frequency of this test takes into consideration fuel oil degradation trends that indicate that particulate concentration is unlikely to change significantly between Frequency intervals.

SR 3.8.3.3

This Surveillance ensures that, without the aid of the refill compressor, sufficient air start capacity for each standby emergency power source is available. The system design requirements provide the capability to start and ready the standby emergency power source to accept load in 10 seconds from receipt of a start signal. The pressure specified in this SR is intended to reflect the lowest value at which the 10 second start can be accomplished. The 31 day Frequency takes into account the capacity, capability, redundancy, and diversity of the AC sources and other indications available in the control room, including alarms, to alert the operator to below normal air start pressure.

SR 3.8.3.4

Microbiological fouling is a major cause of fuel oil degradation. There are numerous bacteria that can grow in fuel oil and cause fouling, but all must have a water environment in order to survive. Removal of water from the fuel storage tanks once every 92 days eliminates the necessary environment for bacterial survival. This is the most effective means of controlling microbiological fouling. In addition, it eliminates the potential for water entrainment in the fuel oil during standby emergency power source operation. Water may come from any of several sources, including condensation, ground water, rain water, and contaminated fuel oil, and from breakdown of the fuel oil by bacteria. Frequent checking for and removal of accumulated water minimizes fouling and provides data regarding the watertight integrity of the fuel oil system. The Surveillance Frequencies are established by Regulatory Guide 1.137 (Ref. 2). This SR is for preventive maintenance. The presence of water does not necessarily represent failure of this SR, provided the accumulated water is removed during performance of the Surveillance.

BASES

REFERENCES

1. FSAR. Section 8.8.
2. Regulatory Guide 1.137.
3. ANSI N195-1976, Appendix B.
4. FSAR, Chapter 14.
5. ASTM Standards: D4057-88; D1298-99; D4176-91; D1552-95; D2622-98; D6217-98, Method A.
6. ASTM Standards D975-98b, Table 1.

B
RAI 3.8.3-2

DOC Number	DOC Text
A.05 Rev. A	CTS 15.3.7.A.1.f and g require four of the five safety related batteries and four chargers operable, with the charger carrying the DC loads on each safety related distribution bus. These requirements establish the normal operational configuration for the DC system whenever a unit is operating (above 200 degrees as described in Discussion of Change A.04 of this LCO). Proposed ITS LCO 3.8.4 requires the D01, D02, D03, and D04 electrical power subsystems to be operable. The Point Beach DC power distribution systems consists of four safety related distribution systems, with five batteries and six chargers. One of the five batteries and two of the six chargers are connected to a swing buses which can be aligned to supply DC power to the safety related distribution systems. Stating that the D01, D02, D03, and D04 DC electrical power subsystems are required to be operable, will establish a requirement to maintain one battery and one charger operable for each safety related bus, making the proposed ITS equivalent to the CTS. The requirement for the battery charger to be carrying the DC loads on the distribution bus is a design statement. Proposed ITS SR 3.8.9.1 in combination with the SRs specified in this LCO, require the safety related DC buses to be energized from an operable battery and chargers. The function of the battery chargers is to supply their respective DC loads, while maintaining the batteries at full charge. All of the battery chargers are powered from the 480 VAC ESF system. Transient operations and loss of AC power situations may temporarily result in the charger not carrying the DC loads associated with its respective bus, however operability of the bus is not impaired. The DC distribution system (i.e. DC buses, chargers and batteries), are designed/sized for transient operations/loss of offsite power conditions. The battery chargers are interlocked such that a loss of offsite power combined with a safety injection signal will disconnect the battery chargers from their 480 VAC source. This limits the loading on the standby emergency power supply during the period immediately following a safety injection signal. During this period, the 125 VDC loads are supplied by their associated station battery until such time as power to the chargers is restored. Based on the above information, the proposed ITS is provides a more accurate representation of the safety related DC power sources design basis, consistent with the format contained in NUREG 1431. These changes are administrative. **CTS:** — **ITS:** 15.03.07.A.01.f — LCO 3.08.04 15.03.07.A.01.g — LCO 3.08.04
A.06 Rev. A	The Bases of the current Technical Specifications for this section have been completely replaced by revised Bases that reflect the format and applicable content of PBNP ITS, consistent with the Standard Technical Specifications for Westinghouse Plants, NUREG-1431. The revised Bases are as shown in the PBNP ITS Bases. **CTS:** — **ITS:** BASES — B 3.08.04

DOC Number	DOC Text
A.07 Rev. A	The CTS states that during power operation of one or both of the reactors, the requirements of Specification 15.3.7.A.1 (electrical power distribution) may be modified to allow certain defined inoperabilies to exist for a limited period of time. This Specification establishes the structure for the remedial actions in the CTS. The ITS contains specific usage rules for consistent application of the Conditions and Required Actions associated with varying inoperabilities consistent with the format and presentation of NUREG 1431. Accordingly, deletion of a specific Specification directing usage of Actions is unnecessary, as it duplicates the ITS usage rules. This change is administrative. **CTS:** 15.03.07.B.01 **ITS:** DELETED
A.08 Rev. B	CTS 15.3.7.B.1.k requires the applicable LCO Actions to be entered for equipment affected by a deenergized safeguards bus. This Action is consistent with the definition of operability which requires normal and emergency power for a system, subsystem, train, component, or device to be operable. In addition to the proposed ITS Actions to restore inoperable DC power subsystems within 2 hours, the proposed ITS will also require the applicable Conditions and Required Actions of LCO 3.8.9 to be entered if the DC bus is deenergized. LCO 3.8.9 will in turn require that the affected equipment be declared inoperable, resulting in entry into the applicable Required Actions for the inoperable equipment. This allows Condition A of the proposed ITS to provide requirements for the inoperability of a battery or charger, without regard to whether a bus is de-energized, allowing LCO 3.8.9 and the supported systems LCO Actions to provide the appropriate restrictions for a de-energized bus. This proposed Required Action is consistent with the CTS, making this change administrative. **CTS:** 15.03.07.B.01.k **ITS:** LCO 3.08.04 COND A RA A.1 NOTE

A.1

15.4.6EMERGENCY POWER SYSTEM PERIODIC TESTS

LCO 3.8.4 A.2

Applicability

Applies to periodic testing and surveillance requirements of the emergency power system.

A.3

Objective

To verify that the emergency power system will respond promptly and properly when required.

Specification

< See LCO 3.8.1 >

The following tests and surveillance shall be performed as stated:

A. Diesel Generators

1. Manually-initiated start of the diesel generator, followed by manual synchronization with other power sources and assumption of load by the diesel generator shall not exceed 2850KW. This test will be conducted monthly with a minimum running time of 30 minutes on each diesel generator. Normal plant operation will not be affected.
2. Automatic start of each diesel generator, load shedding, and restoration to operation of particular vital equipment, initiated by an actual interruption of normal AC station service power supplies to associated engineered safety systems busses together with a simulated safety injection signal. In addition, after the diesel generator has carried its load for a minimum of 5 minutes, automatic load shedding and restoration of vital loads are tested again by manually tripping the diesel generator output breaker. This test will be conducted during reactor shutdown for major fuel reloading of each reactor to assure that the diesel generator will start and assume required load in accordance with the timing sequence listed in FSAR Section 8.8 after the initial starting signal.

See Insert 3.8.4-4
Add new SRs 3.8.4.2, 3.8.4.3, 3.8.4.4, 3.8.4.5, and 3.8.4.6.

M.3

B

Insert 3.8.4-1:

A.08

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One DC electrical power subsystem inoperable.	----------NOTE---------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," when any DC bus is de-energized. ---------- A.1 Restore DC electrical power subsystem to OPERABLE status.	2 hours
B. Required Action and Associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

M.01

B

RAI 3.8.4-1

M.01

Insert 3.8.4-2:

SURVEILLANCE	FREQUENCY
SR 3.8.4.7 ----------NOTES---------- The modified performance discharge test in SR 3.8.4.8 may be performed in lieu of the service test in SR 3.8.4.7 once per 60 months. ---------- Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.	18 months

M.05

Justification For Deviations - NUREG-1431 Section 3.08.04

26-Jul-00

JFD Number	JFD Text
01 Rev. A	NUREG 1431, LCO 3.8.4, has been modified to reflect the Point Beach design. The Point Beach safety related 125 VDC system consists of four main distribution buses: D01, D02, D03, and D04, in addition to two swing distribution buses (D301 and D302). Each of the swing buses are capable of supplying one of the four safety related 125 VDC buses. Each of the four main distribution buses is powered by a battery charger (D07, D08, D107 and D108) and a station battery (D05, D06, D105, and D106). Two swing battery chargers and one swing battery are capable of being aligned to any one of the four safety related main distribution buses to take the place of the normal battery and charger. The swing battery chargers and battery allow the normally on-line battery chargers and batteries to be removed from service for maintenance and testing that cannot be performed with the battery or charger on-line. **ITS:** B 3.08.04; LCO 3.08.04 **NUREG:** B 3.08.04; LCO 3.08.04
02 Rev. B	A Note has been added to the Actions Table of LCO 3.8.4 which requires entry into the Applicable Conditions and Required Actions of LCO 3.8.9 for any DC bus which is de-energized. The Conditions and Required Action contained in NUREG 1431 LCO 3.8.9 will in turn require that the features supported by any inoperable (deenergized) bus be declared inoperable immediately. Declaring the associated supported features inoperable will require entry into the Required Actions for the associated supported features, directing the appropriate Actions, based on the level of degradation incurred, because the Required Actions will be driven based upon plant conditions and the features which are affected. This deviation is consistent with the CTS definition of operability and the CTS Actions which require the applicable LCO Actions to be entered for equipment affected by deenergized safeguards buses. **ITS:** B 3.08.04; LCO 3.08.04 COND A RA A.1 NOTE **NUREG:** B 3.08.04; N/A
03 Rev. A	NUREG SR 3.8.4.1 requires battery terminal voltage to be verified greater than or equal to a specific value. The CTS requires periodic verification of battery voltage but does not contain a specific limit. Proposed SR 3.8.4.1 will require battery terminal voltage to be verified within limits. This change is necessary to reflect the differing operating voltages for the Point Beach DC buses. The number of individual cells used in the safety related battery banks differ. Float voltage for batteries D05 and D06 is greater than or equal to 128 V and batteries D105 and D106 are greater than or equal to 130.2 V. This deviation is consistent with the CTS. **ITS:** B 3.08.04; SR 3.08.04.01 **NUREG:** B 3.08.04; SR 3.08.04.01

Justification For Deviations - NUREG-1431 Section 3.08.04

26-Jul-00

JFD Number	JFD Text
04 Rev. A	NUREG 1431 SR 3.8.4.2 and SR 3.8.4.5 specify connector resistance limits which must be met for a battery to be considered operable. The connection resistance limits are to be no more than 20% above the resistance as measured during installation, or not above the ceiling value established by the manufacturer. The current Technical Specification do not contain any tests or limitation for connector resistance, and based on the resistance limit being variable, this limit would be more appropriately controlled by the licensee.

ITS:	NUREG:
B 3.08.04	B 3.08.04
SR 3.08.04.02	SR 3.08.04.02
SR 3.08.04.05	SR 3.08.04.05

05 Rev. A	The brackets have been removed and the proper plant specific information has been provided.

ITS:	NUREG:
B 3.08.04	B 3.08.04
SR 3.08.04.03	SR 3.08.04.03
SR 3.08.04.04	SR 3.08.04.04
SR 3.08.04.05	SR 3.08.04.05
SR 3.08.04.06	SR 3.08.04.06
SR 3.08.04.07	SR 3.08.04.07
SR 3.08.04.08	SR 3.08.04.08

3.8 ELECTRICAL POWER SYSTEMS

3.8.4 DC Sources–Operating

1

The D-01, D-02, D-03, and D-04 DC electrical power subsystems shall be OPERABLE.

LCO 3.8.4 The Train A and Train B DC electrical power subsystems shall be OPERABLE.

2

NOTE

Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems–Operating," when any DC bus is de-energized.

APPLICABILITY: MODES 1, 2, 3, and 4.

B

RAI 3.8.4-1

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One DC electrical power subsystem inoperable.	A.1 Restore DC electrical power subsystem to OPERABLE status.	2 hours
B. Required Action and Associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.4.1 Verify battery terminal voltage is ≥ [129] V on float charge.	7 days

(continued)

within limits

3

3.8 ELECTRICAL POWER SYSTEMS

3.8.4 DC Sources—Operating

LCO 3.8.4 The D-01, D-02, D-03, and D-04 DC electrical power subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

B

RAI 3.8.4-1

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One DC electrical power subsystem inoperable.	----------NOTE---------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems—Operating," when any DC bus is de-energized. ----------	
	A.1 Restore DC electrical power subsystem to OPERABLE status.	2 hours
B. Required Action and Associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	AND	
	B.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.4.1	Verify correct battery terminal voltage is within limits on float charge.	7 days

(continued)

Description of Changes - NUREG-1431 Section 3.08.06

24-Jul-00

DOC Number	DOC Text
A.04 Rev. A	ITS LCO 3.8.4 establishes the conditions whereby the station DC electrical power subsystems are required to be OPERABLE to ensure the availability of the required power to shutdown the reactor, and maintain it in a safe shutdown condition following an anticipated operational occurrence or a postulated DBA. ITS LCO 3.8.5 establishes the conditions whereby the DC electrical power subsystems are required to be OPERABLE to ensure the availability of sufficient DC electrical power sources to operate the unit in a safe manner and to mitigate the consequences of postulated accidents during shutdown. One of the required components of the DC electrical subsystems are station batteries. ITS LCO 3.8.6 will require the battery cell parameters necessary to support the associated DC electrical power subsystems to be within limits; thus ensuring the batteries are OPERABLE. By default the applicability of LCO 3.8.6 is consistent with the requirements of LCO 3.8.4 (See LCO 3.8.4 Discussion of Changes A.4) and LCO 3.8.5 (See LCO 3.8.5 Discussion of Changes M.1).

CTS:	ITS:
15.03.07.A.01	LCO 3.08.06
15.03.07.A.01.F	LCO 3.08.06
15.04.06.B	LCO 3.08.06

A.05 Rev. A	The Bases of the current Technical Specifications for this section have been completely replaced by revised Bases that reflect the format and applicable content of PBNP ITS, consistent with the Standard Technical Specifications for Westinghouse Plants, NUREG-1431. The revised Bases are as shown in the PBNP ITS Bases.

CTS:	ITS:
BASES	B 3.08.06

L.01 Rev. B	CTS 15.4.6.B.2 contains requirements to measure and record the specific gravity, the height of electrolyte and water added for each cell and the temperature of every fifth cell every 3 months. The requirement to measure and record the amount of water added for each cell, as well as the details regarding which cells are measured for temperature are not required to be in ITS to define the Surveillances necessary to ensure battery operability and provide adequate protection of the public health and safety. In addition, the trending requirement of CTS 15.4.6.B.3 is being relocated to licensee procedures. Program details are not required to be in the Technical Specifications.

CTS:	ITS:
15.04.06.B.02	N/A
15.04.06.B.03	N/A

LA.01 Rev. B	Not used.

CTS:	ITS:
N/A	N/A

A.1

15.4.6EMERGENCY POWER SYSTEM PERIODIC TESTS

LCO 3.8.6 A.2

Applicability

Applies to periodic testing and surveillance requirements of the emergency power system.

A.3

Objective

To verify that the emergency power system will respond promptly and properly when required.

Specification < See LCO 3.8.1 >

The following tests and surveillance shall be performed as stated:

A. Diesel Generators

1. Manually-initiated start of the diesel generator, followed by manual synchronization with other power sources and assumption of load by the diesel generator shall not exceed 2850KW. This test will be conducted monthly with a minimum running time of 30 minutes on each diesel generator. Normal plant operation will not be affected.

2. Automatic start of each diesel generator, load shedding, and restoration to operation of particular vital equipment, initiated by an actual interruption of normal AC station service power supplies to associated engineered safety systems busses together with a simulated safety injection signal. In addition, after the diesel generator has carried its load for a minimum of 5 minutes, automatic load shedding and restoration of vital loads are tested again by manually tripping the diesel generator output breaker. This test will be conducted during reactor shutdown for major fuel reloading of each reactor to assure that the diesel generator will start and assume required load in accordance with the timing sequence listed in FSAR Section 8.8 after the initial starting signal.

No Significant Hazards Considerations - NUREG-1431 Section 3.08.06

26-Jul-00

NSHC Number	NSHC Text
L.01 Rev. B	In accordance with the criteria set forth in 10 CFR 50.92, PBNP has evaluated this proposed Technical Specifications change and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion. 1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated? The specific requirements related to measurement of the amount of water to a battery cell, which cells have temperature measured, and the requirement to trend Surveillance information are not necessary to define the requirement. Surveillances still require monitoring of electrolyte level and temperature and provide the appropriate operability requirements for the batteries. Trending is not necessary to determine the operability of the batteries at a given point in time. Therefore, the Surveillances and acceptance criteria ensure OPERABILITY of the batteries and therefore, their safety function will continue to be met. Elimination of these requirements cannot cause a significant increase in the probability or consequences of any accident previously evaluated. 2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated? The battery Surveillances defined by the ITS continue to provide adequate monitoring to ensure battery operability. The function or method of function of the batteries is not changed by the elimination of these specific requirements. In addition, no additional changes to the plant design or operation are required by this change. Therefore, no new or different kind of accident from any accident previously evaluated is created. 3. Does this change involve a significant reduction in a margin of safety? The required Surveillances provide for the appropriate monitoring of battery conditions and provide the required limits to ensure the batteries remain operable and capable of performing their design functions in accordance with all design requirements and analyses. Therefore, a significant reduction in a margin of safety cannot occur.
LA Rev. B	Not used.

LCO 3.8.9 Bases Inserts

Insert B 3.8.9-4 (continued):

B.1 and B.2

If the required features associated with inoperable electrical power distribution subsystems are not declared inoperable, the unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the unit must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging plant systems.

Insert B 3.8.9-5:

For the 480 VAC buses B03 and B04, correct breaker alignment includes verification that the bus cross tie breakers are open with control power removed, when the system is not aligned in accordance with Note 1 or 2 of the LCO. This ensures the appropriate separation and independence of the electrical divisions is maintained. Correct breaker alignment provides assurance that the appropriate voltage is available to each required bus for motive as well as control functions for critical system loads. B

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.9 Distribution Systems-Operating

BASES

BACKGROUND

The onsite Class 1E AC, DC, and AC vital instrument bus electrical power distribution systems are divided into redundant and independent AC, DC, and AC vital instrument bus electrical power distribution subsystems.

The AC electrical power subsystem for each train consists of a 4.16 kV Safeguards bus and 480 V buses and motor control centers. Each 4.16 kV Safeguards bus has an offsite source of power as well as a standby emergency power source. Each 4.16 kV Safeguards bus is normally connected to the preferred offsite source. After a loss of the preferred offsite power source, the standby emergency power source supplies power to the 4.16 kV Safeguards buses. Control power for the 4.16 kV breakers is supplied from the Class 1E batteries. Additional description of this system may be found in the Bases for LCO 3.8.1, "AC Sources-Operating," and the Bases for LCO 3.8.4, "DC Sources-Operating."

The 480 VAC electrical power distribution system for each train includes the safety related load centers and motor control centers shown in Table B 3.8.9-1. Cross tie breakers between the B03 and B04 buses have been provided for diversity and to facilitate maintenance and testing activities. These breakers open on a safety injection or loss of bus voltage signal from the associated unit/buses. The normal configuration for these breakers is open with control power removed.

The 120 VAC Vital Instrument System (Y) provides power to various instrument racks for the Reactor Protection System (RPS), the Engineered Safety Feature (ESF) Actuation System, the Nuclear Steam Supply System (NSSS) Controls, and other miscellaneous instrumentation and control systems.

The 120 VAC instrument supply system consists of sixteen buses, divided among four channels. Each of the four channels (red, white, blue, and yellow) have four buses. The four channel buses are further subdivided into two bus groups, one group serving Unit 1 and the other serving Unit 2. Each channel has three inverters; one inverter is dedicated to the Unit 1 bus group, the second inverter is dedicated to the Unit 2 bus group. The third inverter is an alternate, and can be used as an alternate for either Unit 1 or Unit 2.

The inverters are powered from the 125 VDC system. The three inverters associated with the same channel (red, white, blue, and

BASES

BACKGROUND (continued)

yellow) are powered from the same 125 VDC bus. The red channel inverters (1/2DY01 and DY0A) are powered from bus DO1, the blue channel inverters (1/2DY02 and DY0B) are powered from bus DO2, and the white (1/2DY03 and DY0C) and yellow channel (1/2DY04 and DY0D) inverters are powered directly from buses DO3 and DO4, respectively.

Each instrument channel can be powered from a backup power source. The backup power source is from Y15 or Y16 buses which are supplied from 480 V bus B09 via regulating transformer XY08. The output of each inverter is connected to a static transfer switch that will automatically transfer the associated instrument buses to the backup power source in the event of an inverter failure. The backup source is designed to maintain power to affected buses only until they can be manually transferred back to an operable inverter.

Instrument Buses Y01/Y101, Y02/Y102, Y03/Y103, and Y04/Y104 must each be supplied by independent, battery-backed sources to ensure that a single failure combined with a loss of offsite power will not prevent mitigation of a design basis accident.

The safety-related 125 VDC system consists of four main distribution buses: D01, D02, D03, and D04, in addition to two swing buses (D301 and D302) each capable of supplying one of the four 125 VDC buses.

Each of the four main distribution buses is powered by a battery charger (D07, D08, D107 and D108) and a station battery (D05, D06, D105, and D106). The function of the battery chargers is to supply their respective DC loads, while maintaining the batteries at full charge. All of the battery chargers are powered from 480 VAC Safeguards buses.

The battery chargers are interlocked such that a loss of offsite power combined with a safety injection signal will disconnect the battery chargers from their 480 VAC source. This limits the loading on the standby emergency power supply during the period immediately following a safety injection signal. During this period, the 125 VDC loads are supplied by their associated station battery until such time as power to the chargers is restored.

Two swing battery chargers are available through one of the swing DC distribution buses. Swing charger D09 is connected to swing DC distribution bus D301 and can provide a source of DC power to distribution buses D01 or D02. Likewise, swing charger D109 is connected to swing DC distribution bus D302 and can provide a source of DC power to distribution buses D03 or D04. In addition, there exists a swing safety-related battery D305 which is connected to swing DC

BASES

BACKGROUND (continued)

distribution bus D301. This swing battery is capable of being aligned to any one of the four main distribution buses to take the place of the normal battery. Interlocks exist on swing DC distribution buses D301 and D302 which prevent the paralleling of redundant DC buses.

The list of all required distribution buses is presented in Table B 3.8.9-1.

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in the FSAR, Chapter 14 (Ref. 1), assume ESF systems are OPERABLE. The AC, DC, and AC vital instrument bus electrical power distribution systems are designed to provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF systems so that the fuel, Reactor Coolant System, and containment design limits are not exceeded. These limits are discussed in more detail in the Bases for Section 3.2, Power Distribution Limits; Section 3.4, Reactor Coolant System (RCS); and Section 3.6, Containment Systems.

The OPERABILITY of the AC, DC, and AC vital instrument bus electrical power distribution systems is consistent with the initial assumptions of the accident analyses and is based upon meeting the design basis of the unit. This includes maintaining power distribution systems OPERABLE during accident conditions in the event of:

a. An assumed loss of all offsite power or all onsite AC electrical power; and

b. A worst case single failure.

The distribution systems satisfy Criterion 3 of the NRC Policy Statement.

LCO

The required power distribution subsystems listed in Table B 3.8.9-1 ensure the availability of AC, DC, and AC vital instrument bus electrical power for the systems required to shut down the reactor and maintain it in a safe condition after an anticipated operational occurrence (AOO) or a postulated DBA. The AC, DC, and AC vital instrument bus electrical power distribution subsystems are required to be OPERABLE.

Maintaining the AC, DC, and AC vital instrument bus electrical power distribution subsystems OPERABLE ensures that the redundancy incorporated into the design of ESF is not defeated. Therefore, a single failure within any system or within the electrical power distribution subsystems will not prevent safe shutdown of the reactor.

BASES

LCO (continued)

OPERABLE AC electrical power distribution subsystems require the associated buses and motor control centers to be energized to their proper voltages. OPERABLE DC electrical power distribution subsystems require the associated buses to be energized to their proper voltage. OPERABLE vital instrument bus electrical power distribution subsystems require the associated buses to be energized to their proper voltage.

In addition, cross tie breakers between redundant safety related 480 VAC buses must be open. This prevents any electrical malfunction in any power distribution subsystem from propagating to the redundant subsystem that could cause the failure of a redundant subsystem and a loss of essential safety function(s).

This includes a failure of a tie breaker to trip, which under certain conditions could result in an overload and a loss of the associated diesel generator.

The LCOs permit abnormal electrical distribution lineups for a unit in MODE 5 or 6, or defueled, to facilitate maintenance and testing.

When a unit is in MODE 5 or 6, or defueled, the safeguards and safe shutdown systems and equipment associated with that unit are not required to be OPERABLE. However, shared equipment (e.g., Service Water, Auxiliary Feedwater, etc;) in support of a unit in MODE 1, 2, 3, or 4, and residual heat removal for the unit in MODE 5 or 6 or defueled must be considered.

With one unit in MODE 1, 2, 3, or 4 and the other unit in MODE 5 or 6, or defueled, the B03 and B04 buses on the unit in MODE 5 or 6, or defueled, may be cross tied for ≤ 8 hours providing:

a. All required redundant shared equipment (Auxiliary Feedwater and Service Water Systems), powered from the unit in MODE 1, 2, 3, or 4 are OPERABLE;

b. The normal offsite power supply and standby emergency power source for the required redundant shared equipment (Auxiliary Feedwater and Service Water Systems), powered from the unit in MODE 1, 2, 3, or 4 are OPERABLE; and

This configuration is considered acceptable for a limited period of time based on maintaining all required redundant shared equipment and their associated power sources for the unit in MODE 1, 2, 3, or 4 in an OPERABLE status, retaining redundancy in residual heat removal for the unit in MODE 5 or 6, in addition to the probability for an event resulting in a bus fault or loss of offsite power with a failure of the bus cross tie breaker to open.

BASES

LCO (continued)

With one unit in MODE 1, 2, 3, or 4 and the other unit defueled, the B03 and B04 buses on the defueled unit may be cross tied for > 8 hours providing:

a. All required redundant shared equipment (Auxiliary Feedwater and Service Water Systems), powered from the unit in MODE 1, 2, 3, or 4 are OPERABLE;

b. The normal offsite power supply and standby emergency power source for the required redundant shared equipment (Auxiliary Feedwater and Service Water Systems), powered from the unit in MODE 1, 2, 3, or 4 are OPERABLE; and

c. Loads on the B03 and B04 buses on the defueled unit are limited in such a fashion as to preclude the possibility of overloading the standby emergency power source associated with these buses.

This configuration is considered acceptable based on maintaining all required redundant shared equipment and their associated power sources for the unit in MODE 1, 2, 3, or 4 in an OPERABLE status, and limiting the loads on the shutdown unit's B03 and B04 buses such that a single failure in either unit which could affect required redundant feature can still be postulated without a loss of safety function.

If any tie breakers is closed outside of the allowances outlined above, the affected electrical power distribution buses are inoperable. This applies to the onsite, safety related redundant electrical power distribution subsystems. It does not, however, preclude redundant Class 1E 4.16 kV buses from being powered from the same offsite power supply.

APPLICABILITY

The electrical power distribution subsystems are required to be OPERABLE in MODES 1, 2, 3, and 4 to ensure that:

a. Acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of AOOs or abnormal transients; and

b. Adequate core cooling is provided, and containment OPERABILITY and other vital instrument functions are maintained in the event of a postulated DBA.

Electrical power distribution subsystem requirements for MODES 5 and 6 are covered in the Bases for LCO 3.8.10, "Distribution Systems-Shutdown."

BASES

ACTIONS

A.1

With one required distribution subsystem (i.e., 4.16 kV safeguards bus, 480 VAC safeguards bus or motor control center, 125 VDC safeguards DC distribution bus, or vital instrument bus) inoperable, the remaining AC electrical power distribution subsystems are capable of supporting the minimum safety functions necessary to shut down the reactor and maintain it in a safe shutdown condition, assuming no single failure. The overall reliability is reduced, however, because a single failure in the remaining power distribution subsystems could result in the minimum required ESF functions not being supported. Required Action A.1 requires all required features associated with an inoperable distribution subsystem to be declared inoperable immediately. This Required Action ensures that the appropriate Required Actions for support equipment are entered and taken.

With more than one required bus inoperable, entry into the associated Conditions and Required Actions for the affected required feature will ensure that the appropriate Required Actions are taken if redundant required features are inoperable.

B.1 and B.2

If the required features associated with inoperable electrical power distribution subsystems are not declared inoperable, the unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the unit must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.8.9.1

This Surveillance verifies that the required AC, DC, and AC vital instrument bus electrical power distribution systems are functioning properly, with the correct circuit breaker alignment. For the 480 VAC buses B03 and B04, correct breaker alignment includes verification that the bus cross tie breakers are open with control power removed, when the system is not aligned in accordance with Note 1 or 2 of the LCO. This ensures the appropriate separation and independence of the electrical divisions is maintained. Correct breaker alignment provides assurance that the appropriate voltage is available to each required bus for motive as well as control functions for critical system loads. B

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SURVEILLANCE REQUIREMENTS (continued)	The 7 day Frequency takes into account the redundant capability of the AC, DC, and AC vital instrument bus electrical power distribution subsystems, and other indications available in the control room that alert the operator to subsystem malfunctions.
REFERENCES	1. FSAR. Chapter 14.

Table B 3.8.9-1
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AC and DC Electrical Power Distribution Systems

TYPE	VOLTAGE	TRAIN A	TRAIN B
AC safety buses	4160 VAC 480 VAC	1A05/2A05 1B03/2B03 Motor Control Centers 1B32/2B32 1B30/2B30	1A06/2A06 1B04/2B04 Motor Control Centers 1B42/2B42 1B40/2B40
DC buses	125 VDC	Buses D01 D03	Buses D02 D04
Unit 1 AC vital instrument buses	120 VAC	Red Channel Buses 1Y01/1Y101 White Channel Buses 1Y03/1Y103	Blue Channel Buses 1Y02/1Y102 Yellow Channel Buses 1Y04/1Y104
Unit 2 AC vital instrument buses	120 VAC	Red Channel Buses 2Y01/2Y101 White Channel Buses 2Y03/2Y103	Blue Channel Buses 2Y02/2Y102 Yellow Channel Buses 2Y04/2Y104