SUMMARY OF CHANGES
ITS SECTION 3.7

Change Description	Affected Pages
A self-identified change for ITS 3.7.1, 3.7.2, 3.7.4, 3.7.5, 3.7.7, 3.7.8, 3.7.10, and 3.7.13, and CTS 3/4.7.7 and 3/4.7.8, has been made. CTS Amendments 281 (Unit 1) and 265 (Unit 2) have been incorporated into the ITS submittal. This CTS change adopted the allowances of TSTF-359 and affects CTS 3.7.1.1 Action c, CTS 3.7.1.5 Actions, CTS 3.7.1.2 new Action d, CTS 3.7.3.1 Actions, CTS 3.7.4.1 Action B.2, CTS 3.7.5.1 Action f, CTS 3.7.13 Action b, and CTS 3.7.7.1 (Unit 1) and CTS 3.7.8.1 (Unit 2) Action b. The change also affects ITS 3.7.4 (deleted Required Action A.1 Note) and ITS 3.7.5 (added ACTIONS Note).	Pages 5, 9, 14, 41, 45, 46, 95, 104, 111, 113, 125, 129, 139, 140, 150, 177, 179, 200, 202, 245, 249, 254, 342, 346, 353, 354, 466, and 468 of 503.
A self-identified change for ITS 3.7.4 Bases has been made. This change revises the ITS 3.7.4 Bases Applicable Safety Analyses Section, second paragraph, to add a third sentence stating "However, automatic actuation of the SG PORVs is not credited."	Page 102 of 503.
The change described in the response to Question 200406211324 for ITS 3.7.5 Bases has been made. This change revises the ITS SR 3.7.5.1 Bases to clarify that the proper flow path for the Auxiliary Feedwater (AFW) System is one of two suction flow paths, either from the condensate storage tank or from the Essential Service Water (ESW) System.	Pages 131, 142, and 143 of 503.
A self-identified change for ITS 3.7.5 Bases has been made. This change revises the ITS 3.7.5 Bases LCO Section, second paragraph, to change the phrase "any of the steam generators" to "all of the steam generators" in the fourth sentence.	Page 137 of 503.
The change described in the response to Question 200409200946 for ITS 3.7.10 (Beyond Scope Issue 03.g) has been made. This change revises the Frequency for ITS SR 3.7.10.1 to "46 days on a STAGGERED TEST BASIS."	Pages 246, 250, 258, 259, 262, 265, and 277 of 503.
The change described in the response to Question 200409200950 for ITS 3.7.12 (Beyond Scope Issue 03.h) has been made. This change revises the Frequency for ITS SR 3.7.12.1 to "46 days on a STAGGERED TEST BASIS."	Pages 308, 311, 316, 317, 318, 322, 323, and 330 of 503.
A self-identified change for ITS 3.7.12 Bases has been made. This change revises the ITS 3.7.12 Actions A.1 Bases for consistency and to remove duplication.	Pages 329, 335, and 336 of 503.
The change described in the response to Question 200409200954 for ITS 3.7.13 (Beyond Scope Issue 03.i) has been made. This change revises the Frequency for ITS SR 3.7.13.1 to "92 days."	Pages 342, 346, 356, 359, 362, and 371 of 503.

VOLUME 12

CNP UNITS 1 AND 2
IMPROVED TECHNICAL
SPECIFICATIONS CONVERSION

ITS SECTION 3.7
PLANT SYSTEMS

Revision 1

LIST OF ATTACHMENTS

ATTACHMENT 1

ITS 3.7.1, Main Steam Safety Valves

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.7 PLANT SYSTEMS

3/4.7.1 TURBINE CYCLE

SAFETY VALVES

LIMITING CONDITION FOR OPERATION

LCO 3.7.1 3.7.1.1 All main steam line code safety valves associated with each steam generator shall be OPERABLE. A.2

APPLICABILITY: MODES 1, 2 and 3.

Add proposed ACTIONS Note

ACTION: Add proposed Required Action A.2 Note L.1

a. MODES 1 & 2: With 4 ~~reactor coolant~~ loops and associated steam generators in operation, and with one or more main steam line code safety valves inoperable, operation may proceed provided that within 4 36 hours, either the ~~inoperable valve(s)~~ are restored to OPERABLE status, or the Power Range Neutron Flux High Setpoint trip is reduced per Table 3.7-1; otherwise, be in HOT STANDBY within the next 6 hours and comply with action statement b. M.1 L.2 A.3 A.4

ACTION A / ACTION B

Add proposed Required Action A.1

b. MODE 3: With a minimum of 3 ~~reactor coolant~~ loops and associated steam generators in operation, and with one or more main steam line code safety valves associated with an operating loop inoperable, operation may proceed provided that within 4 hours, either the inoperable valve(s) ~~are restored~~ to OPERABLE status or the ~~reactor trip~~ breakers are opened; otherwise, be in HOT SHUTDOWN within the next 30 12 hours. M.1 A.3 M.1

ACTION A / ACTION B

Add proposed second Condition of ACTION B M.2

SURVEILLANCE REQUIREMENTS

SR 3.7.1.1 4.7.1.1 Each main steam line code safety valve shall be demonstrated OPERABLE in accordance with Specification 4.0.5 and with lift settings as shown in Table 4.7-1. The safety valve shall be reset to the nominal value ±1% whenever found outside the ±1% tolerance. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3.

A.1

ITS 3.7.1

ITS

Table 3.7.1-1

TABLE 3.7-1

MAXIMUM ALLOWABLE POWER RANGE NEUTRON ~~FLUX~~ HIGH SETPOINT WITH INOPERABLE STEAM LINE SAFETY VALVES DURING 4 ~~LOOP~~ OPERATION

Maximum Number of Inoperable Safety Valves on Any Operating Steam Generator	Maximum Allowable Power Range Neutron Flux High Setpoint (Percent of RATED THERMAL POWER)
~~1~~ ← 4	63.8
~~2~~ ← 3	45.5
~~3~~ ← 2	27.4

A.4

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A.1

ITS

PLANT SYSTEMS

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A.1

ITS

Table 3.7.1-2

TABLE 4.7-1

STEAM LINE SAFETY VALVES PER LOOP

VALVE NUMBER	LIFT SETTING (±3%)*	~~ORIFICE SIZE~~
a. SV-1A	1065 psig	~~16 in.^{2}~~
b. SV-1B	1065 psig	~~16 in.^{2}~~
c. SV-2A	1075 psig	~~16 in.^{2}~~
d. SV-2B	1075 psig	~~16 in.^{2}~~
e. SV-3	1085 psig	~~16 in.^{2}~~

LA.1

~~* The lift setting pressure shall correspond to ambient conditions of the valve at nominal operating temperature and pressure.~~

LA.2

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ITS 3.7.1

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.7 PLANT SYSTEMS

3/4.7.1 TURBINE CYCLE

SAFETY VALVES

LIMITING CONDITION FOR OPERATION

LCO 3.7.1 3.7.1.1 All main steam line code safety valves associated with each steam generator shall be OPERABLE. A.2

APPLICABILITY: MODES 1, 2 and 3. Add proposed ACTIONS Note

ACTION: Add proposed Required Action A.2 Note L.1

M.1

ACTION A

a. MODES 1 & 2: With 4 ~~reactor coolant~~ loops and associated steam generators in operation, and with one or more main steam line code safety valves inoperable, operation 36 L.2 may proceed provided that within 4 hours, ~~either the inoperable valve(s) are restored to~~ OPERABLE status, or the Power Range Neutron Flux High Setpoint trip is reduced per Table 3.7-1; otherwise, be in HOT STANDBY within the next 6 hours and comply with action statement b. A.3

ACTION B

Add proposed Required Action A.1 A.4

M.1

ACTION A

b. MODE 3: With a minimum of 3 ~~reactor coolant~~ loops and associated steam generators in operation, and with one or more main steam line code safety valves associated with an operating loop inoperable, operation may proceed provided that within 4 hours, either the inoperable valve(s) ~~are restored~~ to OPERABLE status, or the ~~reactor trip~~ breakers are opened; otherwise, be in HOT SHUTDOWN within the next 30 hours. A.3

ACTION B

12 M.1

SURVEILLANCE REQUIREMENTS

Add proposed second Condition of ACTION B M.2

SR 3.7.1.1 4.7.1.1 Each main steam line code safety valve shall be demonstrated OPERABLE in accordance with Specification 4.0.5 and with lift settings as shown in Table 4.7-1. The safety valve shall be reset to the nominal value ±1% whenever found outside the ±1% tolerance. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3.

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ITS 3.7.1

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.7 PLANT SYSTEMS

TABLE 3.7-1

Table 3.7.1-1

MAXIMUM ALLOWABLE POWER RANGE NEUTRON ~~FLUX~~ HIGH SETPOINT WITH INOPERABLE STEAM LINE SAFETY VALVES DURING 4 LOOP OPERATION

Maximum Number of Inoperable Safety Valves on Any Operating Steam Generator	Maximum Allowable Power Range Neutron Flux High Setpoint (Percent of RATED THERMAL POWER)
1 ← 4	60.4
2 ← 3	43.0
3 ← 2	25.7

A.4

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ITS 3.7.1

A.1

ITS

3/4.7 PLANT SYSTEMS

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A.1

ITS

Table 3.7.1-2

TABLE 4.7-1

STEAM LINE SAFETY VALVES PER LOOP

VALVE NUMBER	LIFT SETTING (±1%)*	~~ORIFICE SIZE~~
a. SV-1A	1065 psig	~~16 in.^{2}~~
b. SV-1B	1065 psig	~~16 in.^{2}~~
c. SV-2A	1075 psig	~~16 in.^{2}~~
d. SV-2B	1075 psig	~~16 in.^{2}~~
e. SV-3	1085 psig	~~16 in.^{2}~~

LA.1

~~* The lift setting pressure shall correspond to ambient conditions of the valve at nominal operating temperature and pressure.~~

LA.2

DISCUSSION OF CHANGES
ITS 3.7.1, MAIN STEAM SAFETY VALVES (MSSVs)

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A.2 CTS 3.7.1.1 Actions a and b provide compensatory actions for one or more inoperable MSSVs. CTS 3.7.1.1 Action a requires that within 4 hours the MSSV(s) be restored to OPERABLE status or the Power Range Neutron Flux High Setpoint Trip(s) be reduced in accordance with the requirements of CTS Table 3.7-1. CTS 3.7.1.1 Action b requires that within 4 hours the MSSV(s) be restored to OPERABLE status or the reactor trip breakers are opened. ITS 3.7.1 ACTIONS Note states "Separate Condition entry is allowed for each MSSV." This changes the CTS by explicitly specifying separate condition entry for each inoperable MSSV.

The purpose of the CTS Actions is to allow separate condition entry for each inoperable MSSV. Each time it is discovered that an MSSV is inoperable entry is required and the specified Completion Time is allowed to complete the compensatory actions. The ITS 3.7.1 ACTIONS Note allows a separate Completion Time clock for each MSSV that is inoperable. This change is acceptable because it only provides clarification of the Completion Time when one valve is inoperable and, subsequently, a second valve becomes inoperable. This change is designated as administrative because it does not result in a technical change to the Specifications.

A.3 CTS 3.7.1.1 Actions a and b state that with one or more main steam line code safety valves inoperable to either restore the inoperable valves to OPERABLE status or to take an alternate compensatory measure. ITS 3.7.1 ACTION A does not include the restoration requirement, only the alternate compensatory measure. This changes the CTS by eliminating the explicit statement to restore the MSSV(s) to OPERABLE status.

This change is acceptable because it results in no technical change to the Technical Specifications. Restoration of compliance with the LCO is always an option in an Action, so eliminating the restoration Action from the CTS has no effect. In both the CTS and the ITS, if the inoperable MSSV(s) are not restored, actions are taken that result in reducing reactor power to within the relief capability of the OPERABLE MSSVs within 4 hours. This change is designated as administrative because it results in no technical change to the CTS.

A.4 CTS 3.7.1.1 Action a states that the Power Range Neutron Flux - High Setpoint trip must be reduced per CTS Table 3.7-1 when one or more MSSVs are found to be inoperable. CTS Table 3.7-1 provides the maximum allowable Power Range Neutron Flux - High Setpoint corresponding to the maximum number of inoperable MSSVs on any operating steam generator. ITS 3.7.1 ACTION A requires both a reduction in THERMAL POWER and a reduction in the Power Range Neutron Flux - High reactor trip setpoint consistent with the requirements of ITS Table 3.7.1-1. The Table has been revised slightly to provide the associated maximum allowable power for the number of OPERABLE MSSVs. This changes the CTS by adding an additional explicit statement to reduce THERMAL POWER consistent with ITS Table 3.7.1-1 and by stating the maximum allowable power as a function of OPERABLE, instead of inoperable, MSSVs.

The purpose of CTS 3.7.1.1 Action a is to reduce the Power Range Neutron Flux - High Setpoint to within the limits of the safety analyses. This reduction in the setpoint will cause a reactor shutdown if THERMAL POWER is not reduced prior to the setpoint change. The unit will reduce THEMAL POWER before reducing the setpoints in order to stay on line. This change is considered as administrative because it does not result in any technical changes to the CTS.

A.5 Not Used

MORE RESTRICTIVE CHANGES

M.1 CTS 3.7.1.1 Action a is applicable for MODES 1 and 2 with 4 reactor coolant loops and associated steam generators in operation and one or more MSSVs inoperable. The required compensatory actions are to either restore the valves to OPERABLE status or reduce the Power Range Neutron Flux - High Setpoint trip within 4 hours. If these actions cannot be met the unit must be in MODE 3 within the next 6 hours and comply with CTS 3.7.1.1 Action b. CTS 3.7.1.1 Action b is applicable in MODE 3 with a minimum of 3 reactor coolant loops and associated steam generators in operation and with one or more main steam line code safety valves associated with an operating loop inoperable. The compensatory measures provide an additional 4 hours to restore the valves to OPERABLE status or to trip the reactor trip breakers. If these actions cannot be met the unit must be in MODE 4 within the next 30 hours. ITS 3.7.1 ACTION A is applicable for one or more MSSVs during MODES 1, 2, and 3. ITS 3.7.1 Required Action A.1 requires a reduction in THERMAL POWER in 4 hours and a reduction in the Power Range Neutron Flux High Setpoint within 36 hours. ITS 3.7.1 ACTION B requires the unit to be in MODE 3 in 6 hours and MODE 4 in 12 hours if any Required Action and associated Completion Time is not met. This changes the CTS by modifying the Actions to delete their dependence on the MODE of Applicability, deleting the allowance to trip the reactor trip breakers, eliminating the additional time to restore or trip the reactor trip breakers in MODE 3 if CTS 3.7.1.1 Action b was entered from MODES 1 or 2, and reducing the time allowed to reached MODE 4.

The purpose of the CTS 3.7.1.1 Actions is to minimize the time allowed to operate at RATED THERMAL POWER with inoperable MSSVs. This change has modified the Actions to delete their dependence on the MODE of Applicability. This portion of the change is administrative, however it effectively reduces the total time the unit is allowed to reach MODE 4 by 22 hours if the inoperable MSSVs were discovered to be inoperable in MODES 1 or 2. In addition, the allowed time in CTS 3.7.1.1 Action b to be in MODE 4 of "within the next 30 hours" has been reduced by 18 hours if the inoperable MSSVs were discovered to be inoperable in MODE 3. The proposed Completion Time for ITS 3.7.1 Required Action B.2 to be in MODE 4 is consistent with other Specifications and is therefore considered acceptable. The unit cooldown is unaffected by inoperable Main Steam Safety Valves (MSSVs) since the turbine steam dump and steam generator power operated relief valves can be used to cooldown. The unit does not require additional time to be in MODE 4 with inoperable MSSVs. Placing the reactor trip breakers in the trip position helps to ensure than an inadvertent control rod withdrawal will not occur. However, this event does not challenge the MSSVs during MODE 3 operations. Therefore, the allowance to trip the breakers has been deleted and the unit must commence the cooldown to be outside of the MODE of Applicability of the Specification. This change is designated as more restrictive because the unit is required to be placed in MODE 4 in a shorter period of time than is required by the CTS and the allowance to remain in MODE 3 with the reactor trip breakers in the open position is not maintained.

M.2 CTS 3.7.1.1 Actions a and b address the inoperabilities associated with four or five inoperable MSSVs associated with one or more steam generators and allow operation for up to 4 hours prior to requiring a unit shutdown. ITS 3.7.1 ACTION B states that if one or more steam generators have ≥ 4 MSSVs inoperable, the unit must be placed in MODE 3 within 6 hours and MODE 4 within 12 hours. This changes the CTS by deleting the allowance to operate for up to 4 hours for one or more steam generators with ≥ 4 MSSVs inoperable.

The purpose of the CTS 3.7.1.1 Actions is to address inoperabilities of up to five MSSVs in one or more steam generators. The CTS allows operation for up to 4 hours prior to requiring a unit shutdown. ITS 3.7.1 ACTION B requires an immediate unit shutdown if one or more steam generators have ≥ 4 MSSVs inoperable. This change is designated as more restrictive because the unit is required to be placed in MODE 4 in a shorter period of time than is required by the CTS.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS Table 4.7-1 specifies the MSSV number and associated lift settings and orifice size for each MSSV. ITS Table 3.7.1-2 only provides the MSSV number and associated lift setting. This changes the CTS by deleting the required orifice size and relocating this detail to the UFSAR.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate

protection of public health and safety. The ITS still retains the valve numbers and corresponding lift setting. The orifice size does not normally vary since it is a function of the design of the valve. The lift settings can vary and are adjustable and is therefore important to include and retain in the Technical Specification. Also, this change is acceptable because the removed information will be adequately controlled in the UFSAR. The UFSAR is controlled under 10 CFR 50.59 or 10 CFR 50.71(e), which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.2 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 3.7.1.1 Table 4.7-1 is modified by footnote * that states, "The lift setting pressure shall correspond to ambient conditions of the valve at nominal operating temperature and pressure." ITS 3.7.1 does not contain this information. This changes the CTS by moving details on setting the lift pressure to the ITS Bases.

The removal of these details for performing Surveillance Requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the lift settings and the definition of OPERABLE states that the components must be capable of performing their safety function. This makes clear that the MSSVs must be adjusted to lift at the settings given under the conditions that the safety analysis assumes the MSSVs will operate. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications to the ITS Bases.

<u>LESS RESTRICTIVE CHANGES</u>

L.1 *(Category 4 – Relaxation of Required Action)* CTS 3.7.1.1 Action a states that with one or more MSSVs inoperable, reduce the Power Range Neutron Flux - High Setpoint trip within 4 hours. ITS 3.7.1 Required Action A.2 also requires the Power Range Neutron Flux - High trip setpoint to be reduced, but is modified by a Note (Required Action A.2 Note) stating that this action is only required in MODE 1. This changes the CTS by only requiring the Power Range Neutron Flux - High Setpoint trip be reduced when in MODE 1.

The purpose of CTS 3.7.1.1 is to ensure that the MSSVs are capable of relieving Main Steam System pressure. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition,

DISCUSSION OF CHANGES
ITS 3.7.1, MAIN STEAM SAFETY VALVES (MSSVs)

considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the repair period. In MODES 2 and 3, the Reactor Trip System trips specified in LCO 3.3.1, "Reactor Trip System Instrumentation," provide sufficient protection. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.2 *(Category 3 – Relaxation of Completion Time)* CTS 3.7.1.1 Action a specifies the compensatory actions when one or more MSSVs are inoperable in MODES 1 and 2. The action allows operation to continue provided that within 4 hours, either the inoperable MSSV(s) are restored to OPERABLE status or the Power Range Neutron Flux - High Setpoint trip is reduced per Table 3.7-1. ITS 3.7.1 Required Action A.2 requires the reduction of the Power Range Neutron Flux - High reactor trip setpoint to less than or equal to the Maximum Allowable % RTP specified in Table 3.7.1-1 within 36 hours. This changes the CTS by extending the time allowed to reduce the Power Range Neutron Flux - High reactor trip setpoints. The change that deletes the restoration options is discussed in DOC A.3.

The purpose of 3.7.1.1 Action a is to limit the time the unit can operate with inoperable MSSVs without reducing the Power Range Neutron Flux - High reactor trip setpoints. This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs, and the low probability of a DBA occurring during the allowed Completion Time. This change extends the time allowed to reduce the Power Range Neutron Flux - High reactor trip setpoints when the MSSVs are inoperable. The time extension is from 4 hours to 36 hours. However, the time to reduce THERMAL POWER to the same limits is maintained in ITS 3.7.1 Required Action A.1, as described in DOC A.4. This change is acceptable since the Completion Time of 36 hours is based on a reasonable time to correct the MSSV inoperability, the time required to perform the power reduction, operating experience in resetting all channels of a protective function, and on the low probability of the occurrence of a transient that could result in steam generator overpressure during this period. In addition, the actual reactor power level continues to be required to be reduced to within the same limits within 4 hours. Thus operation of the unit at RATED THERMAL POWER with inoperable MSSVs is still only allowed for 4 hours, consistent with the current allowance. This change is designated as less restrictive because additional time is allowed to restore parameters to within the LCO limits than was allowed in the CTS.

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Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

CTS

3.7 PLANT SYSTEMS

3.7.1 Main Steam Safety Valves (MSSVs)

LCO 3.7.1

LCO 3.7.1 [Five] MSSVs per steam generator shall be OPERABLE. ①

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

DOC A.2

- NOTE -
Separate Condition entry is allowed for each MSSV.

- REVIEWER'S NOTE - ②
The * noted text is required for units that are licensed to operate at partial power with a positive Moderator Temperature Coefficient (MTC).

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more steam generators with one MSSV inoperable [and the Moderator Temperature Coefficient (MTC) zero or negative at all power levels]*.	A.1 Reduce THERMAL POWER to ≤ [72] % RTP.	4 hours
Action a — A B. One or more steam generators with one two or more MSSVs inoperable. [OR One or more steam generators with one MSSV inoperable and the MTC positive at any power level.]*	A B.1 Reduce THERMAL POWER to less than or equal to the Maximum Allowable % RTP specified in Table 3.7.1-1 for the number of OPERABLE MSSVs. AND	4 hours

② ② ②

CTS

MSSVs
3.7.1

ACTIONS (continued)

	CONDITION	REQUIRED ACTION		COMPLETION TIME	
Action a			- NOTE - Only required in MODE 1.		
		A.2	Reduce the Power Range Neutron Flux - High reactor trip setpoint to less than or equal to the Maximum Allowable % RTP specified in Table 3.7.1-1 for the number of OPERABLE MSSVs.	36 hours	2
Action a and b	B. Required Action and associated Completion Time of Condition A not met. OR One or more steam generators with ≥ 4 MSSVs inoperable.	B.1 AND B.2	Be in MODE 3. Be in MODE 4.	6 hours 12 hours	2 4

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
4.7.1.1	SR 3.7.1.1	- NOTE - Only required to be performed in MODES 1 and 2. Verify each required MSSV is OPERABLE in accordance with the Inservice Testing Program lift setpoint per Table 3.7.1-2 with the ~~in accordance with the Inservice Testing Program.~~ Following testing, lift setting shall be within ±1%.	In accordance with the Inservice Testing Program	3

CTS

Table 3.7.1-1

Table 3.7.1-1 (page 1 of 1)
OPERABLE Main Steam Safety Valves versus
Maximum Allowable Power

NUMBER OF OPERABLE MSSVs PER STEAM GENERATOR	MAXIMUM ALLOWABLE POWER (% RTP)
[4]	[65] 63.8 (Unit 1) and 60.4 (Unit 2)
3	[46] 45.5 (Unit 1) and 43.0 (Unit 2)
2	[28] 27.4 (Unit 1) and 25.7 (Unit 2)

1

CTS
Table 4.7-1

Table 3.7.1-2 (page 1 of 1)
Main Steam Safety Valve Lift Settings

VALVE NUMBER				LIFT SETTING (psig ± [3]%)
STEAM GENERATOR				
#1	#2	[#3]	[#4]	
[ ]	[ ]	[ ]	[ ]	[ ]
[ ]	[ ]	[ ]	[ ]	[ ]
[ ]	[ ]	[ ]	[ ]	[ ]
[ ]	[ ]	[ ]	[ ]	[ ]

INSERT 1

1

1

1

1

1 **INSERT 1**

SV-1A	SV-1A	SV-1A	SV-1A	1065
SV-1B	SV-1B	SV-1B	SV-1B	1065
SV-2A	SV-2A	SV-2A	SV-2A	1075
SV-2B	SV-2B	SV-2B	SV-2B	1075
SV-3	SV-3	SV-3	SV-3	1085

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.1, MAIN STEAM SAFETY VALVES (MSSVs)

1. The brackets are removed and the proper plant specific information/value is provided.

2. The ISTS 3.7.1 Reviewer's Note, which states the noted text is required for units that are licensed to operate at partial power with a positive Moderator Temperature Coefficient, has been deleted. In addition, ISTS 3.7.1 ACTION A and the second part of ISTS 3.7.1 Condition B have been deleted and subsequent ACTIONS have been renumbered as necessary. The allowance in ISTS 3.7.1 ACTION A is not consistent with the CNP analyses.

3. ISTS SR 3.7.1.1 has been modified to be consistent with the current licensing basis. In addition, the proposed words are consistent with the Bases for the SR, and with a similar SR in another Specification (ITS SR 3.4.10.1, the pressurizer safety valve Surveillance).

4. Change made for consistency with similar Conditions in other Specifications.

Improved Standard Technical Specifications (ISTS) Bases Markup and Justification for Deviations (JFDs)

B 3.7 PLANT SYSTEMS

B 3.7.1 Main Steam Safety Valves (MSSVs)

BASES

BACKGROUND

The primary purpose of the MSSVs is to provide overpressure protection for the secondary system. The MSSVs also provide protection against overpressurizing the reactor coolant pressure boundary (RCPB) by providing a heat sink for the removal of energy from the Reactor Coolant System (RCS) if the preferred heat sink, provided by the Condenser and Circulating Water System, is not available. (2)

[Five] MSSVs are located on each main steam header, outside containment, upstream of the ~~main steam isolation~~ steam generator stop valves, as described ~~in the~~ FSAR, Section ~~10.3.1~~ 10.2.2 (Ref. 1). The MSSVs must have sufficient capacity to limit the secondary system pressure to ≤ 110% of the steam generator design pressure in order to meet the requirements of the ASME Code, Section III (Ref. 2). The MSSV design includes staggered setpoints, according to Table 3.7.1-2 ~~in the accompanying LCO~~, so that only the needed valves will actuate. Staggered setpoints reduce the potential for valve chattering that is due to steam pressure insufficient to fully open all valves following a turbine reactor trip. (4) (1) (2) (1) (7)

APPLICABLE SAFETY ANALYSES

The design basis for the MSSVs comes from Reference 2 and its purpose is to limit the secondary system pressure to ≤ 110% of design pressure for any anticipated operational ~~occurrence~~ transient (AØO) or accident considered in the Design Basis Accident (DBA) and transient analysis. (2)

The events that challenge the relieving capacity of the MSSVs, and thus RCS pressure, are those characterized as decreased heat removal events, which are presented in ~~the~~ FSAR, Section ~~15.2~~ 14.1 (Ref. 3). Of these, the full power turbine trip without steam dump is ~~typically~~ the limiting ~~AØO~~ anticipated operational transient. This event also terminates normal feedwater flow to the steam generators. (4) (2) (1) (2)

The safety analysis demonstrates that the transient response for turbine trip occurring from full power without a direct reactor trip presents no hazard to the integrity of the RCS or the Main Steam System. One turbine trip analysis is performed assuming primary system pressure control via operation of the pressurizer relief valves and spray. This analysis demonstrates that the DNB design basis is met. Another analysis is performed assuming no primary system pressure control, but crediting reactor trip on high pressurizer pressure and operation of the pressurizer safety valves. This analysis demonstrates that RCS integrity

BASES

APPLICABLE SAFETY ANALYSES (continued)

is maintained by showing that the maximum RCS pressure does not exceed 110% of the design pressure. All cases analyzed demonstrate that the MSSVs maintain Main Steam System integrity by limiting the maximum steam pressure to less than 110% of the steam generator design pressure.

In addition to the decreased heat removal events, reactivity insertion events may also challenge the relieving capacity of the MSSVs. The uncontrolled rod cluster control assembly (RCCA) bank withdrawal at power event is characterized by an increase in core power and steam generation rate until reactor trip occurs when either the Overtemperature ΔT or Power Range Neutron Flux-High setpoint is reached. Steam flow to the turbine will not increase from its initial value for this event. The increased heat transfer to the secondary side causes an increase in steam pressure and may result in opening of the MSSVs prior to reactor trip, assuming no credit for operation of the atmospheric or condenser steam dump valves. The FSAR Section [15.4] safety analysis of the RCCA bank withdrawal at power event for a range of initial core power levels demonstrates that the MSSVs are capable of preventing secondary side overpressurization for this AOO. INSERT 1 (2) (3) INSERT 2 (2) 14.1.2 (Ref. 4) (1) (2) (4) anticipated operational transient (2)

The FSAR safety analyses discussed above assume that all of the MSSVs for each steam generator are OPERABLE. If there are inoperable MSSV(s), it is necessary to limit the primary system power during steady-state operation and AOOs to a value that does not result in exceeding the combined steam flow capacity of the turbine (if available) and the remaining OPERABLE MSSVs. The required limitation on primary system power necessary to prevent secondary system overpressurization ~~may be determined by system transient analyses or conservatively arrived at by a simple heat balance calculation.~~ In ~~some circumstances~~ it is necessary to limit the primary side heat generation that can be achieved during an AOO by reducing the setpoint of the Power Range Neutron Flux-High reactor trip function. ~~For example, if more than one MSSV on a single steam generator is inoperable, an uncontrolled RCCA bank withdrawal at power event occurring from a partial power level may result in an increase in reactor power that exceeds the combined steam flow capacity of the turbine and the remaining OPERABLE MSSVs. Thus, for multiple inoperable MSSVs on the same steam generator it is necessary to prevent this power increase by lowering the Power Range Neutron Flux-High setpoint to an appropriate value. [When the Moderator Temperature Coefficient (MTC) is positive, the reactor power may increase above the initial value during an RCS heatup event (e.g., turbine trip). Thus, for any number of~~ (4) (2) (2) INSERT 3 (5) INSERT 4 addition anticipated operational transient (2) (8) (2)

2 **INSERT 1**

, or the Pressurizer Water Level – High

2 **INSERT 2**

steam generator (SG) power operated relief valves (PORVs)

2 **INSERT 3**

and Power Range Neutron Flux-High setpoint

2 **INSERT 4**

are determined using a conservative heat balance calculation as described in the attachment to Reference 5.

BASES

APPLICABLE SAFETY ANALYSES (continued)

Inoperable MSSVs, it is necessary to reduce the trip setpoint if a positive MTC may exist at partial power conditions, unless it is demonstrated by analysis that a specified reactor power reduction alone is sufficient to prevent overpressurization of the steam system.] (2)

The MSSVs are assumed to have two active and one passive failure modes. The active failure modes are spurious opening, and failure to reclose once opened. The passive failure mode is failure to open upon demand. (3)

The MSSVs satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

The accident analysis requires that [five] MSSVs per steam generator be OPERABLE to provide overpressure protection for design basis transients occurring at 102% RTP. The LCO requires that [five] MSSVs per steam generator be OPERABLE in compliance with Reference 2, and the DBA analysis. (1) (2) (1)

The OPERABILITY of the MSSVs is defined as the ability to open upon demand within the setpoint tolerances, to relieve steam generator overpressure, and reseat when pressure has been reduced. The OPERABILITY of the MSSVs is determined by periodic surveillance testing in accordance with the Inservice Testing Program.

This LCO provides assurance that the MSSVs will perform their designed safety functions to mitigate the consequences of accidents that could result in a challenge to the RCPB, or Main Steam System integrity.

APPLICABILITY

In MODES 1, 2, and 3, [five] MSSVs per steam generator are required to be OPERABLE to prevent Main Steam System overpressurization. (1) (9)

In MODES 4 and 5, there are no credible transients requiring the MSSVs. The steam generators are not normally used for heat removal in MODES 5 and 6, and thus cannot be overpressurized; there is no requirement for the MSSVs to be OPERABLE in these MODES.

ACTIONS

The ACTIONS Table is modified by a Note indicating that separate Condition entry is allowed for each MSSV.

With one or more MSSVs inoperable, action must be taken so that the available MSSV relieving capacity meets Reference 2 requirements. (4)

BASES

ACTIONS (continued)

Operation with less than all [five] MSSVs OPERABLE for each steam generator is permissible, if THERMAL POWER is limited to the relief capacity of the remaining MSSVs. This is accomplished by restricting THERMAL POWER so that the energy transfer to the most limiting steam generator is not greater than the available relief capacity in that steam generator. 4

A.1

In the case of only a single inoperable MSSV on one or more steam generators [when the Moderator Temperature Coefficient is not positive], a reactor power reduction alone is sufficient to limit primary side heat generation such that overpressurization of the secondary side is precluded for any RCS heatup event. Furthermore, for this case there is sufficient total steam flow capacity provided by the turbine and remaining OPERABLE MSSVs to preclude overpressurization in the event of an increased reactor power due to reactivity insertion, such as in the event of an uncontrolled RCCA bank withdrawal at power. Therefore, Required Action A.1 requires an appropriate reduction in reactor power within 4 hours. 5

The maximum THERMAL POWER corresponding to the heat removal capacity of the remaining OPERABLE MSSVs is determined via a conservative heat balance calculation as described in the attachment to Reference 6, with an appropriate allowance for calorimetric power uncertainty.

- REVIEWER'S NOTE -

To determine the maximum THERMAL POWER corresponding to the heat removal capacity of the remaining OPERABLE MSSVs, the governing heat transfer relationship is the equation $q = \dot{m}\Delta h$, where q is the heat input from the primary side, $\dot{m}$ is the mass flow rate of the steam, and Δh is the increase in enthalpy that occurs in converting the secondary side water to steam. If it is conservatively assumed that the secondary side water is all saturated liquid (i.e., no subcooled feedwater), then the Δh is the heat of vaporization (h_{fg}) at the steam relief pressure. The following equation is used to determine the maximum allowable power level for continued operation with inoperable MSSV(s):

$$\text{Maximum NSSS Power} \le (100/Q)\,(w_s h_{fg} N) / K$$

BASES

ACTIONS (continued)

where:

Q = Nominal NSSS power rating of the plant (including reactor coolant pump heat), MWt

K = Conversion factor 947.82 (Btu/sec)/MWt

w_s = Minimum total steam flow rate capability of the OPERABLE MSSVs on any one steam generator at the highest OPERABLE MSSV opening pressure, including tolerance and accumulation, as appropriate, lbm/sec.

h_{fg} = Heat of vaporization at the highest MSSV opening pressure, including tolerance and accumulation as appropriate, Btu/lbm.

N = Number of steam generators in the plant.

For use in determining the %RTP in the Required Action statement A.1, the Maximum NSSS Power calculated above is reduced by [2]% RTP to account for calorimetric power uncertainty.

5

A B.1 and B.2 with one or more 5

INSERT 5

INSERT 5A

a Completion Time of 36

In the case of multiple inoperable MSSVs on one or more steam generators, with a reactor power reduction alone there may be insufficient total steam flow capacity provided by the turbine and remaining OPERABLE MSSVs to preclude overpressurization in the event of an increased reactor power due to reactivity insertion, such as in the event of an uncontrolled RCCA bank withdrawal at power. [Furthermore, for a single inoperable MSSV on one or more steam generators when the Moderator Temperature Coefficient is positive the reactor power may increase as a result of an RCS heatup event such that flow capacity of the remaining OPERABLE MSSVs is insufficient.] The 4 hour Completion Time for Required Action B.1 is consistent with A.1. An additional 32 hours is allowed in Required Action B.2 to reduce the setpoints. A The Completion Time of 36 hours is based on a reasonable time to correct the MSSV inoperability, the time required to perform the power reduction, operating experience in resetting all channels of a protective function, and on the low probability of the occurrence of a transient that could result in steam generator overpressure during this period.

5 2 5 5 7

5 **INSERT 5**

Required Action A.1 requires an appropriate reduction in reactor power within 4 hours. However,

5 **INSERT 5A**

a turbine trip without steam dump. Therefore,

BASES

ACTIONS (continued)

The maximum THERMAL POWER corresponding to the heat removal capacity of the remaining OPERABLE MSSVs is determined via a conservative heat balance calculation as described in the attachment to Reference 6, with an appropriate allowance for Nuclear Instrumentation System trip channel uncertainties. (5) (2)

~~REVIEWER'S NOTE -~~
~~To determine the Table 3.7.1-1 Maximum Allowable Power for Required Actions B.1 and B.2 (% RTP), the Maximum NSSS Power calculated using the equation in the Reviewer's Note above is reduced by [9]% RTP to account for Nuclear Instrumentation System trip channel uncertainties.~~ (2)

(5)

(A) Required Action B.2 is modified by a Note, indicating that the Power Range Neutron Flux-High reactor trip setpoint reduction is only required in MODE 1. In MODES 2 and 3 the reactor ~~protection~~ system trips specified in LCO 3.3.1, "Reactor Trip System Instrumentation," provide sufficient protection. Trip (2)

The allowed Completion Times are reasonable based on operating experience to accomplish the Required Actions in an orderly manner without challenging unit systems.

(5)

(B) C.1 and C.2 (7)

If the Required Actions ~~are not completed within the~~ associated Completion Time, or if one or more steam generators have ≥ [4] inoperable MSSVs, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4 within 12 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 unit systems.

any / and / is not met

SURVEILLANCE REQUIREMENTS

SR 3.7.1.1

This SR verifies the OPERABILITY of the MSSVs by the verification of each MSSV lift setpoint in accordance with the Inservice Testing Program. The ASME Code, Section XI (Ref. 4), requires that safety and relief valve tests be performed in accordance with ANSI/ASME OM-1-1987 (Ref. 5). ~~According to Reference 5, the following tests are required:~~ (6) (2) (7) (7) (2)

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~a. Visual examination,~~

~~b. Seat tightness determination,~~

~~c. Setpoint pressure determination (lift setting),~~

~~d. Compliance with owner's seat tightness criteria, and~~

~~e. Verification of the balancing device integrity on balanced valves.~~

~~The ANSI/ASME Standard requires that all valves be tested every 5 years, and a minimum of 20% of the valves be tested every 24 months.~~ The ASME Code specifies the activities and frequencies necessary to satisfy the requirements. Table 3.7.1-2 allows a ± ~~[3]~~% setpoint tolerance for OPERABILITY; however, the valves are reset to ± 1% during the Surveillance to allow for drift. The lift settings, according to Table 3.7.1-2, correspond to ambient conditions of the valve at nominal operating temperature and pressure.

7

1

This SR is modified by a Note that allows entry into and operation in MODE 3 prior to performing the SR. The MSSVs may be either bench tested or tested in situ at hot conditions using an assist device to simulate lift pressure. If the MSSVs are not tested at hot conditions, the lift setting pressure shall be corrected to ambient conditions of the valve at operating temperature and pressure.

REFERENCES

1. UFSAR, Section ~~[10.3.1]~~. 10.2.2 (2) (1)

2. ASME, Boiler and Pressure Vessel Code, Section III, ~~Article NC-7000, Class 2 Components~~ 1971. (2)

3. UFSAR, Section ~~[15.2]~~. 14.1 (2) (1)

INSERT 6 (2)

6 ~~4~~. ASME, Boiler and Pressure Vessel Code, Section XI.

7 ~~5~~. ANSI/ASME OM-1-1987. (2)

5 ~~6~~. NRC Information Notice 94-60, "Potential Overpressurization of the Main Steam System," August 22, 1994.

2 **INSERT 6**

4. UFSAR, Section 14.1.2.

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.1 BASES, MAIN STEAM SAFETY VALVES (MSSVs)

1. The brackets have been removed and the proper plant specific information/value has been provided.

2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases, which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. The discussion of the active and passive failure modes of the MSSVs has been deleted since it does not add information on how the MSSVs mitigate transients that is normally included in the Applicable Safety Analyses section.

4. The discussion in the ACTIONS sections has been deleted since the description of the Bases of the Required Action is discussed under the appropriate header.

5. Changes are made to reflect changes made to the Specification.

6. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

7. Changes have been made to be consistent with similar phrases in other Bases.

8. This redundant example has been deleted.

9. Changes are made to reflect the Specification.

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.1, MAIN STEAM SAFETY VALVES (MSSVs)

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 2

ITS 3.7.2, Steam Generator Stop Valves (SGSVs)

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

ITS 3.7.2

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.7 PLANT SYSTEMS

STEAM GENERATOR STOP VALVES

LIMITING CONDITION FOR OPERATION

LCO 3.7.2 3.7.1.5 Each steam generator stop valve shall be OPERABLE. ← except when all SGSVs are closed — L.1

APPLICABILITY: MODES 1, 2 and 3.

ACTION: — M.1

ACTION A — MODE 1 - With one steam generator stop valve inoperable ~~but open~~ POWER OPERATION may continue provided the inoperable valve is restored to OPERABLE status within 8 hours; otherwise, reduce

ACTION B — power to less than or equal to 5 percent of RATED THERMAL POWER within the next 6 hours.

Add proposed Condition C Note — A.2

ACTION C — MODES 2 - and 3 With one or more steam generator stop valves inoperable, close the inoperable valve(s) within 8 hours and verify the inoperable valves are closed at least once per 7 days. Otherwise, be in at

ACTION D — least MODE 4 within 12 hours, with the unit in at least MODE 3 within the first 6 hours.

SURVEILLANCE REQUIREMENTS

SR 3.7.2.1 4.7.1.5.1 Each steam generator stop valve ~~that is open~~ shall be demonstrated OPERABLE by verifying full closure within 8 seconds when tested pursuant to Specification 4.0.5. — A.4

SR 3.7.2.1 Note 4.7.1.5.2 The provisions of Specification 4.0.4 are not applicable for entry into MODE 3.

~~4.7.1.5.3 The provisions of Specification 4.0.4 are not applicable for entry into MODE 2 when performing PHYSICS TESTS at the beginning of a cycle provided the steam generator stop valves are maintained closed.~~ — A.5

← Add proposed SR 3.7.2.2 — M.2

A.1

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ITS 3.7.2

A.1

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A.1

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ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.7 PLANT SYSTEMS

STEAM GENERATOR STOP VALVES

LIMITING CONDITION FOR OPERATION

LCO 3.7.2 3.7.1.5 Each steam generator stop valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3. except when all SGSVs are closed L.1

ACTION: M.1

ACTION A, ACTION B — MODE 1 - With one steam generator stop valve inoperable ~~but open,~~ POWER OPERATION may continue provided the inoperable valve is restored to OPERABLE status within 8 hours; otherwise, reduce power to less than or equal to 5 percent of RATED THERMAL POWER within the next 6 hours.

Add proposed Condition C Note A.2

ACTION C, ACTION D — MODES 2 - and 3 - With one or more steam generator stop valves inoperable, close the inoperable valve(s) within 8 hours and verify the inoperable valves are closed at least once per 7 days. Otherwise, be in at least MODE 4 within 12 hours, with the unit in at least MODE 3 within the first 6 hours.

SURVEILLANCE REQUIREMENTS A.4

SR 3.7.2.1 4.7.1.5.1 Each steam generator stop valve ~~that is open~~ shall be demonstrated OPERABLE by verifying full closure within 8 seconds when tested pursuant to Specification 4.0.5.

SR 3.7.2.1 Note 4.7.1.5.2 The provisions of Specification 4.0.4 are not applicable for entry into MODE 3.

~~4.7.1.5.3 The provisions of Specification 4.0.4 are not applicable for entry into MODE 2 when performing PHYSICS TESTS at the beginning of a cycle provided the steam generator stop valves are maintained closed.~~ A.5

Add proposed SR 3.7.2.2 M.2

DISCUSSION OF CHANGES
ITS 3.7.2, STEAM GENERATOR STOP VALVES (SGSVs)

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A.2 The CTS 3.7.1.5 Action for MODES 2 and 3 requires entry when one or more steam generator stop valves are inoperable. ITS 3.7.2 ACTION C includes a Condition Note that specifies separate Condition entry is allowed for each SGSV. The Condition also specifies entry for one or more inoperable SGSVs. This changes the CTS by clearly specifying separate entry Condition for each inoperable SGSV.

The purpose of the CTS 3.7.1.5 Action for MODES 2 and 3 is to ensure the appropriate compensatory actions are in place for when one or more steam generator stop valves will not close within the time specified. This change is acceptable because the intent of the CTS Action is to allow separate entry for each inoperable steam generator stop valve. This change is designated as administrative because it does not result in technical changes to the CTS.

A.3 Not used.

A.4 CTS 4.7.1.5.1 states that each SGSV valve that is open shall be demonstrated OPERABLE by verifying full closure within 8 seconds. ITS 3.7.2.1 states to verify the isolation time of each SGSV is $\leq$ 8 seconds. This changes the CTS by deleting the explicit phrase to test each SGSV "that is open."

The purpose of CTS 4.7.1.5.1 is to ensure the isolation times of those valves that are required to perform their safety function are met. When a SGSV is closed, its safety function is met. SGSVs are normally closed either to perform a test or to satisfy the Technical Specification Action requirements. If a SGSV is being tested and is determined to be inoperable during the test, it must be declared inoperable. CTS 4.0.3 states, in part, "Surveillance requirements do not have to be performed on inoperable equipment." ITS SR 3.0.1 states "Surveillances do not have to be performed on inoperable equipment or variables outside specified limits." This does not change the current use and application of the statement in CTS 4.0.3 as discussed in the Discussion of Changes in ITS Section 3.0. Therefore, when in the Applicability of this Specification, a closed SGSV is either OPERABLE and being tested or is inoperable and closed to satisfy the Actions. Since inoperable equipment does not have to be tested, the removal of the phrase "that is open" from the Surveillance is acceptable. This change is designated as administrative because it does not result in technical changes to the CTS.

A.5 CTS 4.7.1.5.3 specifies that the provisions of Specification 4.0.4 are not applicable for entry into MODE 2 when performing PHYSICS TESTS at the

DISCUSSION OF CHANGES
ITS 3.7.2, STEAM GENERATOR STOP VALVES (SGSVs)

beginning of the cycle provided the steam generator stop valves are maintained closed. ITS 3.7.2 does not contain this explicit allowance. This changes the CTS by deleting the explicit allowance when performing PHYSICS TESTS.

This allowance is no longer needed since the Applicability of the LCO has been changed from "MODES 1, 2, and 3" to "MODES 1, and MODES 2 and 3 except when all SGSVs are closed," as described in DOC L.1. Since, this Specification will be applicable in MODES 2 and 3 except when all steam generator stop valves are closed, the explicit allowance is no longer needed. This change is designated as administrative because it does not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

M.1 The CTS 3.7.1.5 Action for MODE 1 provides compensatory measures when one steam generator stop valve is inoperable "but open." ITS 3.7.2 ACTION A provides compensatory actions for when a steam generator stop valve is inoperable, regardless of whether the valve is open or closed. This changes the CTS by deleting the condition for entry into the action from "inoperable but open" to "inoperable."

The purpose of the CTS 3.7.1.5 Action for MODE 1 is to ensure that the appropriate compensatory actions are in place when a steam generator stop valve will not close within the time specified. This change is acceptable because the proposed Condition requires entry regardless of whether the steam generator stop valve is open or closed. In MODE 1, four reactor coolant loops are required to be in operation. If a steam generator stop valve is closed, the steam generator would not be performing its design function to supply steam to the main turbine. The closure of the steam generator stop valve may cause the associated main steam safety valves and steam generator power operated relief valve to open, therefore bypassing the main turbine. The closure of the steam generator stop valve would cause a unit transient which will require unit operator action. Nevertheless, if a steam generator stop valve is found inoperable, then entry into the Condition would still be necessary in MODE 1 because MODE 1 operation cannot continue with a closed steam generator stop valve. This change is designated as more restrictive since it requires entry into the Condition regardless of the status (open or closed) of the inoperable steam generator stop valve.

M.2 The CTS does not require testing to verify that the SGSVs close on an actuation signal. ITS SR 3.7.2.2 requires verification that each SGSV actuates to the isolation position on an actual or simulated actuation signal. This changes the CTS by requiring verification that each SGSV actuates to the isolation position on an actual or simulated actuation signal.

The purpose of the ITS SR 3.7.2.2 is to verify the SGSV can close on an actual or simulated actuation signal. This change is acceptable because the test is conducted to ensure that the SGSV will perform its safety function. This change is considered more restrictive because a new requirement is added to the ITS that was not included in the CTS.

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DISCUSSION OF CHANGES
ITS 3.7.2, STEAM GENERATOR STOP VALVES (SGSVs)

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

None

LESS RESTRICTIVE CHANGES

L.1 *(Category 2 – Relaxation of Applicability)* CTS 3.7.1.5 is applicable in MODES 1, 2, and 3. ITS LCO 3.7.2 is applicable in MODE 1, and in MODES 2 and 3 except when all SGSVs are closed. This changes the CTS by making the Specification not applicable in MODES 2 and 3 when all SGSVs are closed.

The purpose of the ITS 3.7.2 Applicability exception is to clarify that the SGSVs are not required to be OPERABLE when they are in a position that supports the safety analyses. This change is acceptable because the requirements continue to ensure that the structures, systems, and components are maintained in the MODES and other specified conditions assumed in the safety analyses and licensing basis. When all the valves are in the closed position, they are in their assumed accident position. This change is designated as less restrictive because the ITS LCO requirements are applicable in fewer operating conditions than in the CTS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

SG-SV MSIVs (1)
3.7.2

CTS

3.7 PLANT SYSTEMS

3.7.2 Main Steam Isolation Valves (MSIVs) Steam Generator Stop SGSV (1)

3.7.1.5

LCO 3.7.2 Four MSIVs shall be OPERABLE. SGSV (2)(1)

APPLICABILITY: MODE 1,
MODES 2 and 3 except when all MSIVs SGSV are closed ~~and de-activated~~. (1)(3)

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
Action MODE 1	A. One MSIV SGSV inoperable in MODE 1.	A.1 Restore MSIV SGSV to OPERABLE status.	8 hours	(1)(2)
Action MODE 1	B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 2.	6 hours	
Action MODES 2 and 3	C. - NOTE - Separate Condition entry is allowed for each MSIV SGSV. One or more MSIVs SGSV inoperable in MODE 2 or 3.	C.1 Close MSIV SGSV. AND C.2 Verify MSIV is closed.	8 hours Once per 7 days	(1)(2) (1) (1)
Action MODES 2 and 3	D. Required Action and associated Completion Time of Condition C not met.	D.1 Be in MODE 3. AND D.2 Be in MODE 4.	6 hours 12 hours	

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565V ①

MSIVs
3.7.2

CTS

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.2.1 (4.7.1.5.1, 4.7.1.5.2)	- NOTE - Only required to be performed in MODES 1 and 2. Verify the isolation time of each MSIV 565V is ≤ (4.6) 8 seconds.	In accordance with the Inservice Testing Program ① ②
SR 3.7.2.2 (DOC M.2)	- NOTE - Only required to be performed in MODES 1 and 2. Verify each MSIV 565V actuates to the isolation position on an actual or simulated actuation signal.	(18) 24 months ① ②

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JUSTIFICATION FOR DEVIATIONS
ITS 3.7.2, STEAM GENERATOR STOP VALVES (SGSVs)

1. Changes are made (additions, deletions, and/or changes) to the ISTS which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. The brackets are removed and the proper plant specific information/value is provided.

3. The bracketed requirement "and de-activated" has been deleted since, as described in the ISTS Bases, the safety function is accomplished with the valves closed.

Improved Standard Technical Specifications (ISTS) Bases Markup and Justification for Deviations (JFDs)

SGSV

MSIVs
B 3.7.2

B 3.7 PLANT SYSTEMS

B 3.7.2 Main Steam Isolation Valves (MSIVs) SGSV Steam Generator Stop

BASES

are used to

BACKGROUND

The MSIVs isolate steam flow from the secondary side of the steam generators following a high energy line break (HELB). MSIV closure terminates flow from the unaffected (intact) steam generators. SGSV

One MSIV is located in each main steam line outside, but close to, containment. The MSIVs are downstream from the main steam safety valves (MSSVs) and auxiliary feedwater (AFW) pump turbine steam supply, to prevent MSSV and AFW isolation from the steam generators by MSIV closure. Closing the MSIVs isolates each steam generator from the others, and isolates the turbine, Steam Bypass System, and other auxiliary steam supplies from the steam generators. SGSV

INSERT 1

The MSIVs close on a main steam isolation signal generated by either low steam generator pressure or high containment pressure. The MSIVs fail closed on loss of control or actuation power. Steam generator SGSV

INSERT 1A

Each MSIV has an MSIV bypass valve. Although these bypass valves are normally closed, they receive the same emergency closure signal as do their associated MSIVs. The MSIVs may also be actuated manually.

A description of the MSIVs is found in the FSAR, Section 10.3 (Ref. 1). SGSV

APPLICABLE SAFETY ANALYSES

The design basis of the MSIVs is established by the containment analysis for the large steam line break (SLB) inside containment, discussed in the FSAR, Section [6.2] (Ref. 2). It is also affected by the accident analysis of the SLB events presented in the FSAR, Section [15.1.5] (Ref. 3). The design precludes the blowdown of more than one steam generator, assuming a single active component failure (e.g., the failure of one MSIV to close on demand). SGSV 14.2.5

INSERT 1B

INSERT 1C

The limiting case for the containment analysis is the SLB inside containment, with a loss of offsite power following turbine trip, and failure of the MSIV on the affected steam generator to close. At lower powers, the steam generator inventory and temperature are at their maximum, maximizing the analyzed mass and energy release to the containment. Due to reverse flow and failure of the MSIV to close, the additional mass and energy in the steam headers downstream from the other MSIV contribute to the total release. With the most reactive rod cluster control assembly assumed stuck in the fully withdrawn position, there is an SGSV

1 **INSERT 1**

the Engineered Safety Feature Actuation System (ESFAS) logic. These signals include the Containment Pressure - High High signal, High Steam Flow in Two Steam Lines Coincident with T_{avg} - Low Low, and Steam Line Pressure - Low. In addition, emergency closure can be initiated by operator actuation of the dump valves in the SGSV Control System.

1 **INSERT 1A**

air and fail as-is on loss of DC control

1 **INSERT 1B**

upstream of the steam flow restrictor (i.e., inside containment)

1 **INSERT 1C**

with the unit initially at no load conditions

SGSV

MSIVs
B 3.7.2

(1)

BASES

APPLICABLE SAFETY ANALYSES (continued)

increased possibility that the core will become critical and return to power. The core is ultimately shut down by the boric acid injection delivered by the Emergency Core Cooling System.

(3)

The accident analysis compares several different SLB events against different acceptance criteria. ~~The large SLB outside containment upstream of the MSIV is limiting for offsite dose, although a break in this short section of main steam header has a very low probability. The large SLB inside containment at hot zero power is the limiting case for a post trip return to power.~~ The analysis includes scenarios with offsite power available, and with a loss of offsite power following turbine trip. With offsite power available, the reactor coolant pumps continue to circulate coolant through the steam generators, maximizing the Reactor Coolant System (RCS) cooldown. With a loss of offsite power, the response of mitigating systems is delayed. Significant single failures considered include failure of an MSIV SGSV to close. (1) (1)

The MSIVs SGSVs serve only a closed safety function and remain open during power operation. These valves operate under the following situations: INSERT 2 (1)

(3)

~~a. An HELB inside containment. In order to maximize the mass and energy release into containment, the analysis assumes that the MSIV in the affected steam generator remains open. For this accident scenario, steam is discharged into containment from all steam generators until the remaining MSIVs close. After MSIV closure, steam is discharged into containment only from the affected steam generator and from the residual steam in the main steam header downstream of the closed MSIVs in the unaffected loops. Closure of the MSIVs isolates the break from the unaffected steam generators.~~

~~b. A break outside of containment and upstream from the MSIVs is not a containment pressurization concern. The uncontrolled blowdown of more than one steam generator must be prevented to limit the potential for uncontrolled RCS cooldown and positive reactivity addition. Closure of the MSIVs isolates the break and limits the blowdown to a single steam generator.~~

~~c. A break downstream of the MSIVs will be isolated by the closure of the MSIVs.~~

1 **INSERT 2**

{Unit 1 only} and

during a SLB, steam generator tube rupture, and feedwater line break.

{Unit 2 only} {Unit 2 only}

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SGSV MSIVs 1
B 3.7.2

BASES

APPLICABLE SAFETY ANALYSES (continued)

~~d. Following a steam generator tube rupture, closure of the MSIVs isolates the ruptured steam generator from the intact steam generators to minimize radiological releases.~~ 3

~~e. The MSIVs are also utilized during other events such as a feedwater line break. This event is less limiting so far as MSIV OPERABILITY is concerned.~~

SGSV

The MSIVs satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

SGSV

LCO

This LCO requires that four MSIVs in the steam lines be OPERABLE. 2 1
SGSV The MSIVs are considered OPERABLE when the isolation times are within limits, and they close on an isolation actuation signal. 1

SGSV

This LCO provides assurance that the MSIVs will perform their design safety function to mitigate the consequences of accidents that could result in offsite exposures comparable to the 10 CFR 100 (Ref. 6) limits ~~or the NRC staff approved licensing basis~~. 3 1

a small fraction of

APPLICABILITY

The MSIVs must be OPERABLE in MODE 1, and in MODES 2 and 3 except when closed ~~and de-activated~~, when there is significant mass and energy in the RCS and steam generators. When the MSIVs are closed, they are already performing the safety function. 1 5 1

SGSV SGSV

, thus the probability of a SLB is low

In MODE 4, ~~normally most of the MSIVs are closed, and~~ the steam generator energy is low. 1

In MODE 5 or 6, the steam generators do not contain much energy because their temperature is below the boiling point of water; therefore, the MSIVs are not required for isolation of potential high energy secondary system pipe breaks in these MODES. 1

SGSV

ACTIONS

A.1

SGSV

With one MSIV inoperable in MODE 1, action must be taken to restore OPERABLE status within [8] hours. Some repairs to the MSIV can be made with the unit hot. The [8] hour Completion Time is reasonable, considering the low probability of an accident occurring during this time period that would require a closure of the MSIVs. 1 1 2 2 1

SGSV SGSV

~~The [8] hour Completion Time is greater than that normally allowed for containment isolation valves because the MSIVs are valves that isolate a~~ 1

S6SV MSIVs 1
B 3.7.2

BASES

ACTIONS (continued)

~~closed system penetrating containment. These valves differ from other containment isolation valves in that the closed system provides an additional means for containment isolation.~~ 1

B.1 1

S6SV

If the MSIV cannot be restored to OPERABLE status within [8] hours, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in MODE 2 within 6 hours and Condition C would be entered. The Completion Times ~~are~~ is reasonable, based on operating experience, to reach MODE 2 ~~and to close the MSIVs~~ in an orderly manner and without challenging unit systems. 4

C.1 and C.2

Condition C is modified by a Note indicating that separate Condition entry is allowed for each MSIV. 1

S6SV

Since the MSIVs are required to be OPERABLE in MODES 2 and 3, the inoperable MSIVs ~~may either~~ must be ~~restored to OPERABLE status or~~ closed. When closed, the MSIVs are already in the position required by the assumptions in the safety analysis. 4

S6SV 1 2

The [8] hour Completion Time is consistent with that allowed in Condition A.

S6SV 1 4

For inoperable MSIVs that ~~cannot be restored to OPERABLE status within the specified Completion Time, but~~ are closed, the inoperable MSIVs must be verified on a periodic basis to be closed. This is necessary to ensure that the assumptions in the safety analysis remain valid. The 7 day Completion Time is reasonable, based on engineering judgment, in view of MSIV status indications available in the control room, and other administrative controls, to ensure that these valves are in the closed position. 1

D.1 and D.2

S6SV

If the MSIVs ~~cannot be restored to OPERABLE status or~~ are not closed within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed at least in MODE 3 within 6 hours, and in MODE 4 within 12 hours. The allowed Completion Times are reasonable, based on 1 4

SGSV (1)
MSIVs
B 3.7.2

BASES

ACTIONS (continued)

operating experience, to reach the required unit conditions from MODE 2 conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.2.1

SGSV 8 SGSV

This SR verifies that MSIV closure time is ≤ 4.6 seconds. The MSIV isolation time is assumed in the accident ~~and containment~~ analyses. This Surveillance is normally performed upon returning the unit to operation following a refueling outage. The MSIVs should not be tested at power, since ~~even a part stroke exercise increases the risk of a valve closure when the unit is generating power~~. As the MSIVs are not tested at power, they are exempt from the ASME Code ~~Section XI~~ (Ref. 5) requirements during operation in MODE 1 or 2. (1) (2) (1) SGSV (1) (4) (1)

a unit trip could occur

OM

The Frequency is in accordance with the Inservice Testing Program.

This test is conducted in MODE 3 with the unit at operating temperature and pressure. This SR is modified by a Note that allows entry into and operation in MODE 3 prior to performing the SR. This allows a delay of testing until MODE 3, to establish conditions consistent with those under which the acceptance criterion was generated.

SR 3.7.2.2 (1)

SGSV

This SR verifies that each MSIV can close on an actual or simulated actuation signal. This Surveillance is normally performed upon returning the plant to operation following a refueling outage. The Frequency of MSIV testing is every 18 months. The 18 month Frequency for testing is based on ~~the refueling cycle~~. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency. Therefore, this Frequency is acceptable from a reliability standpoint. (1) 24 (1) (2) (1) (2)

unit

SGSV

equipment reliability

24

REFERENCES

1. FSAR, Section [10.3]. 10.2 (1) (2)

~~2. FSAR Section [6.2].~~ (1)

(2) 3. FSAR, Section [15.1.5]. 14.2.5 (1) (2)

(3) 4. 10 CFR 100.11. (1)

SGSV 1

~~MSIVs~~
B 3.7.2

BASES

REFERENCES (continued)

4 ~~5~~ ASME, ~~Boiler and Pressure Vessel Code, Section XI~~ 1

Operations and Maintenance Standards and Guides (OM Codes)

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.2 BASES, STEAM GENERATOR STOP VALVES (SGSVs)

1. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.
2. The brackets are removed and the proper plant specific information/value is provided.
3. The details concerning the main steam line break are located in UFSAR Section 14.2.5. The details included in the ISTS 3.7.2 Applicable Safety Analyses Bases are not necessary and have been deleted.
4. Changes are made to reflect the actual Specification.
5. Changes are made to reflect changes made to the Specification.

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.2, STEAM GENERATOR STOP VALVES

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 3

ITS 3.7.3, Main Feedwater Isolation Valves (MFIVs) and Main Feedwater Regulation Valves (MFRVs)

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

Add proposed ITS 3.7.3

M.1

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ITS 3.7.3

Add proposed ITS 3.7.3

M.1

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DISCUSSION OF CHANGES
ITS 3.7.3, MAIN FEEDWATER ISOLATION VALVES (MFIVs)
AND MAIN FEEDWATER REGULATION VALVES (MFRVs)

ADMINISTRATIVE CHANGES

None

MORE RESTRICTIVE CHANGES

M.1 The CTS does not have any requirement for Main Feedwater Isolation Valves (MFIVs) and Main Feedwater Regulation Valves (MFRVs) to be OPERABLE, other than a CTS 3.3.2.1 requirement for an actuation signal to be supplied to the valves. ITS 3.7.3 requires the MFIVs and MFRVs to be OPERABLE in MODES 1, 2, and 3. This changes the CTS by incorporating the requirements of ITS 3.7.3.

The safety related function of the MFIVs and MFRVs is to provide isolation of main feedwater from the secondary side of the steam generators following a steam line break. This change is acceptable because the safety analyses assume that closure of the MFIVs and the MFRVs limits the mass and energy release for steam line breaks, and minimizes the positive reactivity effects of the Reactor Coolant System (RCS) cooldown associated with the blowdown. This change is designated as more restrictive because it adds new requirements to the CTS.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

None

LESS RESTRICTIVE CHANGES

None

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Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

 ①

CTS

3.7 PLANT SYSTEMS

3.7.3 Main Feedwater Isolation Valves (MFIVs) and Main Feedwater Regulation Valves (MFRVs) and [Associated Bypass Valves] ①

DOC M.1 LCO 3.7.3 [Four] MFIVs, [four] MFRVs, and [associated bypass valves] shall be OPERABLE. ① ②

DOC M.1 APPLICABILITY: MODES 1, [and 2] [2, and 3] except when MFIV, or MFRV, or [associated bypass valve] is either closed and [de-activated] or [isolated by a closed manual valve]. ① ②

ACTIONS

DOC M.1

- NOTE -
Separate Condition entry is allowed for each valve.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more MFIVs inoperable.	A.1 Close or isolate MFIV. AND A.2 Verify MFIV is closed or isolated.	[72] hours ② Once per 7 days
B. One or more MFRVs inoperable.	B.1 Close or isolate MFRV. AND B.2 Verify MFRV is closed or isolated.	[72] hours ② Once per 7 days
C. [One or more [MFRV or preheater] bypass valves inoperable.	C.1 Close or isolate bypass valve. AND C.2 Verify bypass valve is closed or isolated.	[72] hours Once per 7 days] ①

DOC M.1

DOC M.1

CTS

ACTIONS (continued) MFIV and MFRV

	CONDITION	REQUIRED ACTION		COMPLETION TIME
DOC M.1	C E. Two valves in the same flow path inoperable.	E.1 C	Isolate affected flow path.	8 hours
DOC M.1	D F. Required Action and associated Completion Time not met.	F.1 AND D F.2	Be in MODE 3. Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY
DOC M.1	SR 3.7.3.1	Verify the isolation time of each MFIV, MFRV[, and associated bypass valve] is ≤ [7] seconds. 44	In accordance with the Inservice Testing Program
DOC M.1	SR 3.7.3.2 3	Verify each MFIV and MFRV[, and associated bypass valve] actuates to the isolation position on an actual or simulated actuation signal.	[18] months 24

INSERT 1

CTS

3 INSERT 1

DOC M.1

SR 3.7.3.2	Verify the isolation time of each MFRV is ≤ 8 seconds.	In accordance with the Inservice Testing Program

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JUSTIFICATION FOR DEVIATIONS
ITS 3.7.3, MAIN FEEDWATER ISOLATION VALVES (MFIVs)
AND MAIN FEEDWATER REGULATION VALVES (MFRVs)

1. The bracketed information/value has been deleted since it does not apply to the CNP Unit 1 and Unit 2 design. Subsequent requirements have been renumbered, as applicable. In addition, since there are only two types of valves covered by the Specification, ISTS 3.7.3 Condition D has been modified to reflect the specific valves.

2. The brackets are removed and the proper plant specific information/value is provided.

3. Since the isolation times are different for MFIVs and MFRVs, ISTS SR 3.7.3.1 has been split into two SRs, ITS SR 3.7.3.1 and SR 3.7.3.2.

Improved Standard Technical Specifications (ISTS) Bases Markup and Justification for Deviations (JFDs)

(1)

B 3.7 PLANT SYSTEMS

B 3.7.3 Main Feedwater Isolation Valves (MFIVs) and Main Feedwater Regulation Valves (MFRVs) ~~and Associated Bypass Valves~~ (1)

BASES

BACKGROUND

The MFIVs isolate main feedwater (MFW) flow to the secondary side of the steam generators following ~~a high energy line break (HELB)~~. The safety related function of the MFRVs is to provide the second isolation of MFW flow to the secondary side of the steam generators following ~~an HELB~~. Closure of the MFIVs ~~and associated bypass valves~~ or MFRVs ~~and associated bypass valves~~ terminates flow to the steam generators, terminating the event for feedwater line breaks (FWLBs) occurring upstream of the MFIVs or MFRVs. The consequences of events occurring in the main steam lines or in the MFW lines downstream from the MFIVs will be mitigated by their closure. Closure of the MFIVs ~~and associated bypass valves~~ or MFRVs ~~and associated bypass valves~~ effectively terminates the addition of feedwater to an affected steam generator, limiting the mass and energy release for steam line breaks (SLBs) or FWLBs inside containment and reducing the cooldown effects for SLBs.

INSERT 1

INSERT 2

Unit 2 only

Unit 2 only

(1)

The MFIVs ~~and associated bypass valves~~ or MFRVs ~~and associated bypass valves~~ isolate the nonsafety related portions from the safety related portions of the system. In the event of a secondary side pipe rupture inside containment, the valves limit the quantity of high energy fluid that enters containment through the break, and provide a pressure boundary for the controlled addition of auxiliary feedwater (AFW) to the intact loops. (1)

One MFIV ~~and associated bypass valve~~ and one MFRV ~~and its associated bypass valve~~ are located on each MFW line, outside ~~but close to~~ containment. The MFIVs and MFRVs are located upstream of the AFW injection point so that AFW may be supplied to the steam generators following MFIV or MFRV closure. ~~The piping volume from these valves to the steam generators must be accounted for in calculating mass and energy releases, and refilled prior to AFW reaching the steam generator following either an SLB or FWLB.~~ (1) (1) (5)

The MFIVs ~~and associated bypass valves~~ and MFRVs ~~and associated bypass valves~~ close on receipt of a ~~T_{avg} - Low coincident with reactor trip (P-4) or steam generator water level - high high signal~~. They may also be actuated manually. In addition to the MFIVs ~~and associated bypass valves~~ and the MFRVs ~~and associated bypass valves~~, a check valve and a manual valve ~~inside~~ outside containment ~~is~~ are available. ~~The check valve isolates the feedwater~~

INSERT 3

(1)

1 **INSERT 1**

receipt of a feedwater isolation signal (Safety Injection Input from ESFAS, Steam Generator Water Level - High High, or Reactor Trip, P-4 coincident with T_{avg}-Low)

1 **INSERT 2**

receipt of a feedwater isolation signal

1 **INSERT 3**

feedwater isolation signal

BASES

BACKGROUND (continued)

line, penetrating containment, and ensures that the consequences of events do not exceed the capacity of the containment heat removal systems. ①

A description of the MFIVs and MFRVs is found in the U FSAR, Section ~~10.4.7~~ 10.5.1.2 (Ref. 1). ②

APPLICABLE SAFETY ANALYSES

The design basis of the MFIVs and MFRVs is established by the analyses for the large SLB. ~~It is also influenced by the accident analysis for the large FWLB.~~ ① Closure of the ~~MFIVs and associated bypass valves or~~ MFRVs ~~and associated bypass valves~~ may also be relied on to terminate an SLB for core response analysis and excess feedwater event upon the receipt of a steam generator water level - high high signal ~~or a feedwater isolation signal on high steam generator level~~. ①

<Unit 2 only>

INSERT 3A

<Unit 2 only>

Failure of an ~~MFIV,~~ MFRV, ~~or the associated bypass valves~~ to close following an SLB ~~or FWLB~~ can result in additional mass and energy being delivered to the steam generators, contributing to cooldown. This failure also results in additional mass and energy releases following an SLB ~~or FWLB~~ event. ① INSERT 3B ① ①

The MFIVs and MFRVs satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

This LCO ensures that the MFIVs, MFRVs, ~~and their associated bypass valves~~ will isolate MFW flow to the steam generators, following an ~~FWLB or main steam line break~~. These valves will also isolate the nonsafety related portions from the safety related portions of the system. ①

INSERT 4

This LCO requires that ~~four~~ MFIVs ~~and associated bypass valves~~ and ~~four~~ MFRVs ~~and associated bypass valves~~ be OPERABLE. The MFIVs and MFRVs ~~and the associated bypass valves~~ are considered OPERABLE when isolation times are within limits and they close on an isolation actuation signal. ② ① ①

<Unit 2 only>

Failure to meet the LCO requirements can result in additional mass and energy being released to containment following an SLB ~~or FWLB~~ inside containment. ~~If~~ Since a feedwater isolation signal on ~~high~~ steam generator Water level High High is relied on to terminate an excess feedwater flow event, failure to meet the LCO may result in the introduction of water into the main steam lines. ①

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1 **INSERT 3A**

The MFRVs are assumed to close following a large SLB to limit the resulting Reactor Coolant System (RCS) cooldown, which could cause a return to criticality of the core. While

1 **INSERT 3B**

, this is not assumed since a single failure of one train of SI instrumentation is more limiting. The MFIVs are assumed to close following a large SLB in order to limit the mass and energy released into the containment. Failure of an MFIV to close in the faulted loop is also assumed

1 **INSERT 4**

event requiring their isolation

BASES

APPLICABILITY

The MFIVs and MFRVs ~~and the associated bypass valves~~ must be OPERABLE whenever there is significant mass and energy in the ~~Reactor Coolant System~~ RCS and steam generators. This ensures that, in the event of a ~~HELB~~, a single failure cannot result in the blowdown of more than one steam generator. In MODES 1, 2, and 3, the MFIVs and MFRVs ~~and the associated bypass valves~~ are required to be OPERABLE to limit the amount of available fluid that could be added to containment in the case of a ~~secondary system pipe break~~ inside containment. When the valves are closed and de-activated or isolated by a closed manual valve, they are already performing their safety function. (1) (1) (2) (1) (1)

INSERT 5

INSERT 6

In MODES 4, 5, and 6, steam generator energy is low. Therefore, the MFIVs, MFRVs, ~~and the associated bypass valves~~ are normally closed since MFW is not required. (1)

ACTIONS

The ACTIONS Table is modified by a Note indicating that separate Condition entry is allowed for each valve.

A.1 and A.2

With one MFIV ~~in one~~ or more ~~flow paths~~ inoperable, action must be taken to restore the affected valves to OPERABLE status, or to close or isolate inoperable affected valves within [72] hours. When these valves are closed or isolated, they are performing their required safety function. (4) (2)

The [72] hour Completion Time takes into account the redundancy afforded by the remaining OPERABLE valves and the low probability of an event occurring during this time period that would require isolation of the MFW flow paths. The [72] hour Completion Time is reasonable, based on operating experience. (2) (2)

Inoperable MFIVs that are closed or isolated must be verified on a periodic basis that they are closed or isolated. This is necessary to ensure that the assumptions in the safety analysis remain valid. The 7 day Completion Time is reasonable, based on engineering judgment, in view of valve status indications available in the control room, and other administrative controls, to ensure that these valves are closed or isolated.

B.1 and B.2

With one MFRV ~~in one~~ or more ~~flow paths~~ inoperable, action must be taken to restore the affected valves to OPERABLE status, or to close or isolate inoperable affected valves within [72] hours. When these valves are closed or isolated, they are performing their required safety function. (4) (2)

1 **INSERT 5**

FWLB or SLB

{Unit 2 only}

1 **INSERT 6**

FWLB or SLB

{Unit 2 only}

BASES

ACTIONS (continued)

The ~~[72]~~ hour Completion Time takes into account the redundancy afforded by the remaining OPERABLE valves and the low probability of an event occurring during this time period that would require isolation of the MFW flow paths. The ~~[72]~~ hour Completion Time is reasonable, based on operating experience. (2) (2)

Inoperable MFRVs, that are closed or isolated, must be verified on a periodic basis that they are closed or isolated. This is necessary to ensure that the assumptions in the safety analysis remain valid. The 7 day Completion Time is reasonable, based on engineering judgment, in view of valve status indications available in the control room, and other administrative controls to ensure that the valves are closed or isolated.

~~C.1 and C.2~~ (3)

~~With one associated bypass valve in one or more flow paths inoperable, action must be taken to restore the affected valves to OPERABLE status, or to close or isolate inoperable affected valves within [72] hours. When these valves are closed or isolated, they are performing their required safety function.~~

~~The [72] hour Completion Time takes into account the redundancy afforded by the remaining OPERABLE valves and the low probability of an event occurring during this time period that would require isolation of the MFW flow paths. The [72] hour Completion Time is reasonable, based on operating experience.~~

~~Inoperable associated bypass valves that are closed or isolated must be verified on a periodic basis that they are closed or isolated. This is necessary to ensure that the assumptions in the safety analysis remain valid. The 7 day Completion Time is reasonable, based on engineering judgment, in view of valve status indications available in the control room, and other administrative controls, to ensure that these valves are closed or isolated.~~

C ~~D~~.1 (3)

both the MFIV and MFRV   is

With ~~two~~ inoperable ~~valves~~ in the same flow path, there ~~may be~~ no redundant system to operate automatically and perform the required safety function. ~~Although the containment can be isolated with the failure of two valves in parallel in the same flow path, the double failure can be an indication of a common mode failure in the valves of this flow path, and as such, is treated the same as a loss of the isolation capability of~~ (3) (1) (1)

 1

BASES

ACTIONS (continued)

this flow path. Under these conditions ~~affected valves in each flow path must be restored to OPERABLE status, or~~ the affected flow path must be isolated within 8 hours. This action returns the system to the condition where at least one valve in each flow path is performing the required safety function. The 8 hour Completion Time is reasonable, based on operating experience, to complete the actions required to close the MFIV or MFRV, or otherwise isolate the affected flow path. 1 4 4

D E.1 and E.2

If ~~the MFIV(s) and MFRV(s) and the associated bypass valve(s) cannot be restored to OPERABLE status, or closed, or isolated within the associated Completion Time,~~ INSERT 7 the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours and in MODE 4 within 12 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 unit systems. 4 2

SURVEILLANCE REQUIREMENTS

SR 3.7.3.1 and SR 3.7.3.2 4

These SRs verify that the closure time of each MFIV, MFRV, ~~and associated bypass valve~~ is ≤ 44 seconds and 68 seconds, respectively. The MFIV and MFRV isolation times are assumed in the accident and ~~containment~~ transient analyses. ~~This Surveillance is normally performed upon returning the unit to operation following a refueling outage. These valves should not be tested at power since even a part stroke exercise increases the risk of a valve closure with the unit generating power. This is consistent with the ASME Code, Section XI (Ref. 2), quarterly stroke requirements during operation in MODES 1 and 2.~~ 1 2 1 1 4

The Frequency for this SR is in accordance with the Inservice Testing Program.

SR 3.7.3.3 4

This SR verifies that each MFIV, MFRV, ~~and associated bypass valve~~ can close on an actual or simulated actuation signal. This Surveillance is normally performed upon returning the ~~plant~~ unit to operation following a refueling outage. 1 1

The Frequency for this SR is every ~~18~~ 24 months. ~~The 18 month Frequency for testing is based on the refueling cycle.~~ Operating 1 2 1

4 **INSERT 7**

any Required Action and associated Completion Time is not met

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BASES

SURVEILLANCE REQUIREMENTS (continued)

experience has shown that these components usually pass the Surveillance when performed at the ~~(18)~~ 24 month Frequency. Therefore, this Frequency is acceptable from a reliability standpoint. 2

REFERENCES

1. (U)FSAR, Section ~~(10.4.7)~~. 10.5.1.2 1 2

2. ASME, Boiler and Pressure Vessel Code, Section XI. 1

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.3 BASES, MAIN FEEDWATER ISOLATION VALVES (MFIVs) AND MAIN FEEDWATER REGULATION VALVES (MFRVs)

1. Changes are made (additions, deletions, and/or changes) to the ISTS Bases, which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. The brackets are removed and the proper plant specific information/value is provided.

3. Changes are made to reflect changes to the Specification.

4. Changes are made to be consistent with the Specification.

5. This discussion is more appropriate for the Applicable Safety Analyses (ASA) Section. However, the ASA Section does not provide any details concerning the Auxiliary Feedwater System, thus it is deleted and not added to the ASA Section.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.3, MAIN FEEDWATER ISOLATION VALVES (MFIVs) AND MAIN FEEDWATER REGULATION VALVES (MFRVs)

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 4

ITS 3.7.4, Steam Generator (SG) Power Operated Relief Valves (PORVs)

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

Add proposed ITS 3.7.4

M.1

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Add proposed ITS 3.7.4

M.1

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DISCUSSION OF CHANGES
ITS 3.7.4, STEAM GENERATOR (SG) POWER OPERATED RELIEF VALVES (PORVs)

ADMINISTRATIVE CHANGES

None

MORE RESTRICTIVE CHANGES

M.1 The CTS does not have any Technical Specification requirements for Steam Generator (SG) Power Operated Relief Valves (PORVs). ITS 3.7.4 specifies the requirements for the SG PORVs, consistent with the requirements of ISTS 3.7.4, "Atmospheric Dump Valves." This changes the CTS by incorporating the requirements of ITS 3.7.4.

The purpose of the ITS 3.7.4 requirements is to ensure that the SG PORVs are available to conduct a unit cool down following a Steam Generator Tube Rupture. This change is acceptable because the SG PORVs provide a means for the operator to cool down the unit to RHR entry conditions for accidents accompanied by a loss of offsite power. This change is considered more restrictive because it is adding a new requirement to the Technical Specifications.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

None

LESS RESTRICTIVE CHANGES

None

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Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

CTS

SG PORV ADVs
3.7.4 ①

3.7 PLANT SYSTEMS INSERT 1 ①

3.7.4 Atmospheric Dump Valves (ADVs)

DOC M.1

LCO 3.7.4 Three ADV lines shall be OPERABLE. Four SG PORVs ② ①

INSERT 2 ③ ④

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is relied upon for heat removal.

ACTIONS

TSTF-359

CONDITION	REQUIRED ACTION	COMPLETION TIME
DOC M.1 A. One required ADV line inoperable SG PORV in MODE 1, 2, or 3	A.1 ~~- NOTE - LCO 3.0.4 is not applicable.~~ SG PORV Restore required ADV line to OPERABLE status.	7 days
DOC M.1 B. Two or more required ADV lines inoperable SG PORVs in Modes 1, 2, or 3	B.1 Restore all but one ADV line to OPERABLE status. SG PORV	24 hours
DOC M.1 C. Required Action and associated Completion Time not met. of Condition A or B	C.1 Be in MODE 3. AND C.2 Be in MODE 4 without reliance upon steam generator for heat removal.	6 hours ~~24~~ hours

① ③ ① ④ ③ ① ③ ④ ④ ②

INSERT 3 ④

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
DOC M.1 SR 3.7.4.1	Verify one complete cycle of each ADV. SG PORV	~~18~~ 24 months ②

1 **INSERT 1**

Steam Generator (SG) Power Operated Relief Valves (PORVs)

4 **INSERT 2**

-NOTE-
Only the SG PORVs associated with the SGs required to be OPERABLE by LCO 3.4.6, "RCS Loops - MODE 4," are required to be OPERABLE in MODE 4.

4 **INSERT 3**

D. One or more required SG PORVs inoperable in MODE 4.	D.1 Initiate action to restore inoperable SG PORV(s) to OPERABLE status.	Immediately

SG PORV ①

CTS

~~ADVs~~
3.7.4

③

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
~~SR 3.7.4.2~~	~~[Verify one complete cycle of each ADV block valve.~~	~~[18] months]~~

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.4, STEAM GENERATOR (SG) POWER OPERATED RELIEF VALVES (PORVs)

1. Changes are made (additions, deletions, and/or changes) to the ISTS, which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. The brackets are removed and the proper plant specific information/value is provided.

3. The SG PORV block valves are local, manual operated valves; they cannot be operated from the control room. Therefore, if an SG PORV inadvertently opens, it can only be isolated by manually closing the isolation valve upstream of the SG PORV, which is located in the main steam stop valve enclosure. In addition, closure of these valves takes several minutes due to their large size. Therefore, the isolation valve requirements are not included in ITS 3.7.4. Appropriate changes to the ACTIONS (deleting the words "line" and "lines") have also been made.

4. The manner in which the ISTS LCO statement is written implies that when in MODE 4 with any steam generator (SG) relied upon for heat removal, all the ADVs (changed to the CNP terminology SG PORVs in the ITS) are required to be OPERABLE. However, the only SG PORVs necessary are the ones associated with an SG that is required to be OPERABLE by ITS 3.4.6, "RCS Loops - MODE 4." At most, ITS 3.4.6 only requires two SGs to be OPERABLE. Therefore, to be consistent with the actual intent, a Note has been added clarifying that only the SG PORVs associated with the SGs required to be OPERABLE by ITS 3.4.6 are required to be OPERABLE in MODE 4. In addition, Conditions A, B, and C have been modified and ACTION D added, consistent with similar wording in ITS 3.7.5, "AFW System." The AFW System Specification allows a reduced complement of AFW trains in MODE 4 for the same reason.

Improved Standard Technical Specifications (ISTS) Bases Markup and Justification for Deviations (JFDs)

SG PORV ① ADVs
B 3.7.4

B 3.7 PLANT SYSTEMS ①

B 3.7.4 ~~Atmospheric Dump Valves (ADVs)~~ INSERT 1

BASES

SG PORV

BACKGROUND

The ADVs provide a method for cooling the unit to residual heat removal (RHR) entry conditions should the preferred heat sink via the Steam ~~Bypass~~ Dump System to the condenser not be available, as discussed in the (U)FSAR, Section ~~10.3~~ 10.7.2 (Ref. 1). This is done in conjunction with the Auxiliary Feedwater System providing cooling water from the condensate storage tank (CST). The ~~ADVs~~ SG PORV may also be required to meet the design cooldown rate during a normal cooldown when steam pressure drops too low for maintenance of a vacuum in the condenser to permit use of the Steam Dump System. ① ② ①

SG PORV

One ADV line for each of the (four) steam generators is provided. Each ADV line consists of one ADV and an associated ~~block~~ valve. ① ② ①

SG PORV, isolation

The ADVs are provided with upstream ~~block~~ isolation valves to permit their being tested at power, and to provide an alternate means of isolation. The ADVs are equipped with pneumatic controllers to permit control of the cooldown rate. INSERT 2 ① ①

SG PORV

~~The ADVs are usually provided with a pressurized gas supply of bottled nitrogen that, on a loss of pressure in the normal instrument air supply, automatically supplies nitrogen to operate the ADVs. The nitrogen supply is sized to provide the sufficient pressurized gas to operate the ADVs for the time required for Reactor Coolant System cooldown to RHR entry conditions.~~ ③

SG PORV

A description of the ADVs is found in Reference 1. ~~The ADVs are OPERABLE with only a DC power source available.~~ In addition, handwheels are provided for local manual operation. ①

SG PORV

APPLICABLE SAFETY ANALYSES

The design basis of the ADVs is established by the capability to cool the unit to RHR entry conditions. ~~The design rate of [75]°F per hour is applicable for two steam generators, each with one ADV. This rate is~~ adequate to cool the unit to RHR entry conditions with only ~~one~~ three steam generator and ~~one~~ associated ADV, utilizing the cooling water supply available in the CST. ① INSERT 2A ③ SG PORVs ①

② SG PORV

In the accident analysis presented in Reference ~~3~~ 2, the ADVs are assumed to be used by the operator to cool down the unit to RHR entry conditions for accidents accompanied by a loss of offsite power. Prior to ①

1 **INSERT 1**

Steam Generator (SG) Power Operated Relief Valves (PORVs)

1 **INSERT 2**

The Control Air System provides the normal air supply for pneumatic control.

1 **INSERT 2A**

The accident analysis assumes the capacity of each SG PORV is 370,000 lb/hr steam flow. This capacity is

SG PORV ADVs ①
B 3.7.4

BASES

APPLICABLE SAFETY ANALYSES (continued) ①

SG PORV

operator actions to cool down the unit, the ADVs and main steam safety valves (MSSVs) are assumed to operate automatically to relieve steam and maintain the steam generator pressure below the design value. For the recovery from a steam generator tube rupture (SGTR) event, the operator is also required to perform a limited cooldown to establish adequate subcooling as a necessary step to terminate the primary to secondary break flow into the ruptured steam generator. The time required to terminate the primary to secondary break flow for an SGTR is more critical than the time required to cool down to RHR conditions for this event and also for other accidents. Thus, the SGTR is the limiting event for the ADVs. ~~The number of ADVs required to be OPERABLE to satisfy the SGTR accident analysis requirements depends upon the number of unit loops and consideration of any single failure assumptions regarding the failure of one ADV to open on demand.~~ ①

However, automatic actuation of the SG PORVs is not credited.

INSERT 3

SG PORV

The ADVs are equipped with block valves in the event an ADV spuriously fails to open or fails to close during use. ①

isolation

SG PORV

SG PORVs

The ADVs satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

are four

SG PORV ① ② ④

LCO Four

Three ADV lines are required to be OPERABLE. One ADV line is required from each of three steam generators to ensure that at least one ADV line is available to conduct a unit cooldown following an SGTR, in which one steam generator becomes unavailable, ~~accompanied by a single, active failure of a second ADV line on an unaffected steam generator. The block valves must be OPERABLE to isolate a failed open ADV line. A closed block valve does not render it or its ADV line inoperable if operator action time to open the block valve is supported in the accident analysis.~~ ① ④

three

SG PORVs

④

Failure to meet the LCO can result in the inability to cool the unit to RHR entry conditions following an event in which the condenser is unavailable for use with the Steam Bypass System. ①

Dump

SG PORV

An ADV is considered OPERABLE when it is ~~capable of providing controlled relief of the main steam flow and~~ capable of fully opening and closing ~~on demand~~. ①

, manually from the control room,

APPLICABILITY

In MODES 1, 2, and 3, and in MODE 4, when a steam generator is being relied upon for heat removal, the ADVs are required to be OPERABLE. ①

In MODE 5 or 6, an SGTR is not a credible event.

SG PORV

1 **INSERT 3**

Four SG PORVs are required to be OPERABLE to satisfy the SGTR accident analysis.

SG PORV 1

ADVs

B 3.7.4

BASES

ACTIONS

A.1

4

SG PORV

With one required ADV line inoperable, action must be taken to restore OPERABLE status within 7 days. The 7 day Completion Time allows for the redundant capability afforded by the remaining OPERABLE ADV lines, a nonsafety grade backup in the Steam Bypass System and MSSVs. Required Action A.1 is modified by a Note indicating that LCO 3.0.4 does not apply.

Dump

TSTF-359

1

B.1

isolation

SG PORVs

SG PORV

SG PORVs

With two or more ADV lines inoperable, action must be taken to restore all but one ADV line to OPERABLE status. Since the block valve can be closed to isolate an ADV, some repairs may be possible with the unit at power. The 24 hour Completion Time is reasonable to repair inoperable ADV lines, based on the availability of the Steam Bypass System and MSSVs, and the low probability of an event occurring during this period that would require the ADV lines.

Dump

4 4 1 4

C.1 and C.2

SG PORV(s)

If the ADV lines cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4, without reliance upon steam generator for heat removal, within [24] 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 unit systems.

1 4

2

4

INSERT 4

SURVEILLANCE REQUIREMENTS

SR 3.7.4.1

SG PORV

24 months

SG PORV

To perform a controlled cooldown of the RCS, the ADVs must be able to be opened either remotely or locally and throttled through their full range. This SR ensures that the ADVs are tested through a full control cycle at least once per fuel cycle. Performance of inservice testing or use of an ADV during a unit cooldown may satisfy this requirement. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. The Frequency is acceptable from a reliability standpoint.

24

1

2

4 INSERT 4

D.1

IF one or more required SG PORVs are inoperable in MODE 4, the unit is in a degraded condition with reduced safety related means to cool the unit to RHR entry conditions following an event, and the possibility of no means for conducting a cooldown with nonsafety related equipment since the condenser may be unavailable for use with the Steam Dump System. The seriousness of this condition requires that action be started immediately to restore the inoperable SG PORVs to OPERABLE status.

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SG PORV

ADVs ①
B 3.7.4

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~[SR 3.7.4.2~~

~~The function of the block valve is to isolate a failed open ADV. Cycling the block valve both closed and open demonstrates its capability to perform this function. Performance of inservice testing or use of the block valve during unit cooldown may satisfy this requirement. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. The Frequency is acceptable from a reliability standpoint.]~~ ④

REFERENCES 1. U FSAR, Section ~~[10.3]~~ 10.2.2. ① ②

2. UFSAR, Section 14.2.4. ②

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.4 BASES, STEAM GENERATOR (SG) POWER OPERATED RELIEF VALVES (PORVs)

1. Changes are made (additions, deletions, and/or changes) to the ISTS Bases, which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. The brackets have been removed and the proper plant specific information/value has been provided.

3. While CNP has a nitrogen supply to the SG PORVs, it is not assumed for the purposes of meeting this LCO (it is credited for 10 CFR 50 Appendix R safe shutdown analysis only).

4. Changes made to be consistent with changes made to the Specification.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.4, STEAM GENERATOR (SG) POWER OPERATED RELIEF VALVES (PORVs)

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 5

ITS 3.7.5, Auxiliary Feedwater (AFW) System

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.7 PLANT SYSTEMS

AUXILIARY FEEDWATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.1.2

LCO 3.7.5 a. At least three ~~independent~~ steam generator auxiliary feedwater ~~pumps and associated flow paths~~ trains shall be OPERABLE with: LA.1 LA.1

Add proposed LCO Note M.1

~~1. Two motor-driven auxiliary feedwater pumps, each capable of being powered from separate emergency busses, and~~

~~2. One steam turbine-driven auxiliary feedwater pump capable of being powered from an OPERABLE steam supply system.~~ LA.1

~~b. At least one auxiliary feedwater flowpath in support of Unit 2 shutdown functions shall be available.~~ L.1

APPLICABILITY: Specification 3.7.1.2.a - MODES 1, 2, 3.
~~Specification 3.7.1.2.b - At all times when Unit 2 is in MODES 1, 2, or 3.~~ L.1

Add proposed second Applicability M.1

ACTIONS:

When Specification 3.7.1.2.a is applicable:

Add proposed ACTION A L.2 LA.1

ACTION B
ACTION C a. With one auxiliary feedwater ~~pump~~ train inoperable, restore the required auxiliary feedwater ~~pumps~~ to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within ~~the following 6~~ 18 hours. L.3

ACTION C b. With two auxiliary feedwater ~~pumps~~ train inoperable, be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within ~~the following 6~~ 18 hours. LA.1

Add proposed Required Action D.1 Note L.4

ACTION D c. With three auxiliary feedwater ~~pumps~~ train inoperable, immediately initiate corrective action to restore at least one auxiliary feedwater ~~pump~~ to OPERABLE status as soon as possible. LA.1

Add proposed ACTION E M.1

ACTIONS Note d. Specification 3.0.4.b is not applicable.

~~When Specification 3.7.1.2.b is applicable:~~

~~With no flow path to Unit 2 available, return at least one flow path to available status within 7 days, or provide equivalent shutdown capability in Unit 2 and return at least one flow path to available status within the next 60 days, or have Unit 2 in HOT STANDBY within the next 12 hours and HOT SHUTDOWN within the following 24 hours.~~ L.1

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.7 PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.7.1.2 Each auxiliary feedwater pump shall be demonstrated OPERABLE when tested pursuant to Specification 4.0.5 by:

L.5 Add proposed SR 3.7.5.2 Note

SR 3.7.5.2 a. Verifying that each motor driven auxiliary feedwater pump's developed head at the test flow point is greater than or equal to the required developed head.

SR 3.7.5.2 b. Verifying that the turbine driven auxiliary feedwater pump's developed head at the test flow point is greater than or equal to the required developed head. ~~The provisions of Specification 4.0.4 are not applicable for entry into MODE 3.~~ A.2

manual, and power operated

SR 3.7.5.1 c. Verifying at least once per 31 days that each ~~non-automatic~~ valve in the flow path that is not locked, sealed, or otherwise secured in position is in its correct position.

and in both steam supply flow paths to the steam turbine driven pump A.3

L.6 that is not locked, sealed, or otherwise secured in position

L.7

SR 3.7.5.1 d. Verifying at least once per 31 days that each automatic valve in the flow path is in the correct position ~~whenever the auxiliary feedwater system is placed in automatic control or when above 10% RATED THERMAL POWER.~~ This requirement is not applicable for those portions of the auxiliary feedwater system being used intermittently to maintain steam generator water level. M.2 if capable of being manually realigned to the AFW mode of operation

Add proposed SR 3.7.5.3 Note

SR 3.7.5.3 e. Verifying at least once per ~~18~~ 24 months that each automatic valve in the flow path actuates to its correct position upon receipt of the appropriate ~~engineered safety features~~ actuation test signal ~~required by Specification 3/4.3.2.~~ L.8 LA.2 L.9 actual or

Add proposed SR 3.7.5.4 Note 2

Add proposed SR 3.7.5.4 Note 1

SR 3.7.5.4 f. Verifying at least once per ~~18~~ 24 months that each auxiliary feedwater pump starts as designed automatically upon receipt of the appropriate ~~engineered safety features~~ actuation test signal ~~required by Specification 3/4.3.2.~~ L.8 LA.2 L.9 actual or

~~g. Verifying at least once per 18 months that the unit cross-tie valves can cycle full travel. Following cycling, the valves will be verified to be in their closed positions.~~ L.1

L.5

Add proposed SR 3.7.5.1 and SR 3.7.5.2 for MODE 4 requirement. M.1

ITS 3.7.5

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.7 PLANT SYSTEMS

AUXILIARY FEEDWATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.1.2

LCO 3.7.5 a. At least three ~~independent~~ steam generator auxiliary feedwater ~~pumps and associated flow paths~~ trains shall be OPERABLE with: LA.1 LA.1

Add proposed LCO Note M.1

~~1. Two motor-driven auxiliary feedwater pumps, each capable of being powered from separate emergency busses, and~~

~~2. One steam turbine-driven auxiliary feedwater pump capable of being powered from an OPERABLE steam supply system.~~ LA.1

~~b. At least one auxiliary feedwater flow path in support of Unit 1 shutdown function shall be available.~~ L.1

APPLICABILITY: Specification 3.7.1.2.a - MODES 1, 2, 3.
~~Specification 3.7.1.2.b - At all times when Unit 1 is in MODES 1, 2, or 3.~~ L.1

Add proposed second Applicability M.1

ACTIONS:

When Specification 3.7.1.2.a is applicable:

Add proposed ACTION A L.2 LA.1

ACTION B / ACTION C a. With one auxiliary feedwater ~~pump~~ train inoperable, restore the required auxiliary feedwater ~~pumps~~ to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in HOT Shutdown within ~~the following 6~~ 18 hours. L.3

ACTION C b. With two auxiliary feedwater ~~pumps~~ trains inoperable, be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within ~~the following 6~~ 18 hours. LA.1

Add proposed Required Action D.1 Note L.4

ACTION D c. With three auxiliary feedwater ~~pumps~~ trains inoperable, immediately initiate corrective action to restore at least one auxiliary feedwater ~~pump~~ train to OPERABLE status as soon as possible. LA.1

Add proposed ACTION E M.1

ACTIONS Note d. Specification 3.0.4.b is not applicable.

~~When Specification 3.7.1.2.b is applicable:~~

~~With no flow path to Unit 1 available, return at least one flow path to available status within 7 days, or provide equivalent shutdown capability in Unit 1 and return at least one flow path to available status within the next 60 days, or have Unit 1 in HOT STANDBY within the next 12 hours and HOT SHUTDOWN within the following 24 hours.~~ L.1

ITS 3.7.5

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.7 PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS

4.7.1.2 Each auxiliary feedwater pump shall be demonstrated OPERABLE when tested pursuant to Specification 4.0.5 by:

SR 3.7.5.2 a. Verifying that each motor driven auxiliary feed pump's developed head at the test flow point is greater than or equal to the required developed head.

L.5 Add proposed SR 3.7.5.2 Note

SR 3.7.5.2 b. Verifying that the turbine driven auxiliary feedwater pump's developed head at the test flow point is greater than or equal to the required developed head. ~~The provisions of Specification 4.0.4 are not applicable for entry into MODE 3.~~ A.2

SR 3.7.5.1 c. Verifying at least once per 31 days that each ~~non-automatic~~ manual, and power operated valve in the flow path, and in both steam supply flow paths to the steam turbine driven pump, that is not locked, sealed, or otherwise secured in position is in its correct position. A.3

SR 3.7.5.1 d. Verifying at least once per 31 days that each automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position ~~whenever the auxiliary feedwater system is placed in automatic control or when above 10% RATED THERMAL POWER.~~ This requirement is not applicable for those portions of the auxiliary feedwater system being used intermittently to maintain steam generator level. if capable of being manually realigned to the AFW mode of operation L.6 M.2

L.7

SR 3.7.5.3 Add proposed SR 3.7.5.3 Note e. Verifying at least once per ~~18~~ 24 months that each automatic valve in the flow path actuates to its correct position upon receipt of the appropriate ~~engineered safety features~~ actual or actuation test signal ~~required by Specification 3/4.3.2.~~ L.8 LA.2 L.9

SR 3.7.5.4 Add proposed SR 3.7.5.4 Note 2 Add proposed SR 3.7.5.4 Note 1 f. Verifying at least once per ~~18~~ 24 months that each auxiliary feedwater pump starts as designed automatically upon receipt of the appropriate ~~engineered safety features~~ actual or actuation test signal ~~required by Specification 3/4.3.2.~~ L.8 LA.2 L.9

~~g. Verifying at least once per 18 months that the unit cross-tie valves can cycle full travel. Following cycling, the valves will be verified to be in their closed positions.~~ L.1

L.5

Add proposed SR 3.7.5.1 and SR 3.7.5.2 for MODE 4 requirement. M.1

DISCUSSION OF CHANGES
ITS 3.7.5, AUXILIARY FEEDWATER (AFW) SYSTEM

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A.2 CTS 4.7.1.2.c requires the verification of the position of each non-automatic valve in the flow path. CTS 4.7.1.2.d requires the verification of the position of each automatic valve in the flow path. ITS SR 3.7.5.1 requires the verification of the position of each manual, power operated, and automatic valve. This changes the CTS by replacing the term "non-automatic" with "manual, power operated."

This change is acceptable because the term "non-automatic" used in CTS 4.7.1.2.c is considered to be covered by the term "manual and power operated." Therefore, the methodology for the Surveillance Requirement remains technically the same. This change is designated as administrative because it does not result in a technical change to the CTS requirement.

A.3 CTS 4.7.1.2.c requires verification that each AFW valve in the flow path is in its correct position. ITS SR 3.7.5.1 requires verification that each AFW valve in each water flow path, and in both steam supply flow paths to the steam turbine driven pump is in its correct position. This changes CTS 4.7.1.2.c by expanding the description of the applicable flow path to specifically include the power operated steam supply valves to the turbine driven AFW pump. These valves are currently considered required to be verified by CTS 4.7.1.2.c.

This change is acceptable because CTS 4.7.1.2.c is currently considered to be applicable to all valves in both water and steam flow paths. Therefore, the methodology for the Surveillance Requirement remains technically the same. This change is designated as administrative because it does not result in a technical change to the CTS requirement.

MORE RESTRICTIVE CHANGES

M.1 CTS LCO 3.7.1.2.a is applicable in MODES 1, 2, and 3. ITS LCO 3.7.5 is applicable in MODES 1, 2, and 3, and MODE 4 when the steam generator is relied upon for heat removal. To support this change in the Applicability, the following additional requirements are added to the CTS:

- A Note is added to the LCO that requires only one AFW train, which includes a motor driven pump, to be OPERABLE in MODE 4;

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DISCUSSION OF CHANGES
ITS 3.7.5, AUXILIARY FEEDWATER (AFW) SYSTEM

- A new ACTION E is added which requires immediate action to restore a required inoperable AFW train to OPERABLE status when the steam generator (SG) is relied upon for heat removal in MODE 4; and

- CTS 4.7.1.2.a, b, c, and d, which are applicable in MODES 1, 2, and 3, are now applicable in MODE 4 when the SG is relied upon for heat removal (ITS SR 3.7.5.1 and SR 3.7.5.2) for the required AFW train.

These changes are acceptable because they ensure the necessary support systems are available when a steam generator is being relied upon for heat removal in MODE 4. The CTS does not have specific requirements for an AFW train to be OPERABLE in MODE 4 when a steam generator is relied upon for heat removal. One AFW train, supplied by a motor driven pump, will provide sufficient water to the SG to remove decay heat in MODE 4. If the required AFW train is inoperable, ITS 3.7.5 ACTION E requires the initiation of action to restore the AFW train to OPERABLE status immediately. ITS SR 3.7.5.1 and SR 3.7.5.2 ensure the required AFW train is OPERABLE. This is acceptable because without the SG it may not be possible to cool down the unit and exit the MODE of Applicability. These changes are designated as more restrictive because they place additional requirements on unit operations in MODE 4 that are not required by the CTS.

M.2 CTS 4.7.1.2.d requires that each automatic valve of the AFW System in the flow path is in the correct position whenever the system is placed in automatic control or when above 10% RTP. This requirement is not applicable for those portions of the AFW System being used intermittently to maintain steam generator water level. ITS SR 3.7.5.1 also requires the automatic AFW valve position to be verified to be in the correct position. However, a Note has been added which allows the AFW train(s) to be considered OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually realigned to the AFW mode of operation. This changes the CTS by requiring the AFW automatic valves to be in the correct position whenever the system is not being used for steam generator level control and by specifying the additional requirement that the AFW train(s) must be capable of being manually realigned to the AFW mode of operation.

The purpose of CTS 4.7.1.2.d is to ensure the AFW System is available for automatic operation. This change is acceptable because it provides additional assurance that the AFW System automatic valves are in the correct position unless the train(s) are being used for steam generator level control and capable of being manually realigned to the AFW mode of operation. This helps to ensure the AFW System is available for automatic actuation unless the train(s) are being used to manually control steam generator water level. This change is designated as more restrictive because it requires the AFW automatic valves to be in the correct position whenever the system is not being used for steam generator level control and it specifies the additional requirement that the AFW train(s) must be capable of being manually realigned to the AFW mode of operation during alignment and operation for steam generator level control.

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DISCUSSION OF CHANGES
ITS 3.7.5, AUXILIARY FEEDWATER (AFW) SYSTEM

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.7.1.2.a requires three "independent" steam generator AFW "pumps and associated flow paths" to be OPERABLE. This includes two motor driven AFW pumps powered from separate emergency buses, and the steam turbine driven AFW pump capable of being powered from an OPERABLE steam supply system. ITS LCO 3.7.5 states "Three AFW trains shall be OPERABLE." The ITS does not include design details or define the components and associated flow paths that comprise an OPERABLE AFW train. CTS 3.7.1.2.a Actions a, b, and c cover the inoperabilities associated with the auxiliary feedwater pump(s). ITS 3.7.5 ACTIONS B, C, and D cover the inoperabilities of the train(s) which includes both the pump and the associated flow path. This changes the CTS by moving the description of the AFW System to the Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included to provide adequate protection of public health and safety. The ITS retains all necessary requirements in the LCO to ensure OPERABILITY for the AFW trains. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.2 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.7.1.2.e and CTS 4.7.1.2.f require the AFW automatic valves and pumps, respectively, to be actuated by an engineered safety feature actuation test signal required by Specification 3/4.3.2. ITS SR 3.7.5.3 and SR 3.5.7.4 require the same tests to be actuated by an actual or simulated actuation signal. This changes the CTS by moving the detail of which signals actuate the pumps and valves to the Bases.

The removal of these details for performing Surveillance Requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirements to actuate the AFW pumps and valve using an actual or simulated actuation signal. Also, this change is acceptable because these types of procedural details will be adequately controlled in ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L.1 *(Category 1 – Relaxation of LCO Requirements)* CTS 3.7.1.2.b for Unit 1 states that at least one AFW flow path in support of Unit 2 shutdown functions shall be available and CTS 3.7.1.2.b for Unit 2 states that at least one AFW flow path in support of Unit 1 shutdown functions shall be available. ITS 3.7.5 does not include these requirements. This changes the CTS by deleting these requirements from the CTS.

The purpose of CTS 3.7.1.2.b is to satisfy the opposite unit's safe shutdown requirements of 10 CFR 50 Appendix R. This change is acceptable because the LCO requirements continue to ensure that the structures, systems, and components are maintained consistent with the safety analyses and licensing basis. This change deletes the safe shutdown requirements of 10 CFR 50 Appendix R from the CTS. The opposite unit AFW requirements are not needed to satisfy the requirements of the unit safety analyses. CNP is still committed to the safe shutdown requirements of 10 CFR 50 Appendix R. In addition to this change the Applicability and Action associated with CTS 3.7.1.2.b have been deleted, as well as CTS 4.7.1.2.g, which tests the capability of the unit cross tie valve to cycle. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

L.2 *(Category 4 – Relaxation of Required Action)* CTS 3.7.1.2.a Action a requires the inoperable AFW pumps to be restored to an OPERABLE status within 72 hours for any condition of inoperability. ITS 3.7.5 ACTION A permits 7 days to restore the steam supply valve to an OPERABLE status when the turbine driven AFW pump is inoperable due to an inoperable steam supply valve or if the turbine driven AFW pump is inoperable in MODE 3 following refueling. In addition, due to the addition of this new ACTION, a second Completion Time has been added (ITS 3.7.5 Required Action A.1, second Completion Time) that requires restoration of the affected equipment within 10 days from discovery of failure to meet the LCO. This second Completion Time has also been added to CTS 3.7.1.2.a Action a for when an AFW train is inoperable for reasons other than those described above (ITS 3.7.5 Required Action B.1, second Completion Time). This changes the CTS by extending the ACTION time from 72 hours to 7 days for the turbine driven AFW pump in these conditions and by adding the second Completion Time of 10 days from discovery of failure to meet the LCO.

The purpose of CTS 3.7.1.2.a Action a is to provide a limit on the length of time the unit may remain in the MODES of Applicability with one AFW train inoperable. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and

DISCUSSION OF CHANGES
ITS 3.7.5, AUXILIARY FEEDWATER (AFW) SYSTEM

capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the repair period. One steam supply for the turbine driven AFW pump remains OPERABLE, which will provide the required steam flow for the pump to produce the design flow rate and therefore, the capability to mitigate analyzed accidents is preserved (i.e., the pump remains capable of performing its safety function). An inoperable turbine driven AFW pump in MODE 3 following a refueling is acceptable because the remaining motor driven AFW trains remain capable of supplying additional redundant trains of AFW and the decay heat in the Reactor Coolant System is low. The probability of an event occurring during the extended outage time that would require the inoperable steam supply or turbine driven AFW pump to function is low. The ACTION provides adequate assurance that the AFW System will continue to meet the assumptions stated in the safety analyses for the AFW system to mitigate postulated accidents. The 10 day Completion Time provides a finite time allowed in this specified Condition after discovery of failure to meet the LCO. This limit is considered reasonable for situations in which Conditions A and B are entered concurrently. The AND connector between 72 hours and 10 days dictates that both Completion Times apply simultaneously, and the more restrictive must be met. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.3 *(Category 3 – Relaxation of Completion Time)* CTS 3.7.1.2.a Action a and Action b require that with an inoperable AFW pump not restored to OPERABLE status within the allowed time, or with two AFW pumps inoperable, the unit is to be in HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours. Under similar conditions, ITS ACTION C requires the unit to be in MODE 3 in 6 hours and MODE 4 in 18 hours. This changes the CTS by allowing 18 hours instead of 12 hours to be in MODE 4.

This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the allowed Completion Time. The allowance to place the plant in MODE 4 in 18 hours allows the unit to reach the required conditions from full power conditions in an orderly manner and without challenging plant systems. The time frame of 18 hours to require the plant to move from 100% power to MODE 4 is consistent with other CTS and ITS requirements when the heat removal capability of unit is degraded. This change is designated as less restrictive because additional time is allowed to restore parameters to within the LCO limits than was allowed in the CTS.

L.4 *(Category 4 – Relaxation of Required Action)* CTS 3.7.1.2.a Action c states that with three AFW pumps inoperable, immediately initiate corrective action to restore at least one AFW pump to OPERABLE status as soon as possible. This Action does not require the unit to be shut down. However, it does not provide an exception to CTS 3.0.3 for other Specifications. ITS 3.7.5 ACTION D requires that with three inoperable AFW trains in MODES 1, 2, or 3, immediately initiate action to restore one AFW train to OPERABLE status. A Note to ITS 3.7.5 Required Action D.1 has been added that states that LCO 3.0.3 and all other

DISCUSSION OF CHANGES
ITS 3.7.5, AUXILIARY FEEDWATER (AFW) SYSTEM

LCO Required Actions requiring MODE changes are suspended until one AFW train is OPERABLE. This changes the CTS requirements to not require a unit shutdown, regardless of other inoperabilities, when all AFW trains are inoperable.

The purpose of CTS 3.7.1.2.a Action c is to provide appropriate actions for a condition with no OPERABLE AFW trains. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the repair period. The design of the AFW system is to mitigate analyzed accidents. In addition, the AFW trains are necessary to maintain steam generator level control when normal feedwater is not available. The added Note is appropriate because it may not be safe to enter the lower MODES without an OPERABLE AFW train. Allowing the restoration of one of the AFW trains enhances the ability of the safety system to mitigate accidents that could be initiated by a transient. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.5 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* CTS 4.7.1.2.b provides for the surveillance testing of the turbine driven AFW pump. The requirement provides an exception to CTS 4.0.4 for the testing of the AFW turbine driven pump. CTS 4.7.1.2.f requires verification that each AFW pump will start automatically upon receipt of an appropriate signal. A Note is included in ITS SR 3.7.5.2 and SR 3.7.5.4 that allows a delay in the performance of required testing for the turbine driven AFW pump until the required steam pressure of 850 psig is reached. This changes the CTS by providing an allowance for delaying the performance of required testing without requiring the turbine driven AFW pump to be declared inoperable.

The purpose of CTS 4.7.1.2.b and CTS 4.7.1.2.f is to ensure the turbine driven AFW pump is OPERABLE in MODES 1, 2, and 3. The allowance provides for entry into MODE 3 before requiring the testing of the pump. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. This change is necessary because the main steam pressure may be insufficient in MODE 4 to accurately test the pump, and only a short time is allowed without verification of the required testing. The majority of SRs demonstrate equipment is, in fact, OPERABLE when the tests are performed. Inconsistent testing results may result if testing of the turbine driven pump is required before establishing a sufficient steam pressure. The allowance will permit the establishment of stable unit conditions and sufficient steam pressure to test the pump and will allow an accurate and consistent method for the testing. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

DISCUSSION OF CHANGES
ITS 3.7.5, AUXILIARY FEEDWATER (AFW) SYSTEM

L.6 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* CTS 4.7.1.2.e requires the verification that each AFW automatic valve in the flow path actuates to its correct position. ITS SR 3.7.5.3 requires verifying that each AFW automatic valve "not locked, sealed, or otherwise secured in position," actuates to the correct position. This changes the CTS by only requiring the testing of AFW valves that are not locked, sealed or otherwise secured in position.

The purpose of CTS 4.7.1.2.e is to verify that the automatic valves in the AFW System flow paths align to the correct position. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. The testing of automatic valves that are aligned and secured into the required safety position is unnecessary. Valves secured in the safety position will satisfy the safety analyses assumptions for the mitigation of analyzed accidents. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.7 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.7.1.2.e requires the verification that each automatic valve of the AFW System in the flow path actuates to its correct position. CTS 4.7.1.2.f requires the verification that each AFW pump starts as designed automatically. ITS SR 3.7.5 3 and ITS SR 3.7.5.4 require the same verifications for the AFW valves and pumps, respectively. However, a Note has been added to the Surveillances that allows the AFW train(s) to be considered OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually realigned to the AFW mode of operation. This changes the CTS by allowing these automatic features to not be OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually realigned to the AFW mode of operation.

The purpose of CTS 4.7.1.2.e and 4.7.1.2.f is to ensure the AFW System valves and pumps, respectively, can operate automatically to perform their safety function. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. This change allows these automatic features to not be OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually realigned to the AFW mode of operation. This exception allows the system to be out of its normal standby alignment and temporarily incapable of automatic initiation without declaring the train(s) inoperable. Since AFW may be used during startup, shutdown, and hot standby operations for steam generator level control, and these manual operations are an accepted function of the AFW System, OPERABILITY (i.e., the intended safety function) continues to be maintained. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.8 *(Category 10 – 18 to 24 Month Surveillance Frequency Change, Non-Channel Calibration Type)* CTS 4.7.1.2.e requires the verification that each automatic valve of the AFW System in the flow path actuates to its correct position. CTS 4.7.1.2.f requires the verification that each AFW pump starts as designed automatically. The Frequency of performance of these Surveillances is every 18 months. ITS SR 3.7.5 3 and ITS SR 3.7.5.4 requires the same verifications at a 24 month Frequency. This changes the CTS by extending the Frequency of the Surveillance from 18 months (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2) to 24 months (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2).

The purpose of CTS 4.7.1.2.e and 4.7.1.2.f is to ensure the AFW System valves and pumps, respectively, can operate automatically to perform their safety function. This change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical surveillance data and maintenance data sufficient to determine failure modes have shown that these tests normally pass their Surveillances at the current Frequency. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. Extending the Surveillance test interval for the AFW automatic actuation tests is acceptable because the pumps and valves are tested during the cycle in accordance with the Inservice Test Program. These tests require each valve to be cycled and verifies the pumps start. This testing ensures that a significant portion of the AFW automatic actuation circuitry is operating properly and will detect significant failures of this circuitry. Additional justification for extending the Surveillance test interval is that the AFW, including the actuating logic, is designed to be single failure proof, therefore ensuring system availability in the event of a failure of one AFW train. Based on the inherent system and component reliability and the testing performed during the operating cycle, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 24 month Surveillance Frequency, if performed at the maximum interval allowed by ITS SR 3.0.2 (30 months) does not invalidate any assumptions in the plant licensing basis. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.9 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.7.1.2.e and 4.7.1.2.f require verification of the automatic actuation of auxiliary feedwater components on a "test" signal. ITS SR 3.7.5.3 and SR 3.7.5.4 specify that the signal may be from either an "actual" or simulated (i.e., test) signal. This changes the CTS by explicitly allowing the use of either an actual or simulated signal for the test.

The purpose of CTS 4.7.1.2.e and 4.7.1.2.f is to ensure that the auxiliary feedwater components operate correctly upon receipt of an actuation signal. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. Equipment cannot discriminate between an "actual," "simulated," or "test" signal

DISCUSSION OF CHANGES
ITS 3.7.5, AUXILIARY FEEDWATER (AFW) SYSTEM

and, therefore, the results of the testing are unaffected by the type of signal used to initiate the test. This change allows taking credit for unplanned actuation if sufficient information is collected to satisfy the Surveillance test requirements. The change also allows a simulated signal to be used, if necessary. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

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Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

CTS

3.7 PLANT SYSTEMS

3.7.5 Auxiliary Feedwater (AFW) System

LLO 3.7.1.2

LCO 3.7.5 Three AFW trains shall be OPERABLE. (1)

DOC M.1

- NOTE -
Only one AFW train, which includes a motor driven pump, is required to be OPERABLE in MODE 4. (1)

DOC M.1

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is relied upon for heat removal.

Actions d

ACTIONS

-NOTE-
LCO 3.0.4.b is not applicable when entering MODE 1.

(7) TSTF-359

DOC L.1

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One steam supply to turbine driven AFW pump inoperable. OR - NOTE - Only applicable if MODE 2 has not been entered following refueling. One turbine driven AFW pump inoperable in MODE 3 following refueling.	A.1 Restore affected equipment to OPERABLE status.	7 days AND 10 days from discovery of failure to meet the LCO (1) (3)
B. One AFW train inoperable in MODE 1, 2, or 3 for reasons other than Condition A.	B.1 Restore AFW train to OPERABLE status.	72 hours (1) (4) AND 10 days from discovery of failure to meet the LCO (1)

Action a

CTS

ACTIONS (continued)

	CONDITION	REQUIRED ACTION		COMPLETION TIME	
Action a Action b	C. Required Action and associated Completion Time for Condition A [or B] not met. [OR Two AFW trains inoperable in MODE 1, 2, or 3.]	C.1 AND C.2	Be in MODE 3. [Be in MODE 4.	6 hours [18] hours]	1
Action c	D. [Three] AFW trains inoperable in MODE 1, 2, or 3.	D.1	- NOTE - LCO 3.0.3 and all other LCO Required Actions requiring MODE changes are suspended until one AFW train is restored to OPERABLE status. Initiate action to restore one AFW train to OPERABLE status.	Immediately]	1
DOC M.1	E. Required AFW train inoperable in MODE 4.	E.1	Initiate action to restore AFW train to OPERABLE status.	Immediately	

AFW System
3.7.5

CTS

SURVEILLANCE REQUIREMENTS

CTS		SURVEILLANCE	FREQUENCY	
4.7.1.2.c3 - 4.7.1.2.d	SR 3.7.5.1	- NOTE - [AFW train(s) may be considered OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually realigned to the AFW mode of operation.]		1
		Verify each required AFW manual, power operated, and automatic valve in each water flow path, [and in both steam supply flow paths to the steam turbine driven pump,] that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days	1 5
4.7.1.2.a, 4.7.1.2.b	SR 3.7.5.2	- NOTE - [Not required to be performed for the turbine driven AFW pump until [24 hours] after ≥ [1000] 850 psig in the steam generator.]		1
		Verify the developed head of each required AFW pump at the flow test point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program	5
4.7.1.2.e	SR 3.7.5.3	- NOTES - 3 1. [AFW train(s) may be considered OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually realigned to the AFW mode of operation.] 2. Only required to be met in MODES 1, 2, and 3.		1
		Verify each AFW automatic valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[18] 24 months	1
				6

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CTS

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.5.4	- NOTES - 1. [Not required to be performed for the turbine driven AFW pump until [24 hours] after ≥ [1000] psig in the steam generator.] 850 2. [AFW train(s) may be considered OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually realigned to the AFW mode of operation.] 3. Only required to be met in MODES 1, 2, and 3. Verify each AFW pump starts automatically on an actual or simulated actuation signal.	[18] 24 months
SR 3.7.5.5	[Verify proper alignment of the required AFW flow paths by verifying flow from the condensate storage tank to each steam generator.	Prior to entering MODE 2 whenever unit has been in MODE 5, MODE 6, or defueled for a cumulative period of > 30 days]

4.7.1.2.f

(1) (1) (6) (1) (2)

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JUSTIFICATION FOR DEVIATIONS
ITS 3.7.5, AUXILIARY FEEDWATER (AFW) SYSTEM

1. The brackets have been removed and the proper plant specific information or value has been provided.

2. ISTS SR 3.7.5.5 has been deleted since the AFW supply is used during normal startup and shutdown.

3. Change made to be consistent with the CNP design.

4. Grammatical error corrected.

5. The term "required" has been added to the Surveillance since not all AFW trains are required in MODE 4.

6. ISTS LCO 3.7.5 Note states that only one AFW train is required to be OPERABLE in MODE 4. In addition, the Applicability states that the MODE 4 requirement is applicable only when the steam generator (SG) is relied upon for heat removal. The ISTS 3.7.5 Bases state that the purpose of the AFW train is only to remove decay heat from the SG in MODE 4. Thus, automatic operation of the AFW train is not required when in MODE 4. Therefore, a Note has been added to ISTS SR 3.7.5.3 and SR 3.7.5.4 (Note 2 to ITS SR 3.7.5.3 and Note 3 to ITS SR 3.7.5.4) stating that the SRs are only required to be met in MODES 1, 2, and 3 (i.e., they are not required in MODE 4). This is also consistent with the current licensing basis.

7. The bracketed allowance is not applicable since CNP depends on the AFW System during startup. Thus the bracketed allowance has been deleted.

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Improved Standard Technical Specifications (ISTS) Bases Markup and Justification for Deviations (JFDs)

B 3.7 PLANT SYSTEMS

B 3.7.5 Auxiliary Feedwater (AFW) System

BASES

BACKGROUND

INSERT 1 normally main when ① ② INSERT 2 ① INSERT 3 ②

The AFW System automatically supplies feedwater to the steam generators to remove decay heat from the Reactor Coolant System (RCS) upon the loss of normal feedwater supply. The AFW pumps take suction through separate and independent suction lines from the condensate storage tank (CST) (LCO 3.7.6) and pump to the steam generator secondary side via separate and independent connections to the main feedwater (MFW) piping outside containment. The steam generators function as a heat sink for core decay heat. The heat load is dissipated by releasing steam to the atmosphere from the steam generators via the main steam safety valves (MSSVs) (LCO 3.7.1) or atmospheric dump valves (LCO 3.7.4). If the main condenser is available, steam may be released via the steam bypass valves and recirculated to the CST.

INSERT 4 ② INSERT 5 ① ② INSERT 6 dump ①

The AFW System consists of two motor driven AFW pumps and one steam turbine driven pump configured into three trains. Each motor driven pump provides 100% of AFW flow capacity, and the turbine driven pump provides 200% of the required capacity to the steam generators, as assumed in the accident analysis. The pumps are equipped with independent recirculation lines to prevent pump operation against a closed system. Each motor driven AFW pump is powered from an independent Class 1E power supply and feeds two steam generators, although each pump has the capability to be realigned from the control room to feed other steam generators. The steam turbine driven AFW pump receives steam from two main steam lines upstream of the main steam isolation valves. Each of the steam feed lines will supply 100% of the requirements of the turbine driven AFW pump.

③ INSERT 7 ③ ③ ① ① ③ ① ① INSERT 8 ① ③ ① INSERT 8A ①

The AFW System is capable of supplying feedwater to the steam generators during normal unit startup, shutdown, and hot standby conditions.

The turbine driven AFW pump supplies a common header capable of feeding all steam generators with DC powered control valves actuated to the appropriate steam generator by the Engineered Safety Feature Actuation System (ESFAS). One pump at full flow is sufficient to remove decay heat and cool the unit to residual heat removal (RHR) entry conditions. Thus, the requirement for diversity in motive power sources for the AFW System is met.

① ② The turbine driven AFW ①

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1 **INSERT 1**

is not available

1 **INSERT 2**

a common suction header from

2 **INSERT 3**

, "Condensate Storage Tank (CST)"

2 **INSERT 4**

, "Main Steam Safety Valves (MSSVs)"

1 **INSERT 5**

steam generator power operated relief

2 **INSERT 6**

, "Steam Generator (SG) Power Operated Relief Valves (PORVs)"

1 **INSERT 7**

is capable of providing 450 gpm at a pressure of 1065 psig (plus 3%) at the entrance of the steam generators

1 **INSERT 8**

is capable of providing 900 gpm at a pressure of 1065 psig (plus 3%) at the entrance of

1 **INSERT 8A**

steam generator stop valves (SGSVs)

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BASES

BACKGROUND (continued)

INSERT 9

~~The AFW System is designed to supply sufficient water to the steam generator(s) to remove decay heat with steam generator pressure at the setpoint of the MSSVs.~~ Subsequently, the AFW System supplies sufficient water to cool the unit to RHR entry conditions, with steam released through the ~~ADVs~~ SG PORVs. (1)

INSERT 10

~~The AFW System actuates automatically on steam generator water level - low-low by the ESFAS (LCO 3.3.2). The system also actuates on loss of offsite power, safety injection, and trip of all MFW pumps.~~ (1)

The AFW System is discussed in the U FSAR, Section ~~10.4.9~~ 10.5.2 (Ref. 1). (1)(3)

APPLICABLE SAFETY ANALYSES

The AFW System mitigates the consequences of any event ~~with loss of normal feedwater~~ INSERT 11 (1)

The design basis of the AFW System is to supply water to the steam generator to remove decay heat and other residual heat by delivering at least the minimum required flow rate to the steam generators at pressures corresponding to the lowest ~~steam generator~~ main steam safety valve set pressure plus 3%.

In addition, the AFW System must supply enough makeup water to replace steam generator secondary inventory lost as the unit cools to MODE 4 conditions. Sufficient AFW flow must also be available to INSERT 11A account for flow ~~losses~~ diversions such as pump recirculation and line breaks. (1) (1)

The limiting ~~Design Basis Accidents (DBAs)~~ and transients for the AFW System are as follows: (1)

~~a. Feedwater Line Break (FWLB) and~~

~~b. Loss of MFW.~~

INSERT 12 (1)

In addition, the minimum available AFW flow and system characteristics are ~~serious~~ considerations in the analysis of a small break loss of coolant accident (LOCA). (1)

Unit 2 only (Unit 1 - delete entire paragraph)

The AFW System design is such that it can perform its function following a ~~FWLB~~ feedwater line break ~~between the MFW isolation valves and containment, combined with a loss of offsite power following turbine trip, and a single active failure of the steam turbine driven AFW pump. In such a case, the ESFAS logic may not detect the affected steam generator if the backflow check valve to the affected MFW header worked properly. One motor~~ INSERT 13 (2) (1)

1 **INSERT 9**

The motor driven AFW pumps are sized to deliver enough water to maintain a minimum area of heat transfer in the steam generators in order to prevent loss of primary water through the pressurizer safety or power operated relief valves. The higher capacity turbine driven AFW pump will maintain a tube sheet coverage of 10 feet.

1 **INSERT 10**

The turbine driven AFW pump starts automatically on any one of the following signals:

a. Steam Generator Water Level – Low Low (Table 3.3.2-1 Function 6.c);

b. Undervoltage Reactor Coolant Pump (Table 3.3.2-1 Function 6.f); and

c. Anticipated Transient Without Scram Mitigation System Actuation Circuitry (AMSAC): less than 25% feedwater flow to 3 out of 4 loops and above 40% power (a non-Technical Specification signal).

The motor driven AFW pumps start automatically on any one of the following signals:

a. Steam Generator Water Level – Low Low (Table 3.3.2-1 Function 6.c);

b. Safety Injection Input from ESFAS (Table 3.3.2-1 Function 6.d);

c. Trip of all Main Feedwater Pumps (Table 3.3.2-1 Function 6.g);

d. Loss of Voltage (Table 3.3.2-1 Function 6.e); and

e. AMSAC: less than 25% feedwater flow to 3 out of 4 loops and above 40% power (a non-Technical Specification signal).

1 **INSERT 11**

when the MFW System is not available

1 **INSERT 11A**

meet the requirements of the Design Basis Accidents (DBAs) and transients, and

1 **INSERT 12**

a. Loss of external electric load or turbine trip;

b. Loss of normal feedwater;

c. Excessive heat removal due to Feedwater System malfunctions;

d. Steam generator tube rupture; and { Unit 1 only }

e. Rupture of a steam line . ; and { Unit 2 only }

f. Major rupture of main feedwater pipe.

1 **INSERT 13**
(Unit 2 only)

upstream and downstream of the main feedwater check valve. If the break is postulated in a feedwater line between the main feedwater check valve and the steam generator, fluid from the steam generator may also be discharged through the break. Furthermore, a break in this location could preclude the subsequent addition of auxiliary feedwater to the affected steam generator. A break upstream of the feedwater line check valve would affect the nuclear steam supply system only as a loss of normal feedwater. Depending upon the size of the break and the unit operating conditions at the time of the break, the break could cause either a RCS cooldown or a RCS heatup. Potential RCS cooldown resulting from a secondary pipe rupture is evaluated in the steamline break event. Therefore, only the RCS heatup effects are evaluated for a FWLB. Analyses have been performed at full power with and without loss of offsite power. The flow assumed is less than any combination that 2 out of 3 pumps would normally supply.

BASES

APPLICABLE SAFETY ANALYSES (continued)

driven AFW pump would deliver to the broken MFW header at the pump runout flow until the problem was detected, and flow terminated by the operator. Sufficient flow would be delivered to the intact steam generator by the redundant AFW pump. (1)

The ESFAS automatically actuates the AFW turbine driven pump and associated power operated valves and controls when required to ensure an adequate feedwater supply to the steam generators during loss of power. DC power operated valves are provided for each AFW line to control the AFW flow to each steam generator. INSERT 14 (1)

The AFW System satisfies the requirements of Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

This LCO provides assurance that the AFW System will perform its design safety function to mitigate the consequences of accidents that could result in overpressurization of the reactor coolant pressure boundary. Three independent AFW pumps in three diverse trains are required to be OPERABLE to ensure the availability of RHR capability decay heat removal for all events accompanied by a loss of offsite power and a single failure. This is accomplished by powering two of the pumps from independent emergency buses. The third AFW pump is powered by a different means, a steam driven turbine supplied with steam from a source that is not isolated by closure of the MSIVs SGSV. (3) (1) (1) (1)

The AFW System is configured into three trains. The AFW System is considered OPERABLE when the components and flow paths required to provide redundant AFW flow to the steam generators are OPERABLE. This requires that the two motor driven AFW pumps be OPERABLE in two diverse paths independent discharge, each supplying AFW to separate steam generators. The turbine driven AFW pump is required to be OPERABLE with redundant steam supplies from each of two main steam lines upstream of the MSIVs SGSV, and shall be capable of supplying AFW to any all of the steam generators. The piping, valves, instrumentation, and controls in the required flow paths also are required to be OPERABLE. INSERT 14A (3) (1) (3) (1) (2) (4)

The LCO is modified by a Note indicating that only one AFW train, which includes a motor driven pump, is required to be OPERABLE in MODE 4. This is because of the reduced heat removal requirements and short period of time in MODE 4 during which the AFW is required and the insufficient steam available in MODE 4 to power the turbine driven AFW pump.

1 **INSERT 14**

associated with the turbine driven pump

2 **INSERT 14A**

required to perform the safety related function

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BASES

APPLICABILITY

In MODES 1, 2, and 3, the AFW System is required to be OPERABLE in the event that it is called upon to function when the MFW is lost. In addition, the AFW System is required to supply enough makeup water to replace the steam generator secondary inventory, lost as the unit cools to MODE 4 conditions.

In MODE 4 the AFW System may be used for heat removal via the steam generators.

In MODE 5 or 6, the steam generators are not normally used for heat removal, and the AFW System is not required.

TSTF-359

ACTIONS

B A.1 INSERT 14A B

3

If one of the two steam supplies to the turbine driven AFW train is inoperable, or if a turbine driven pump is inoperable while in MODE 3 immediately following refueling, action must be taken to restore the inoperable equipment to an OPERABLE status within 7 days. The 7 day Completion Time is reasonable, based on the following reasons:

a. For the inoperability of a steam supply to the turbine driven AFW pump, the 7 day Completion Time is reasonable since there is a redundant steam supply line for the turbine driven pump.

b. For the inoperability of a turbine driven AFW pump while in MODE 3 immediately subsequent to a refueling, the 7 day Completion Time is reasonable due to the minimal decay heat levels in this situation.

c. For both the inoperability of a steam supply line to the turbine driven pump and an inoperable turbine driven AFW pump while in MODE 3 immediately following a refueling outage, the 7 day Completion Time is reasonable due to the availability of redundant OPERABLE motor driven AFW pumps, and due to the low probability of an event requiring the use of the turbine driven AFW pump.

The second Completion Time for Required Action A.1 establishes a limit on the maximum time allowed for any combination of Conditions to be inoperable during any continuous failure to meet this LCO.

The 10 day Completion Time provides a limitation time allowed in this specified Condition after discovery of failure to meet the LCO. This limit is considered reasonable for situations in which Conditions A and B are entered concurrently. The AND connector between 7 days and 10 days

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INSERT 14AB

-REVIEWER'S NOTE-

~~The LCO 3.0.4.b Note prohibits the application of LCO 3.0.4.b exception when entering MODE 1 if the plant does not depend on AFW for startup. If the plant does depend on AFW for startup, the Note should state, "LCO 3.0.4.b is not applicable."~~

8

A Note prohibits the application of LCO 3.0.4.b to an inoperable AFW train ~~[when entering MODE 1]~~. There is an increased risk associated with ~~[~~entering a MODE or other specified condition in the Applicability~~][entering MODE 1]~~ with an AFW train inoperable and the provisions of LCO 3.0.4.b, which allow entry into a MODE or other specified condition in the Applicability with the LCO not met after performance of a risk assessment addressing inoperable systems and components, should not be applied in this circumstance.

3

BASES

ACTIONS (continued)

dictates that both Completion Times apply simultaneously, and the more restrictive must be met.

is in ③

Condition A is modified by a Note which limits the applicability of the Condition to when the unit ~~has not entered~~ MODE 2 following a refueling. ~~Condition A allows one~~ AFW train to be inoperable for 7 days vice the 72 hour Completion Time in Condition B. This longer Completion Time is based on the reduced decay heat following refueling and prior to the reactor being critical. ④ ④⑥.

the turbine driven

B.1

With one of the required AFW trains (pump or flow path) inoperable in MODE 1, 2, or 3 for reasons other than Condition A, action must be taken to restore OPERABLE status within 72 hours. This Condition includes the loss of two steam supply lines to the turbine driven AFW pump. The 72 hour Completion Time is reasonable, based on redundant capabilities afforded by the AFW System, time needed for repairs, and the low probability of a DBA occurring during this time period. ⑤

The second Completion Time for Required Action B.1 establishes a limit on the maximum time allowed for any combination of Conditions to be inoperable during any continuous failure to meet this LCO.

The 10 day Completion Time provides a limitation time allowed in this specified Condition after discovery of failure to meet the LCO. This limit is considered reasonable for situations in which Conditions A and B are entered concurrently. The AND connector between 72 hours and 10 days dictates that both Completion Times apply simultaneously, and the more restrictive must be met.

C.1 and C.2

When Required Action A.1 or B.1 cannot be completed within the ~~required~~ Completion Time, or if two AFW trains are inoperable in MODE 1, 2, or 3, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4 within 18 hours. ③ ④ ③

associated

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 unit systems.

BASES

ACTIONS (continued)

In MODE 4 with two AFW trains inoperable, operation is allowed to continue because only one motor driven pump AFW train is required in accordance with the Note that modifies the LCO. Although not required, the unit may continue to cool down and initiate RHR.

D.1

If all [three] AFW trains are inoperable in MODE 1, 2, or 3, the unit is in a seriously degraded condition with no safety related means for conducting a cooldown, and only limited means for conducting a cooldown with nonsafety related equipment. In such a condition, the unit should not be perturbed by any action, including a power change, that might result in a trip. The seriousness of this condition requires that action be started immediately to restore one AFW train to OPERABLE status. 3

Required Action D.1 is modified by a Note indicating that all required MODE changes or power reductions are suspended until one AFW train is restored to OPERABLE status. In this case, LCO 3.0.3 is not applicable because it could force the unit into a less safe condition.

E.1

In MODE 4, either the reactor coolant pumps or the RHR loops can be used to provide forced circulation. This is addressed in LCO 3.4.6, "RCS Loops - MODE 4." With one required AFW train inoperable, action must be taken to immediately restore the inoperable train to OPERABLE status. The Immediate Completion Time is consistent with LCO 3.4.6.

SURVEILLANCE REQUIREMENTS

SR 3.7.5.1

Verifying the correct alignment for manual, power operated, and automatic valves in the required AFW System water and steam supply flow paths provides assurance that the proper flow paths will exist for AFW operation. INSERT 14AA This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since they are verified to be in the correct position prior to locking, sealing, or securing. This SR also does not apply to valves that cannot be inadvertently misaligned, such as check valves. This Surveillance does not require any testing or valve manipulation; rather, it involves verification that those valves capable of being mispositioned are in the correct position. 6 1

The SR is modified by a Note that states one or more AFW trains may be considered OPERABLE during alignment and operation for steam

1 **INSERT 14AA**

Verification of the AFW System water supply flow path includes both the suction (either a flow path from the CST or the Essential Service Water (ESW) System) and discharge flow paths.

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BASES

SURVEILLANCE REQUIREMENTS (continued)

generator level control, if it is capable of being manually (i.e., remotely or locally, as appropriate) realigned to the AFW mode of operation, provided it is not otherwise inoperable. This exception allows the system to be out of its normal standby alignment and temporarily incapable of automatic initiation without declaring the train(s) inoperable. Since AFW may be used during startup, shutdown, hot standby operations, and hot shutdown operations for steam generator level control, and these manual operations are an accepted function of the AFW System, OPERABILITY (i.e., the intended safety function) continues to be maintained. 3

The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions.

SR 3.7.5.2

required

to an unacceptable level

Centrifugal

Verifying that each AFW pump's developed head at the flow test point is greater than or equal to the required developed head ensures that AFW pump performance has not degraded during the cycle. Flow and differential head are normal tests of centrifugal pump performance required by ~~Section XI of~~ the ASME Code (Ref. 2). Because it is undesirable to introduce cold AFW into the steam generators while they are operating, this testing is performed on recirculation flow. This test confirms one point on the pump design curve and is indicative of overall performance. Such inservice tests confirm component OPERABILITY, ~~trend performance,~~ and detect incipient failures by indicating abnormal performance. Performance of inservice testing discussed in the ASME Code ~~Section XI~~ (Ref. 2) (only required at 3 month intervals) satisfies this requirement. 6 2 OM 1 7 7 5 1

OM

INSERT 14B

This SR is modified by a Note indicating that the SR should be deferred until suitable test conditions are established. This deferral is required because there is insufficient steam pressure to perform the test. 3 4

INSERT 14C

SR 3.7.5.3 3

This SR verifies that AFW can be delivered to the appropriate steam generator in the event of any accident or transient that generates an ESFAS, by demonstrating that each automatic valve in the flow path actuates to its correct position on an actual or simulated actuation signal. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The ~~18~~ 24 month Frequency is based on the need to perform this 1

4 **INSERT 14B**

for the turbine driven AFW pump

3 **INSERT 14C**

at entry into MODE 3. At 850 psig, there is sufficient pressure to perform the test.

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BASES

SURVEILLANCE REQUIREMENTS (continued)

Surveillance under the conditions that apply during a unit outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. The 18 24 month Frequency is acceptable based on operating experience and the design reliability of the equipment. ① ③

The SR is modified by a two Notes. Note that 1 states one or more AFW trains may be considered OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually (i.e., remotely or locally, as appropriate) realigned to the AFW mode of operation, provided it is not otherwise inoperable. This exception allows the system AFW train(s) to be out of its normal standby alignment and temporarily incapable of automatic initiation without declaring the train(s) inoperable. Since AFW may be used during startup, shutdown, hot standby operations, and hot shutdown operations for steam generator level control, and Condition these manual operations are an accepted function of the AFW System, OPERABILITY (i.e., the intended safety function) continues to be maintained. INSERT 15 ③ ⑥ ④ ⑦ ② ③ ⑥

~~This SR is modified by a Note that states the SR is not required in MODE 4. In MODE 4, the required AFW train is already aligned and operating.~~ ④

SR 3.7.5.4

This SR verifies that the AFW pumps will start in the event of any accident or transient that generates an ESFAS by demonstrating that each AFW pump starts automatically on an actual or simulated actuation signal in MODES 1, 2, and 3. ~~In MODE 4, the required pump is already operating and the autostart function is not required.~~ The 18 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a unit outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. ⑥ ③ ⑥

This SR is modified by a three two Notes. Note 1 indicates that the SR may be deferred until suitable test conditions are established. This deferral is required because there is insufficient steam pressure to perform the test. INSERT 15A The Note 2 states that one or more AFW trains may be considered OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually (i.e., remotely or locally, as appropriate) realigned to the AFW mode of operation, provided it is not otherwise inoperable. This exception allows the system AFW train(s) ⑤ to be out of its normal standby alignment and temporarily incapable of automatic initiation without declaring the train(s) inoperable. Since AFW may be INSERT 15B ③ ② ④ ④ ⑦ ④ ③

6 **INSERT 15**

Note 2 states that the SR is only required to be met in MODES 1, 2, and 3. It is not required to be met in MODE 4 since the AFW train is only required for the purposes of removing decay heat when the SG is relied upon for heat removal. The operation of the AFW train is by manual means and automatic startup of the AFW train is not required.

4 **INSERT 15A**

for the turbine driven AFW pump

3 **INSERT 15B**

at entry into MODE 3. At 850 psig, there is sufficient steam pressure to perform the test.

BASES

SURVEILLANCE REQUIREMENTS (continued)

used during startup, shutdown, hot standby operations, and hot shutdown operations for steam generator level control, and these manual operations are an accepted function of the AFW System. OPERABILITY (i.e., the intended safety function) continues to be maintained. INSERT 16

Condition

7 2 3 6

[SR 3.7.5.5

This SR verifies that the AFW is properly aligned by verifying the flow paths from the CST to each steam generator prior to entering MODE 2 after more than 30 days in any combination of MODE 5 or 6 or defueled. OPERABILITY of AFW flow paths must be verified before sufficient core heat is generated that would require the operation of the AFW System during a subsequent shutdown. The Frequency is reasonable, based on engineering judgement and other administrative controls that ensure that flow paths remain OPERABLE. To further ensure AFW System alignment, flow path OPERABILITY is verified following extended outages to determine no misalignment of valves has occurred. This SR ensures that the flow path from the CST to the steam generators is properly aligned.]

6

- REVIEWER'S NOTE -

This SR is not required by those units that use AFW for normal startup and shutdown.

REFERENCES

1. U FSAR, Section ~~10.4.9~~ 10.5.2. 1 3

2. ASME, ~~Boiler and Pressure Vessel Code, Section XI~~ INSERT 17 1

6 **INSERT 16**

Note 3 states that the SR is only required to be met in MODES 1, 2, and 3. It is not required to be met in MODE 4 since the AFW train is only required for the purposes of removing decay heat when the SG is relied upon for heat removal. The operation of the AFW train is by manual means and automatic startup of the AFW train is not required.

1 **INSERT 17**

Operations and Maintenance Standards and Guides (OM Codes)

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JUSTIFICATION FOR DEVIATIONS
ITS 3.7.5 BASES, AUXILIARY FEEDWATER (AFW) SYSTEM

1. Changes have been made (additions, deletions, and/or changes) to the ISTS Bases to reflect the plant-specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. An editorial change is made for clarity, for consistency with the Improved Standard Technical Specifications Writer's Guide, or for consistency with similar statements in the other ITS Bases.

3. The brackets have been removed and the proper plant specific information or value has been provided.

4. This change has been made for consistency with the Specification.

5. The Inservice Testing Program at CNP Units 1 and 2 is not required to provide information for trend performance. Therefore, these words have been deleted.

6. Changes have been made to be consistent with changes made to the Specification.

7. Typographical/grammatical error corrected.

8. The Reviewer's Note has been deleted as it is not part of the plant specific ITS.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.5, AUXILIARY FEEDWATER (AFW) SYSTEM

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 6

ITS 3.7.6, Condensate Storage Tank (CST)

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

ITS 3.7.6

A.1

ITS

PLANT SYSTEMS

CONDENSATE STORAGE TANK

LIMITING CONDITION FOR OPERATION

LCO 3.7.6
SR 3.7.6.1

3.7.1.3 The condensate storage tank (CST) shall be OPERABLE with a minimum contained volume of ~~175,000~~ 182,000 gallons of water. M.1

APPLICABILITY: MODES 1, 2 and 3. Add proposed second Applicability M.2

ACTION: A.2 L.1

With the condensate storage tank inoperable, within 4 hours either: without reliance on steam generator for heat removal

ACTION A
ACTION B

a. Restore the CST to OPERABLE status or be in HOT SHUTDOWN MODE 3 within 6 hours within the next 12 24 hours, or M.2 LA.1

ACTION A
ACTION B

b. Demonstrate the OPERABILITY of the Essential Service Water System as a backup supply ~~to the auxiliary feedwater pumps~~ and restore the condensate storage tank to OPERABLE status within 7 days or be in HOT SHUTDOWN MODE 3 within 6 hours within the next 12 24 hours. without reliance on steam generator for heat removal L.1

SURVEILLANCE REQUIREMENTS

SR 3.7.6.1

4.7.1.3.1 The condensate storage tank shall be demonstrated OPERABLE at least once per 12 hours by verifying the water level is within its limits ~~when the tank is the supply source for the auxiliary feedwater pumps~~. A.3

Required Action A.1 and second Completion Time

4.7.1.3.2 The Essential Service Water System backup water supply shall be demonstrated OPERABLE at least once per 12 hours ~~by verifying that the Essential Service Water System is in operation whenever the Essential Service Water System is the supply source for the auxiliary feedwater pumps.~~ LA.1 LA.2

ITS 3.7.6

ITS

A.1

PLANT SYSTEMS

CONDENSATE STORAGE TANK

LIMITING CONDITION FOR OPERATION

LCO 3.7.6
SR 3.7.6.1

3.7.1.3 The condensate storage tank (CST) shall be OPERABLE with a minimum contained volume of 175,000 gallons of water. 182,000 M.1

APPLICABILITY: MODES 1, 2 and 3. Add proposed second Applicability M.2

ACTION: A.2 L.1

ACTION A
ACTION B

With the condensate storage tank inoperable, within 4 hours either:

a. Restore the CST to OPERABLE status or be in HOT SHUTDOWN within the next 12 hours, or

MODE 3 within 6 hours 24

without reliance on steam generator for heat removal LA.1 M.2

ACTION A
ACTION B

b. Demonstrate the OPERABILITY of the Essential Service Water System as a backup supply to the auxiliary feedwater pumps and restore the condensate storage tank to OPERABLE status within 7 days or be in HOT SHUTDOWN within the next 12 hours.

without reliance on steam generator for heat removal

MODE 3 within 6 hours 24 L.1

SURVEILLANCE REQUIREMENTS

SR 3.7.6.1

4.7.1.3.1 The condensate storage tank shall be demonstrated OPERABLE at least once per 12 hours by verifying the contained water volume is within its limits ~~when the tank is the supply source for the auxiliary feedwater pumps~~. A.3

Required Action A.1 and second Completion Time

backup water supply LA.1

4.7.1.3.2 The Essential Service Water System shall be demonstrated OPERABLE at least once per 12 hours ~~by verifying that the Essential Service Water System is in operation whenever the Essential Service Water System is the supply source for the auxiliary feedwater pumps.~~ LA.2

DISCUSSION OF CHANGES
ITS 3.7.6, CONDENSATE STORAGE TANK (CST)

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A.2 The CTS 3.7.1.3 Actions provide two compensatory actions for when the CST is found to be inoperable. CTS 3.7.1.3 Action a allows four hours to restore the CST to OPERABLE status or be in MODE 4 within the next 12 hours. CTS 3.7.1.3 Action b alternatively allows 4 hours to demonstrate the OPERABILITY of the Essential Service Water System as a backup supply to the auxiliary feedwater pumps and restore the CST tank to OPERABLE status within 7 days or be in MODE 4 within the next 12 hours. ITS 3.7.6 Required Action A.1 requires the verification by administrative means of an OPERABLE backup water supply at a Completion Time of 4 hours and once per 12 hours thereafter and Required Action A.2 requires the CST to be restored to OPERABLE status within 7 days. This changes the CTS by deleting the alternative requirement in CTS 3.7.1.3 Action a to restore the CST to OPERABLE status within 4 hours. Other changes to the CTS 3.7.1.3 Actions are discussed in DOCs M.2, LA.1, and L.1.

This change is acceptable because the requirements have not changed. The unit always has the opportunity to restore the equipment to OPERABLE status. ITS LCO 3.0.2 states that upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met. If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required unless otherwise stated. Therefore based on ITS LCO 3.0.2 restoration is always an option. This change is considered administrative because the technical requirements have not changed.

A.3 CTS 4.7.1.3.1 states that the CST shall be demonstrated OPERABLE at least once per 12 hours by verifying the water level is within its limits when the tank is the supply source for the auxiliary feedwater pumps. ITS SR 3.7.6.1 states that the CST volume must be verified to be within the specified limit. This changes the CTS by deleting detail that the Surveillance must be performed when the CST is the supply source for the auxiliary feedwater pumps.

The purpose of CTS 4.7.1.3.1 is to ensure the CST is OPERABLE when it is the supply source for the auxiliary feedwater pumps. CTS 4.0.3 states, in part, "Surveillance requirements do not have to be performed on inoperable equipment." ITS SR 3.0.1 states "Surveillances do not have to be performed on inoperable equipment or variables outside specified limits." If the CST is not capable of supplying the auxiliary feedwater pumps, the CST is considered inoperable and the ITS 3.7.6 ACTION A must be entered. Since inoperable equipment does not have to be tested, the removal of the phrase "when the tank is the supply source for the auxiliary feedwater pumps" is acceptable. This change is designated as administrative because it does not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

M.1 CTS 3.7.1.3 requires the CST to be OPERABLE with a minimum contained volume of 175,000 gallons of water. ITS LCO 3.7.6 requires the CST to be OPERABLE and ITS SR 3.7.6.1 requires the CST volume to be verified to be ≥ 182,000 gallons. This changes the CTS by increasing the CST volume requirements.

The purpose of CTS 3.7.6, as described in the CTS Bases, is to ensure that there is sufficient water volume to meet the requirement to maintain the Reactor Coolant System in MODE 3 conditions for 9 hours with steam discharge to the atmosphere concurrent with a loss of offsite power. The current volume limit of 175,000 gallons does not satisfy this requirement, since a recent calculation has determined that there is an unusable volume of 43,665 gallons, which is more than was originally assumed. The new limit of 182,000 gallons will conservatively ensure the 9 hour requirement is met. This change is acceptable because it provides additional assurance that the CST will be capable of performing its function. This change is designated as more restrictive, because it increases the contained water volume requirements.

M.2 The CTS requirements on the CST are applicable in MODES 1, 2, and 3. ITS 3.7.6 is applicable in MODES 1, 2, and 3, and in addition, MODE 4 when a steam generator is relied upon for heat removal. Consistent with this change in Applicability, the requirement to be in MODE 4 "without reliance on steam generator for heat removal" is added as indicated in ITS 3.7.6 Required Action B.2. This changes the CTS requirements by requiring the CST to be OPERABLE in MODE 4 when a SG is relied upon for heat removal.

These changes are acceptable because the required on steam generator(s) must have a sufficient source of makeup water to be considered OPERABLE for heat removal. The change is designated as more restrictive because the CST is now required to be OPERABLE in MODE 4 when a steam generator is relied upon for heat removal.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.7.1.3 Action b requires the Essential Service Water System to be demonstrated as a backup supply to the auxiliary feedwater pumps. CTS 4.7.1.3.2 specifies that the Essential Service Water System shall

DISCUSSION OF CHANGES
ITS 3.7.6, CONDENSATE STORAGE TANK (CST)

be demonstrated OPERABLE at least once per 12 hours by verifying that the Essential Service Water System is in operation whenever the Essential Service Water System is the supply source for the auxiliary feedwater pumps. ITS 3.7.6 Required Action A.1 requires the verification of OPERABILITY of a backup water supply. This changes the CTS by moving the detail that the Essential Service Water System provides the backup supply for the auxiliary feedwater pumps from the CTS to the Bases.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement to verify by administrative means OPERABILITY of a backup water supply when the CST is found to be inoperable. Also, this change is acceptable because the removed information will be adequately controlled in ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.2 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.7.1.3.2 specifies that the Essential Service Water System shall be demonstrated OPERABLE at least once per 12 hours by verifying that the Essential Service Water System is in operation whenever the Essential Service Water System is the supply source for the auxiliary feedwater pumps. ITS 3.7.6 Required Action A.1 requires the verification of OPERABILITY of a backup water supply. This changes the CTS by moving the method used to demonstrate the Essential Service Water System is the backup supply source for the auxiliary feedwater pumps from the CTS to the Bases.

The removal of these details for performing Surveillance Requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement to verify by administrative means OPERABILITY of a backup water supply when the CST is found to be inoperable. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L.1 *(Category 3 – Relaxation of Completion Time)* With the CST inoperable, CTS 3.7.1.3 Action a requires restoration of the CST within 4 hours or be in MODE 4 within next 12 hours, while CTS 3.7.1.3 Action b requires demonstration

DISCUSSION OF CHANGES
ITS 3.7.6, CONDENSATE STORAGE TANK (CST)

of OPERABILITY of the backup supply within 4 hours and restoration of the CST to OPERABLE status within 7 days or be in MODE 4 within the next 12 hours. ITS 3.7.6 Required Action A.1 requires the verification of OPERABILITY of the backup water supply within 4 hours and Required Action A.2 requires the CST to be restored to OPERABLE status within 7 days. If any of these Required Actions are not met within the associated Completion Time, ITS 3.7.6 ACTION B requires that the unit must be in MODE 3 within 6 hours and in MODE 4, without reliance on steam generator for heat removal within 24 hours. This changes the time to be in MODE 4 without reliance on the steam generators for heat removal from 12 hours to 24 hours and adds an additional requirement to be in MODE 3 within 6 hours. The addition of the condition to be in MODE 4 "without reliance on the steam generators for heat removal" is discussed in DOC M.2.

The purpose of CTS 3.7.13 Action a is to place the unit in a condition in which it does not rely on the steam generators for heat removal when the CST is inoperable. This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the allowed Completion Time. Allowing 24 hours to be in MODE 4 without reliance on the steam generators for heat removal is consistent with other Specifications and recognizes that additional time is required from the time MODE 4 is entered until the steam generators are not relied upon for heat removal. The new requirement that the unit be in MODE 3 within 6 hours ensures a unit shutdown is commenced within a reasonable period of time upon failure to restore the CST to OPERABLE status within the allowed Completion Time. This change is designated as less restrictive because additional time is allowed to restore parameters to within the LCO limits than was allowed in the CTS.

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Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

CST
3.7.6

CTS

3.7 PLANT SYSTEMS

3.7.6 Condensate Storage Tank (CST)

LCO 3.7.1.3

LCO 3.7.6 The CST shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is relied upon for heat removal.

ACTIONS

Action b
4.7.1.3.2
Action a
Action b

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. CST inoperable.	A.1 Verify by administrative means OPERABILITY of backup water supply.	4 hours AND Once per 12 hours thereafter
	AND	
	A.2 Restore CST to OPERABLE status.	7 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	AND	
	B.2 Be in MODE 4, without reliance on steam generator for heat removal.	24 hours

SURVEILLANCE REQUIREMENTS

3.7.1.3, 4.7.1.3.1

SURVEILLANCE		FREQUENCY
SR 3.7.6.1	Verify the CST level is ≥ 170,000 gal.	12 hours

1 2

182,000
volume

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.6, CONDENSATE STORAGE TANK (CST)

1. This is an editorial change for clarity, for consistency with the Improved Standard Technical Specifications Writer's Guide, for consistency with similar statements in the other ITS Specifications.

2. The brackets are removed and the proper plant specific information/value is provided.

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Improved Standard Technical Specifications (ISTS) Bases Markup and Justification for Deviations (JFDs)

CST
B 3.7.6

B 3.7 PLANT SYSTEMS

B 3.7.6 Condensate Storage Tank (CST)

BASES

qualified ②

BACKGROUND

The CST provides a safety grade source of water to the steam generators for removing decay heat and sensible heat from the Reactor Coolant System (RCS). The CST provides a passive flow of water, by gravity, to the Auxiliary Feedwater (AFW) System (LCO 3.7.5). The steam produced is released to the atmosphere by the main steam safety valves or the atmospheric dump valves. The AFW pumps operate with a continuous recirculation to the CST. INSERT 1 ① INSERT 2 (MSSVs) INSERT 3 ① ②

INSERT 4

When the main steam isolation valves are open, the preferred means of heat removal is to discharge steam to the condenser by the nonsafety grade path of the steam bypass valves. The condensed steam is returned to the CST by the condensate transfer pump. This has the advantage of conserving condensate while minimizing releases to the environment. dump hotwell may be ② ② ② ②

Because the CST is a principal component in removing residual heat from the RCS, it is designed to withstand earthquakes and other natural phenomena, including missiles that might be generated by natural phenomena. The CST is designed to Seismic Category I to ensure availability of the feedwater supply. Feedwater is also available from alternate sources. and Auxiliary auxiliary INSERT 5 ② ②

A description of the CST is found in the FSAR, Section 9.2.6 (Ref. 1). U 10.5.2 ② ③

APPLICABLE SAFETY ANALYSES

The CST provides cooling water to remove decay heat and to cool down the unit following all events in the accident analysis as discussed in the FSAR, Chapters 6 and 15 (Refs. 2 and 3, respectively). For anticipated operational occurrences and accidents that do not affect the OPERABILITY of the steam generators, the analysis assumption is generally 30 minutes at MODE 3, steaming through the MSSVs, followed by a cooldown to residual heat removal (RHR) entry conditions at the design cooldown rate. are either ② U 14 ② ③ transients steam dump valves ② ② 2 hours or SG PORVs INSERT 5A

The limiting event for the condensate volume is the large feedwater line break coincident with a loss of offsite power. Single failures that also affect this event include the following: ②

a. Failure of the diesel generator powering the motor driven AFW pump to the unaffected steam generator (requiring additional steam to drive the remaining AFW pump turbine) and

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1 **INSERT 1**

, "Auxiliary Feedwater (AFW) System"

2 **INSERT 2**

steam generator (SG) power operated relief valves (PORVs)

2 **INSERT 3**

are equipped with recirculation lines

2 **INSERT 4**

steam generator stop

2 **INSERT 5**

such as the Essential Service Water System or the opposite unit's CST. In addition, the CST is also designed as a Seismic Category 1 structure due to its close proximity to the refueling water storage tank.

2 **INSERT 5A**

of 50°F/hr, or 9 hours at MODE 3 steaming through the MSSVs or SG PORVs with no cooldown to RHR entry conditions required for a loss of power initiated event (Ref. 3)

BASES

APPLICABLE SAFETY ANALYSES (continued)

b. Failure of the steam driven AFW pump (requiring a longer time for cooldown using only one motor driven AFW pump).

These are not usually the limiting failures in terms of consequences for these events.

A nonlimiting event considered in CST inventory determinations is a break in either the main feedwater or AFW line near where the two join. This break has the potential for dumping condensate until terminated by operator action, since the Emergency Feedwater Actuation System would not detect a difference in pressure between the steam generators for this break location. This loss of condensate inventory is partially compensated for by the retention of steam generator inventory.

(2)

The CST satisfies Criteria 2 and 3 of 10 CFR 50.36(c)(2)(ii).

LCO

INSERT 6

To satisfy accident analysis assumptions, the CST must contain sufficient cooling water to remove decay heat for ~~30 minutes~~ 2 hours ~~following a reactor trip from 102% RTP~~ in MODE 3, and then to cool down the RCS to RHR entry conditions, assuming a coincident loss of offsite power and the most adverse single failure. ~~In doing this, it must retain sufficient water to ensure adequate net positive suction head for the AFW pumps during cooldown, as well as account for any losses from the steam driven AFW pump turbine, or before isolating AFW to a broken line.~~ INSERT 7 (2)

(4)

The CST ~~level~~ volume required is equivalent to a usable volume of ≥ ~~110,000~~ 138,335 gallons, which is based on ~~holding the unit in MODE 3 for~~ (9) ~~4~~ hours ~~followed by a cooldown to RHR entry conditions at 75°F/hour~~. the more limiting of either (2)

This basis is established in Reference 4 ~~and exceeds the volume~~ INSERT 8

required by the ~~accident analysis~~. (2) other (3) to satisfy the INSERT 9

The OPERABILITY of the CST is determined by maintaining the tank ~~level~~ volume at or above the minimum required ~~level~~ volume. INSERT 7A (4)

APPLICABILITY

In MODES 1, 2, and 3, and in MODE 4, when steam generator is being relied upon for heat removal, the CST is required to be OPERABLE.

In MODE 5 or 6, the CST is not required because the AFW System is not required.

2 **INSERT 6**

remove the metal and water sensible heat in the RCS from 100.34% RTP to a nominal no-load condition in MODE 3, and to either

2 **INSERT 7**

, or to remove decay heat for 9 hours in MODE 3 assuming a loss of offsite power as the initiating event and the failure of a motor driven AFW pump as the limiting single failure.

2 **INSERT 7A**

or holding the unit in MODE 3 for 2 hours followed by a 4 hour cooldown to RHR entry conditions

2 **INSERT 8**

analysis (holding the unit in MODE 3 for 9 hours)

2 **INSERT 9**

assumptions (holding the unit in MODE 3 for 2 hours followed by a 4 hour cooldown to RHR entry conditions). The CST volume limit includes an allowance for water not usable because of tank discharge line location, other physical characteristics such as net positive suction head and vortexing, and an additional volume for conservatism. The actual CST usable volume required for holding the unit in MODE 3 for 9 hours is 132,700 gallons (Unit 1) and 138,300 gallons (Unit 2).

BASES

ACTIONS

A.1 and A.2

ESW System

INSERT 9B

auxiliary feedwater

auxiliary feed

If the CST is not OPERABLE, the OPERABILITY of the backup supply should be verified by administrative means within 4 hours and once every 12 hours thereafter. OPERABILITY of the backup feedwater supply must include verification that the flow paths from the backup water supply to the AFW pumps are OPERABLE, and that the backup supply has the required volume of water available. The CST must be restored to OPERABLE status within 7 days, because the backup supply may be performing this function in addition to its normal functions. The 4 hour Completion Time is reasonable, based on operating experience, to verify the OPERABILITY of the backup water supply. Additionally, verifying the backup water supply every 12 hours is adequate to ensure the backup water supply continues to be available. The 7 day Completion Time is reasonable, based on an OPERABLE backup water supply being available, and the low probability of an event occurring during this time period requiring the CST.

auxiliary (2)

INSERT 9A (2)

INSERT 10 (2)

(2)

(2)

B.1 and B.2

If the CST cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4, without reliance on the steam generator for heat removal, within [24] 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 unit systems.

INSERT 11 (1)

(3)

SURVEILLANCE REQUIREMENTS

SR 3.7.6.1

This SR verifies that the CST contains the required volume of cooling water. (The required CST volume may be single value or a function of RCS conditions.) The 12 hour Frequency is based on operating experience and the need for operator awareness of unit evolutions that may affect the CST inventory between checks. Also, the 12 hour Frequency is considered adequate in view of other indications in the control room, including alarms, to alert the operator to abnormal deviations in the CST level. volume

(2)

(4)

REFERENCES

1. (U)FSAR, Section [9.2.6]. 10.5.2 (2) (3)

2. FSAR, Chapter [6]. (2)

2 **INSERT 9A**

(i.e., the Essential Service Water (ESW) System)

2 **INSERT 9B**

both ESW trains are OPERABLE and in operation

2 **INSERT 10**

For the ESW System to be considered the backup supply it must also be in operation.

1 **INSERT 11**

any Required Action and associated Completion Time cannot be met

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CST
B 3.7.6

BASES

REFERENCES (continued)

2 2. 1 FSAR, Chapter 15. 14 2 3

3. UFSAR, Section 14.1.12. 2

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.6 BASES, CONDENSATE STORAGE TANK (CST)

1. This is an editorial change for clarity for consistency with the Improved Standard Technical Specifications Writer's Guide and/or for consistency with similar statements in the other ITS Bases.

2. Changes have been made (additions, deletions, and/or changes) to the ISTS Bases to reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. The brackets have been removed and the proper plant specific information or value has been provided.

4. Changes made to be consistent with changes to the Specification.

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.6, CONDENSATE STORAGE TANK (CST)

There are no specific NSHC discussions for this Specification.

ATTACHMENT 7

ITS 3.7.7, Component Cooling Water (CCW) System

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.7 PLANT SYSTEMS

3/4.7.3 COMPONENT COOLING WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.3.1 LA.1

LCO 3.7.7 a. At least two ~~independent~~ component cooling water loops shall be OPERABLE.

~~b. At least one component cooling water flowpath in support of Unit 2 shutdown functions shall be available.~~ L.1

APPLICABILITY: Specification 3.7.3.1.a - MODES 1, 2, 3 and 4.
~~Specification 3.7.3.1.b - At all times when Unit 2 is in MODES 1, 2, 3, or 4.~~ L.1

ACTION:

When Specification 3.7.3.1.a is applicable: Add proposed Required Action A.1 Note M.1

ACTION A — With only one component cooling water loop OPERABLE, restore at least two loops to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the

ACTION B — following 30 hours.

~~When Specification 3.7.3.1.b is applicable:~~

~~With no flowpath to Unit 2 available, return at least one flow path to available status within 7 days, or provide equivalent shutdown capability in Unit 2 and return at least one flow path to available status within the next 60 days, or have Unit 2 in HOT STANDBY within the next 12 hours and HOT SHUTDOWN within the following 24 hours.~~ L.1

SURVEILLANCE REQUIREMENTS

4.7.3.1 At least two component cooling water loops shall be demonstrated OPERABLE: A.2

Add proposed SR 3.7.7.1 Note

SR 3.7.7.1 a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) servicing safety related equipment that is not locked, sealed, or otherwise secured in position, is in its correct position. A.3 L.2

in the flow path

SR 3.7.7.2 b. At least once per ~~18~~ 24 months by verifying that each automatic valve ~~servicing safety related equipment~~ in the flow path that is not locked, sealed, or otherwise secured in position actuates to its correct position on a ~~Safety Injection~~ actual or test signal. LA.2 L.3 L.4 LA.3

~~c. By verifying pump performance pursuant to Specification 4.0.5.~~

~~d. At least once per 18 months by verifying that the unit cross-tie valves can cycle full travel. Following cycling, the valves will be verified to be in their closed positions.~~ L.1

Add proposed SR 3.7.7.3 M.2

ITS 3.7.7

A.1

ITS

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ITS 3.7.7

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.3 INSTRUMENTATION

3/4.7.3 COMPONENT COOLING WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.3.1

LCO 3.7.7 a. At least two ~~independent~~ component cooling water loops shall be OPERABLE. LA.1

~~b. At least one component cooling water flow path in support of Unit 1 shutdown functions shall be available.~~ L.1

APPLICABILITY: Specification 3.7.3.1.a. - MODES 1, 2, 3, 4.
~~Specification 3.7.3.1.b. - At all times when Unit 1 is in MODES 1, 2, 3, or 4.~~ L.1

ACTION:

When Specification 3.7.3.1.a is applicable: Add proposed Required Action A.1 Note M.1

ACTION A — With only one component cooling water loop OPERABLE, restore at least two loops to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the
ACTION B — following 30 hours.

~~When Specification 3.7.3.1.b is applicable:~~

~~With no flowpath to Unit 1 available, return at least one flowpath to available status within 7 days, or provide equivalent shutdown capability in Unit 1 and return at least one flow path to available status within the next 60 days, or have Unit 1 in HOT STANDBY within the next 12 hours and HOT SHUTDOWN within the following 24 hours.~~ L.1

SURVEILLANCE REQUIREMENTS

4.7.3.1 At least two component cooling water loops shall be demonstrated OPERABLE: A.2

Add proposed SR 3.7.7.1 Note

SR 3.7.7.1 a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) servicing safety related equipment that is not locked, sealed, or otherwise secured in position, is in its correct position. A.3

in the flow path

SR 3.7.7.2 b. At least once per ~~18~~ 24 months by verifying that each automatic valve ~~servicing safety related equipment~~ in the flow path that is not locked, sealed, or otherwise secured in position actuates to its correct position on a actual or ~~Safety Injection~~ test signal. L.2 LA.2 L.4

~~c. By verifying pump performance pursuant to Specification 4.0.5.~~ L.3 LA.3

~~d. At least once per 18 months, verify that the unit cross-tie valves can cycle full travel. Following cycling, the valves will be verified to be in their closed positions.~~ L.1

Add proposed SR 3.7.7.3 M.2

DISCUSSION OF CHANGES
ITS 3.7.7, COMPONENT COOLING WATER (CCW) SYSTEM

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A.2 CTS 4.7.3.1 does not contain an explicit reference to isolating CCW flow to individual components. ITS SR 3.7.7.1 contains a Note which states, "Isolation of CCW flow to individual components does not render the CCW System inoperable." This changes CTS by adding an allowance that is not explicitly stated in the CTS.

The purpose of the CCW System Technical Specification is to provide assurance that CCW is available to the appropriate plant components. This change is acceptable because by current use and application of the CTS, isolation of a component supplied with CCW does not necessarily result in the CCW System being considered inoperable, but the respective component may be declared inoperable for its system. This change clarifies this application. This change is designated as administrative because it does not result in technical changes to the CTS.

A.3 CTS 4.7.3.1.a requires verification that each CCW valve (manual, power operated, or automatic) servicing safety related equipment that is not locked, sealed, or otherwise secured in position, is in its correct position. CTS 4.7.3.1.b requires verification that each CCW automatic valve servicing safety related equipment actuates to its correct position on a Safety Injection test signal. ITS SR 3.7.7.1 requires verification that each CCW manual, power operated, and automatic valve in the flow path servicing safety related equipment that is not locked, sealed, or otherwise secured in position, is in the correct position. ITS SR 3.7.7.2 requires verification that each CCW automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal. This changes the CTS by adding the words "in the flow path" to CTS 4.7.3.1.a (ITS SR 3.7.7.1) and replacing the words "servicing safety related equipment" with "in the flow path" in CTS 4.7.3.1.b (ITS SR 3.7.7.2). Another change to CTS 4.7.3.1.a is discussed in DOC A.2. Other changes to CTS 4.7.3.1.b are discussed in DOCs LA.2, L.2, L.3, and L.4.

The purpose of CTS 4.7.3.1.a is to ensure all valves in the CCW flow path are in the correct position. The purpose of CTS 4.7.3.1.b is to provide assurance that each CCW automatic valve actuates to its correct position. The addition of the words "in the flow path" to CTS 4.7.3.1.a (ITS SR 3.7.7.1) does not change the intent of the Surveillance Requirement. Each manual, power operated, and automatic valve servicing safety related equipment that is not locked, sealed, or otherwise secured in position will continue to be verified to be in the correct position. The removal of the words "servicing safety related equipment" in

DISCUSSION OF CHANGES
ITS 3.7.7, COMPONENT COOLING WATER (CCW) SYSTEM

CTS 4.7.3.1.b (ITS SR 3.7.7.2) does not change the intent of the Surveillance Requirement. Each CCW automatic valve in the flow path that is not locked, sealed or otherwise secured in position, will still be checked to ensure it actuates to the correct position on an actual or simulated Safety Injection actuation signal. This change is designated as administrative because it does not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

M.1 The Action for CTS 3.7.3.1.a allows 72 hours to restore an inoperable CCW loop to OPERABLE status. ITS 3.7.7 ACTION A has this same requirement, however a Note has been included. The ITS 3.7.7 Required Action A.1 Note requires entry into the applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops - MODE 4," for residual heat removal loops made inoperable by CCW. This changes the CTS by explicitly specifying the applicable Conditions and Required Actions of ITS LCO 3.4.6 must be entered.

The purpose of the Action for CTS 3.7.3.1.a is to ensure the inoperable CCW loop is restored to OPERABLE status within a reasonable time. This change is acceptable because it provides additional assurance that the appropriate compensatory actions are taken for inoperable residual heat removal loops that result from a loss of a CCW train. This change is designated as more restrictive because it adds the explicit cascading requirement.

M.2 CTS 4.7.3.1 does not contain a requirement to verify each CCW System pump starts automatically on an actuation signal. ITS SR 3.7.7.3 states "Verify each CCW pump starts automatically on an actual or simulated actuation signal." This changes the CTS by adding a Surveillance Requirement to test the CCW System pumps.

This change is acceptable because in order for the CCW System to perform the safety function assumed in the accident analysis, the CCW pumps must start automatically. This Surveillance is similar to the testing requirements for other safety related pumps. This change is designated as more restrictive because it adds a new SR.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.7.3.1.a states that two "independent" CCW loops shall be OPERABLE. ITS 3.7.7 requires two CCW trains to be OPERABLE, but does not contain the detail that the trains must be independent. This changes the CTS by moving the detail that the CCW trains are independent to the Bases.

DISCUSSION OF CHANGES
ITS 3.7.7, COMPONENT COOLING WATER (CCW) SYSTEM

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement for two CCW trains to be OPERABLE. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.2 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 4.7.3.1.b requires verification that each CCW automatic valve actuates to its correct position on a "Safety Injection" signal. ITS SR 3.7.7.2 requires verification that each automatic valve actuates to its correct position on an actual or simulated actuation signal. This changes the CTS by moving the specific type of actuation signal to the Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement to verify each CCW System valve actuates to the correct position on an actuation signal. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.3 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.7.3.1.c requires each CCW pump to be tested in accordance with Specification 4.0.5. ITS 3.7.7 does not contain the specific Surveillance to test each CCW pump in accordance with the Inservice Testing Program. ITS 5.5.6, "Inservice Testing Program," provides controls for inservice testing of ASME Code Class 1, 2, and 3 components. This changes the CTS by removing a detailed listing of the components required to be tested in accordance with the Inservice Testing Program.

The removal of these details for performing Surveillance Requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains a requirement to perform the testing required by the Inservice Testing Program. Also, this change is acceptable because these types of procedural details will be adequately controlled in the Inservice Testing Program, which is controlled under 10 CFR 50.55a. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

DISCUSSION OF CHANGES
ITS 3.7.7, COMPONENT COOLING WATER (CCW) SYSTEM

LESS RESTRICTIVE CHANGES

L.1 *(Category 1 – Relaxation of LCO Requirements)* CTS 3.7.3.1.b for Unit 1 states that at least one CCW flow path in support of Unit 2 shutdown functions shall be available and CTS 3.7.3.1.b for Unit 2 states that at least one CCW flow path in support of Unit 1 shutdown functions shall be available. ITS 3.7.7 does not include these requirements. This changes the CTS by deleting these requirements from the CTS.

The purpose of CTS 3.7.3.1.b is to satisfy the safe shutdown requirements of 10 CFR 50 Appendix R. This change is acceptable because the LCO requirements continue to ensure that the structures, systems, and components are maintained consistent with the safety analyses and licensing basis. This change deletes the safe shutdown requirements of 10 CFR 50 Appendix R from the CTS. The opposite unit CCW requirements are not needed to satisfy the requirements of the unit safety analyses. CNP is still committed to the safe shutdown requirements of 10 CFR 50 Appendix R. In addition to this change, the Applicability and Action associated with CTS 3.7.3.1.b have been deleted, as well as CTS 4.7.3.1.d, which tests the capability of the unit cross tie valves to cycle. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

L.2 *(Category 10 – 18 to 24 Month Surveillance Frequency Change, Non-Channel Calibration Type)* CTS 4.7.3.1.b requires the verification that each automatic valve in the CCW System servicing safety related equipment actuates to its correct position. ITS SR 3.7.7.2 requires the same verification at a 24 month Frequency. This changes the CTS by extending the Frequency of the Surveillance from 18 months (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2) to 24 months (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2).

The purpose of CTS 4.7.3.1.b is to ensure the CCW System valves can operate automatically to perform their safety function. This change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical surveillance data and maintenance data sufficient to determine failure modes have shown that these tests normally pass their Surveillances at the current Frequency. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. Extending the Surveillance test interval for the CCW automatic actuation test is acceptable because the valves are tested during the cycle in accordance with the Inservice Test Program. These tests require each valve to be cycled. This testing ensures that a significant portion of the CCW automatic actuation circuitry is operating properly and will detect significant failures of this circuitry. Additional justification for extending the Surveillance test interval is that the CCW, including the actuating logic, is designed to be single failure proof, therefore ensuring system availability in the event of a failure of one CCW train. Based on the inherent system and component reliability and the testing performed during the operating cycle, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 24 month Surveillance Frequency, if performed at the maximum interval allowed by ITS SR 3.0.2 (30 months) does not invalidate any assumptions in the plant licensing basis. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.3 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.7.3.1.b requires verification that CCW System automatic valves actuate to their correct position. ITS SR 3.7.7.2 requires verification that CCW System automatic valves in the flow path "that are not locked, sealed, or otherwise secured in position" actuate to the correct position on an actual or simulated actuation signal. This changes the CTS by exempting valves that are locked, sealed, or otherwise secured in position from the verification.

The purpose of CTS 4.7.3.1.b is to provide assurance that if an event occurred requiring the CCW System valves to be in their correct position, then those valves requiring automatic actuation would actuate to their correct position. This change is acceptable because the deleted Surveillance Requirement is not necessary to verify that the equipment used to meet the LCO can perform its required functions. Thus, appropriate equipment continues to be tested in a manner and at a Frequency necessary to give confidence that the equipment can perform its assumed safety function. The change exempts valves that have already been placed in the correct position and are locked, sealed, or otherwise secured in position. Those automatic CCW System valves that are locked, sealed, or otherwise secured in position are not required to actuate in order to perform their safety function because they are already in the required position. This change is designated as less restrictive because Surveillances that are required in the CTS will not be required in the ITS.

L.4 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.7.3.1.b requires verification of the automatic actuation of the Component Cooling Water System valves on a "test" signal. ITS SR 3.7.7.2 specifies that the signal may be from either an "actual" or simulated (i.e., test) signal. This changes the CTS by explicitly allowing the use of either an actual or simulated signal for the test.

The purpose of CTS 4.7.3.1.b is to ensure that the Component Cooling Water System valves operate correctly upon receipt of an actuation signal. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. Equipment cannot discriminate between an "actual," "simulated," or "test" signal and, therefore, the results of the testing are unaffected by the type of signal used to initiate the test. This change allows taking credit for unplanned actuation if sufficient information is collected to satisfy the Surveillance test requirements. The change also allows a simulated signal to be used, if necessary. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

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Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

CTS

3.7 PLANT SYSTEMS

3.7.7 Component Cooling Water (CCW) System

LCO 3.7.3.1a

LCO 3.7.7 Two CCW trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
3.7.3.1a Action A. One CCW train inoperable.	A.1	- NOTE - Enter applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops - MODE 4," for residual heat removal loops made inoperable by CCW.	
		Restore CCW train to OPERABLE status.	72 hours
3.7.3.1.a Action B. Required Action and associated Completion Time of Condition A not met.	B.1	Be in MODE 3.	6 hours
	AND		
	B.2	Be in MODE 5.	36 hours

1

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CTS

SURVEILLANCE REQUIREMENTS

CTS	SURVEILLANCE		FREQUENCY	
4.7.3.1.a	SR 3.7.7.1	- NOTE - Isolation of CCW flow to individual components does not render the CCW System inoperable. Verify each CCW manual, power operated, and automatic valve in the flow path servicing safety related equipment, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days	
4.7.3.1.b	SR 3.7.7.2	Verify each CCW automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	~~18~~ 24 months	2
DOC M.2	SR 3.7.7.3	Verify each CCW pump starts automatically on an actual or simulated actuation signal.	~~18~~ 24 months	2

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.7, COMPONENT COOLING WATER (CCW) SYSTEM

1. This change is made to be consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 4.1.6.

2. The brackets have been removed and the proper plant specific information/value has been provided.

Improved Standard Technical Specifications (ISTS) Bases Markup and Justification for Deviations (JFDs)

B 3.7 PLANT SYSTEMS

B 3.7.7 Component Cooling Water (CCW) System

BASES

BACKGROUND

The CCW System provides a heat sink for the removal of process and operating heat from safety related components during a Design Basis Accident (DBA) or transient. During normal operation, the CCW System also provides this function for various nonessential components, as well as the spent fuel storage pool. The CCW System serves as a barrier to the release of radioactive byproducts between potentially radioactive systems and the Service Water System, and thus to the environment. Essential (ESW) 1

The A typical CCW System is arranged as two independent, full capacity safeguard cooling loops, and has isolatable nonsafety related components. Each safety related train includes a full capacity pump, surge tank, heat exchanger, piping, valves, and instrumentation. Each safety related train is powered from a separate bus. An open surge tank in the system provides pump trip protective functions to ensure that sufficient net positive suction head is available. The pump in each train is automatically started on receipt of a safety injection signal, and all nonessential components are isolated. 1 a common 1 1

INSERT 1

INSERT 2

INSERT 3

certain

Additional information on the design and operation of the system, along with a list of the components served, is presented in the FSAR, Section 9.2.2 (Ref. 1). The principal safety related function of the CCW System is the removal of decay heat from the reactor via the Residual Heat Removal (RHR) System. This may be during a normal or post accident cooldown and shutdown. U 1 2

9.5

APPLICABLE SAFETY ANALYSES

The design basis of the CCW System is for one CCW train to remove the post loss of coolant accident (LOCA) heat load from the containment sump during the recirculation phase, with a maximum CCW temperature of 120°F (Ref. 2). The Emergency Core Cooling System (ECCS) LOCA and containment OPERABILITY LOCA each model the maximum and minimum performance of the CCW System, respectively. The normal temperature of the CCW is 80°F, and, during unit cooldown to MODE 5 (T_{cold} ≤ 200°F), a maximum temperature of 95°F is assumed. This prevents the containment sump fluid from increasing in temperature during the recirculation phase following a LOCA, and provides a gradual reduction in the temperature of this fluid as it is supplied to the Reactor Coolant System (RCS) by the ECCS pumps. 2 2 2 1

range

between 60°F and 105°F

avg

120

1 **INSERT 1**

is equipped with a low level alarm that annunciates in the control room

1 **INSERT 2**

the heat exchanger outlet valves are opened,

1 **INSERT 3**

The pumps are also started on a low header pressure signal, but this is not required for OPERABILITY of the CCW System.

BASES

APPLICABLE SAFETY ANALYSES (continued)

The CCW System is designed to perform its function with a single failure of any active component, assuming a loss of offsite power.

The CCW System also functions to cool the unit from RHR entry conditions (T_{avg} < [350]°F), to MODE 5 (T_{avg} ≤ [200]°F), during normal and post accident operations. The time required to cool from [350]°F to [200]°F is a function of the number of CCW and RHR trains operating. One CCW train is sufficient to remove decay heat during subsequent operations with T_{avg} ≤ [200]°F. This assumes a maximum ~~service water~~ ESW pump discharge temperature of ~~[95]~~ 86°F occurring simultaneously with the maximum heat loads on the system. 1 2 2 2 1 2

The CCW System satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

The CCW trains are independent of each other to the degree that each has separate controls and power supplies and the operation of one does not depend on the other. In the event of a DBA, one CCW train is required to provide the minimum heat removal capability assumed in the safety analysis for the systems to which it supplies cooling water. To ensure this requirement is met, two trains of CCW must be OPERABLE. At least one CCW train will operate assuming the worst case single active failure occurs coincident with a loss of offsite power.

A CCW train is considered OPERABLE when:

a. The pump and ~~associated~~ surge tank are OPERABLE, and 1 3

b. The associated piping, valves, heat exchanger, and instrumentation and controls required to perform the safety related function are OPERABLE.

The isolation of CCW from other components or systems not required for safety may render those components or systems inoperable but does not affect the OPERABILITY of the CCW System.

APPLICABILITY

In MODES 1, 2, 3, and 4, the CCW System is a normally operating system, which must be prepared to perform its post accident safety functions, primarily RCS heat removal, which is achieved by cooling the RHR heat exchanger.

In MODE 5 or 6, the OPERABILITY requirements of the CCW System are determined by the systems it supports.

BASES

ACTIONS

A.1

Required Action A.1 is modified by a Note indicating that the applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops - MODE 4," be entered if an inoperable CCW train results in an inoperable RHR loop. This is an exception to LCO 3.0.6 and ensures the proper actions are taken for these components.

If one CCW train is inoperable, action must be taken to restore OPERABLE status within 72 hours. In this Condition, the remaining OPERABLE CCW train is adequate to perform the heat removal function. The 72 hour Completion Time is reasonable, based on the redundant capabilities afforded by the OPERABLE train, and the low probability of a DBA occurring during this period. (1)

B.1 and B.2

If the CCW train cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours and in 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 unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.7.1

This SR is modified by a Note indicating that the isolation of the CCW flow to individual components may render those components inoperable but does not affect the OPERABILITY of the CCW System.

Verifying the correct alignment for manual, power operated, and automatic valves in the CCW flow path provides assurance that the proper flow paths exist for CCW operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since these valves are verified to be in the correct position prior to locking, sealing, or securing. This SR also does not apply to valves that cannot be inadvertently misaligned, such as check valves. This Surveillance does not require any testing or valve manipulation; rather, it involves verification that those valves capable of being mispositioned are in the correct position.

BASES

SURVEILLANCE REQUIREMENTS (continued)

The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions.

SR 3.7.7.2

This SR verifies proper automatic operation of the CCW valves on an actual or simulated actuation signal. The CCW System is a normally operating system that cannot be fully actuated as part of routine testing during normal operation. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The 18 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a unit outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 24 month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint. 2 2

SR 3.7.7.3

This SR verifies proper automatic operation of the CCW pumps on an actual or simulated actuation signal. The CCW System is a normally operating system that cannot be fully actuated as part of routine testing during normal operation. The 18 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a unit outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 24 month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint. 2 2

REFERENCES

1. U FSAR, Section ~~9.2.2~~ 9.5. 1 2
2. U FSAR, ~~Section 6.2~~ Table 9.5-3. 1 2

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.7 BASES, COMPONENT COOLING WATER (CCW) SYSTEM

1. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. The brackets have been removed and the proper plant specific information/value has been provided.

3. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.7, COMPONENT COOLING WATER (CCW) SYSTEM

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 8

ITS 3.7.8, Essential Service Water (ESW) System

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.7 PLANT SYSTEMS

3/4.7.4 ESSENTIAL SERVICE WATER SYSTEM

LIMITING CONDITION FOR OPERATION

LCO 3.7.8 — 3.7.4.1 a. At least two ~~independent~~ essential service water loops shall be OPERABLE. (LA.1)

~~b. At least one essential service water flowpath associated with support of Unit 2 shutdown functions shall be available.~~ (L.1)

APPLICABILITY: Specification 3.7.4.1.a – Either Unit in MODES 1, 2, 3, and 4.
~~Specification 3.7.4.1.b - At all times when Unit 2 is in MODES 1, 2, 3 or 4.~~ (L.1)

ACTION:

a. When Unit 1 is in MODES 1, 2, 3, and 4: Add proposed Required Action A.1 Notes 1 and 2 (M.1)

ACTION A — With only one essential service water loop OPERABLE, restore at least two loops to OPERABLE status within 72 hours,

ACTION B — or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. ~~When Unit 2 is in MODES 1, 2, 3 and 4:~~

Unit 2 LCO Note and ACTION A — 1. With any Unit 1 essential service water pump not OPERABLE, ~~within one hour~~ (M.3) close at least one crosstie valve on the associated header or have Unit 2 enter ACTION a for Unit 2 Specification 3.7.4.1 for the Unit 2 essential service water pump sharing the same header with the inoperable Unit 1 essential service water pump.

~~2. With no essential service water flow path available in support of Unit 2 shutdown functions, return at least one flow path to available status within 7 days, or have Unit 2 in HOT STANDBY within the next 12 hours and HOT SHUTDOWN within the following 24 hours.~~ (L.1)

SURVEILLANCE REQUIREMENTS

4.7.4.1 At least two essential service water loops shall be demonstrated OPERABLE: (A.2)

Add proposed SR 3.7.8.1 Note

SR 3.7.8.1 — a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) in the flow path ~~servicing safety related equipment~~ (A.3) that is not locked, sealed, or otherwise secured in position, is in its correct position. (L.2)

SR 3.7.8.2 — b. At least once per ~~18~~ 24 months by verifying that each automatic valve in the flow path ~~servicing safety related equipment~~ (A.3) that are not locked, sealed, or otherwise secured in position actuates to its correct position on a actual or ~~Safety Injection~~ test signal. (LA.2) (L.4)

~~c. By verifying pump performance pursuant to Specification 4.0.5.~~ (L.3)

~~d. At least once per 92 days by verifying that each closed crosstie valve, in the available essential service water flowpath associated with support of Unit 2 shutdown functions, can be cycled from the control room.~~ (LA.3) (L.1)

Add proposed SR 3.7.8.3 (M.2)

ITS

A.1

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ITS 3.7.8

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.7 PLANT SYSTEMS

3/4.7.4 ESSENTIAL SERVICE WATER SYSTEM

LIMITING CONDITION FOR OPERATION

LCO 3.7.8 3.7.4.1 a. At least two ~~independent~~ essential service water loops shall be OPERABLE. LA.1

~~b. At least one essential service water flowpath associated with support of Unit 1 shutdown functions shall be available.~~ L.1

APPLICABILITY: Specification 3.7.4.1.a - Either Unit in MODES 1, 2, 3, and 4.
~~Specification 3.7.4.1.b - At all times when Unit 1 is in MODES 1, 2, 3, or 4.~~ L.1

ACTION:

a. When Unit 2 is in MODES 1, 2, 3, and 4: Add proposed Required Action A.1 Notes 1 and 2 M.1

ACTION A
ACTION B

With only one essential service water loop OPERABLE, restore at least two loops to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN ~~within the following~~ 30 hours.

M.3

~~b. When Unit 1 is in MODES 1, 2, 3 and 4:~~

Unit 1 LCO Note and ACTION A

1. With any Unit 2 essential service water pump not OPERABLE, ~~within one hour~~ close at least one crosstie valve on the associated header or have Unit 1 enter ACTION a for Unit 1 Specification 3.7.4.1 for the Unit 1 essential service water pump sharing the same header with the inoperable Unit 2 essential service water pump.

~~2. With no essential service water flow path available in support of Unit 1 shutdown functions, return at least one flow path to available status within 7 days, or have Unit 1 in HOT STANDBY within the next 12 hours and HOT SHUTDOWN within the following 24 hours.~~ L.1

SURVEILLANCE REQUIREMENTS

4.7.4.1 At least two essential service water loops shall be demonstrated OPERABLE: A.2

Add proposed SR 3.7.8.1 Note A.3

SR 3.7.8.1 a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) ~~servicing safety related equipment~~ that is not locked, sealed, or otherwise secured in position, is in its correct position. L.2 A.3

in the flow path

24

SR 3.7.8.2 b. At least once per ~~18~~ months by verifying that each automatic valve ~~servicing safety related equipment~~ actuates to its correct position on a ~~Safety Injection~~ test signal. LA.2 L.4

in the flow path

that are not locked, sealed, or otherwise secured in position

actual or

~~c. By verifying pump performance pursuant to Specification 4.0.5~~ L.3

~~d. At least once per 92 days by verifying that each closed crosstie valve, in the available essential service water flowpath associated with support of Unit 1 shutdown functions, can be cycled from the control room.~~ LA.3 L.1

Add proposed SR 3.7.8.3 M.2

DISCUSSION OF CHANGES
ITS 3.7.8, ESSENTIAL SERVICE WATER (ESW) SYSTEM

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A.2 CTS 4.7.4.1 does not contain an explicit reference to isolating ESW flow to individual components. ITS SR 3.7.8.1 contains a Note that states "Isolation of ESW flow to individual components does not render the ESW System inoperable." This changes CTS by adding an allowance that is not explicitly stated in the CTS.

The purpose of the ESW Technical Specification is to provide assurance that ESW is available to the appropriate plant components. This change is acceptable because by current use and application of the CTS, isolation of a component supplied with ESW does not necessarily result in the ESW System being considered inoperable, but the respective component may be declared inoperable for its system. This change clarifies this application. This change is designated as administrative because it does not result in technical changes to the CTS.

A.3 CTS 4.7.4.1.a requires verification that each ESW valve (manual, power operated or automatic) servicing safety related equipment that is not locked, sealed, or otherwise secured in position, is in the correct position. CTS 4.7.4.1.b requires verification that each ESW automatic valve servicing safety related equipment actuates to its correct position. ITS SR 3.7.8.1 requires verification that each ESW manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position. ITS SR 3.7.8.2 requires verification that each ESW automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position. This changes the CTS by replacing the words "servicing safety related equipment" with "in the flow path." Other changes to CTS 4.7.4.1.a are discussed in DOC A.2 while other changes to CTS 4.7.4.1.b are discussed in DOCs LA.2, L.2, L.3, and L.4.

The purpose of CTS 4.7.4.1.a is to ensure ESW valves are in the correct position while the purpose of CTS 4.7.4.1.b is to ensure each ESW automatic valve can actuate to the accident position. The ESW System supplies cooling water to safety related loads. This change is acceptable because the clarification that the valves requiring verification are only those that service safety related equipment is not necessary since ESW System only supplies safety related loads. This change is designated as administrative because it does not result in technical changes to the CTS.

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DISCUSSION OF CHANGES
ITS 3.7.8, ESSENTIAL SERVICE WATER (ESW) SYSTEM

MORE RESTRICTIVE CHANGES

M.1 The Action for CTS 3.7.4.1.a allows 72 hours to restore an inoperable ESW loop to OPERABLE status. ITS 3.7.8 ACTION A has this same requirement, however two additional Notes have been included. ITS 3.7.8 Required Action A.1 Note 1 requires entry into the applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources - Operating," for any emergency diesel generator made inoperable by ESW, while ITS 3.7.8 Required Action A.1 Note 2 requires entry into the applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops – MODE 4," for residual heat removal loops made inoperable by ESW. This changes the CTS by explicitly specifying the applicable Conditions and Required Actions of ITS LCO 3.8.1 and LCO 3.4.6 must be entered.

The purpose of the Action for CTS 3.7.4.1.a is to ensure the inoperable ESW train is restored to OPERABLE status within a reasonable time. This change is acceptable because it provides additional assurance that the appropriate compensatory actions are taken for inoperable emergency diesel generators and residual heat removal loops that result from a loss of an ESW train. This change is designated as more restrictive, because it adds the explicit cascading requirement.

M.2 CTS 4.7.4.1 does not contain a requirement to verify each ESW System pump starts automatically on an actuation signal. ITS SR 3.7.8.3 states, "Verify each ESW pump starts automatically on an actual or simulated actuation signal." This changes the CTS by adding a Surveillance Requirement to test the ESW System pumps.

This change is acceptable because in order for the ESW System to perform the safety function assumed in the accident analysis, the ESW pumps must start automatically. This Surveillance is similar to the testing requirements for other safety related pumps. This change is designated as more restrictive because it adds a new SR.

M.3 CTS 3.7.4.1 Action b states that with the opposite unit in MODE 1, 2, 3, or 4 and any unit ESW pump inoperable, at least one crosstie valve on the associated header must be closed within 1 hour or the opposite unit ESW train must be declared inoperable and the appropriate action in the opposite unit's CTS 3.7.4.1 must be taken. The ITS does not include the allowance to delay declaring inoperable the opposite unit ESW train for 1 hour. ITS 3.7.8 requires an immediate declaration of inoperability of the opposite unit ESW train and to immediately take the Actions required by ITS 3.7.8 ACTION A. This changes the CTS by deleting the 1 hour allowance to delay declaring inoperable the opposite unit ESW train.

The purpose of the 1 hour time delay in CTS 3.7.4.1 Action b is to provide a short amount of time to close the crosstie valves prior to declaring the opposite unit ESW train inoperable. However, when the crosstie valves are open and one of the ESW pumps in the associated crosstied trains is inoperable, both the Unit 1 and the Unit 2 ESW trains that are crosstied are immediately inoperable. Thus delaying this declaration for 1 hour is not appropriate. The crosstie valves can be closed during the 72 hours provided in ITS 3.7.8 ACTION A to restore the

DISCUSSION OF CHANGES
ITS 3.7.8, ESSENTIAL SERVICE WATER (ESW) SYSTEM

inoperable ESW train. This change is designated as more restrictive because it deletes an allowance to delay declaring inoperable the opposite unit ESW train for 1 hour.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.7.4.1.a states that two "independent" ESW loops shall be OPERABLE. ITS 3.7.8 requires two ESW trains to be OPERABLE, but does not contain detail that the trains must be independent. This changes the CTS by moving the detail that the ESW trains are independent to the Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement for two ESW trains to be OPERABLE. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.2 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 4.7.4.1.b requires verification that each ESW automatic valve actuates to its correct position on a "Safety Injection" signal. ITS SR 3.7.8.2 requires verification that each automatic valve actuates to its correct position on an actual or simulated actuation signal. This changes the CTS by moving the specific type of actuation signal to the Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement to verify each ESW System valve actuates to the correct position on an actuation signal. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

DISCUSSION OF CHANGES
ITS 3.7.8, ESSENTIAL SERVICE WATER (ESW) SYSTEM

LA.3 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.7.4.1.c requires each ESW pump to be tested in accordance with Specification 4.0.5. ITS 3.7.8 does not contain the specific Surveillance to test each ESW pump in accordance with the Inservice Testing Program. ITS 5.5.6, "Inservice Testing Program," provides controls for inservice testing of ASME Code Class 1, 2, and 3 components. This changes the CTS by removing a detailed listing of the components required to be tested in accordance with the Inservice Testing Program.

The removal of these details for performing Surveillance Requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains a requirement to perform the testing required by the Inservice Testing Program. Also, this change is acceptable because these types of procedural details will be adequately controlled in the Inservice Testing Program, which is controlled under 10 CFR 50.55a. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L.1 *(Category 1 – Relaxation of LCO Requirements)* CTS 3.7.4.1.b for Unit 1 states that at least one ESW flowpath associated with support of Unit 2 shutdown functions shall be available and CTS 3.7.4.1.b for Unit 2 states that at least one ESW flowpath associated with support of Unit 1 shutdown functions shall be available. ITS 3.7.8 does not include these requirements. This changes the CTS by deleting these requirements from the CTS.

The purpose of CTS 3.7.4.1.b is to satisfy the safe shutdown requirements of 10 CFR 50 Appendix R. This change is acceptable because the LCO requirements continue to ensure that the structures, systems, and components are maintained consistent with the safety analyses and licensing basis. This change deletes the safe shutdown requirements of 10 CFR 50 Appendix R from the CTS. The opposite unit ESW requirements are not needed to satisfy the requirements of the unit safety analyses. CNP is still committed to the safe shutdown requirements of 10 CFR 50 Appendix R. In addition to this change, the Applicability and Action associated with CTS 3.7.4.1.b have been deleted, as well as CTS 4.7.4.1.d, which tests the capability of the unit cross tie valves to cycle. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

L.2 *(Category 10 – 18 to 24 Month Surveillance Frequency Change, Non-Channel Calibration Type)* CTS 4.7.4.1.b requires the verification that each automatic valve in the ESW System servicing safety related equipment actuates to its correct position. ITS SR 3.7.8 2 requires the same verification at a 24 month Frequency. This changes the CTS by extending the Frequency of the Surveillance from 18 months (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2) to 24 months

DISCUSSION OF CHANGES
ITS 3.7.8, ESSENTIAL SERVICE WATER (ESW) SYSTEM

(i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2).

The purpose of CTS 4.7.4.1.b is to ensure the ESW System valves can operate automatically to perform their safety function. This change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical surveillance data and maintenance data sufficient to determine failure modes have shown that these tests normally pass their Surveillances at the current Frequency. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. Extending the Surveillance test interval for the ESW automatic actuation test is acceptable because the valves are tested during the cycle in accordance with the Inservice Test Program. These tests require each valve to be cycled. This testing ensures that a significant portion of the ESW automatic actuation circuitry is operating properly and will detect significant failures of this circuitry. Additional justification for extending the Surveillance test interval is that the ESW, including the actuating logic, is designed to be single failure proof, therefore ensuring system availability in the event of a failure of one ESW train. Based on the inherent system and component reliability and the testing performed during the operating cycle, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 24 month Surveillance Frequency, if performed at the maximum interval allowed by ITS SR 3.0.2 (30 months) does not invalidate any assumptions in the plant licensing basis. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.3 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.7.4.1.b requires verification that ESW System automatic valves actuate to their correct position. ITS SR 3.7.8.2 requires verification that ESW System automatic valves in the flow path "that are not locked, sealed, or otherwise secured in position" actuate to the correct position on an actual or simulated actuation signal. This changes the CTS by exempting valves that are locked, sealed, or otherwise secured in position from the verification.

The purpose of CTS 4.7.4.1.b is to provide assurance that if an event occurred requiring the ESW System valves to be in their correct position, then those valves requiring automatic actuation would actuate to their correct position. This change is acceptable because the deleted Surveillance Requirement is not necessary to verify that the equipment used to meet the LCO can perform its required functions. Thus, appropriate equipment continues to be tested in a manner and at a Frequency necessary to give confidence that the equipment can perform its assumed safety function. The change exempts valves that have already been placed in the correct position and are locked, sealed, or otherwise secured in position. Those automatic ESW System valves that are locked, sealed, or otherwise secured in position are not required to actuate in order to perform their safety function because they are already in the required position.

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DISCUSSION OF CHANGES
ITS 3.7.8, ESSENTIAL SERVICE WATER (ESW) SYSTEM

This change is designated as less restrictive because Surveillances that are required in the CTS will not be required in the ITS.

L.4 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.7.4.1.b requires verification of the automatic actuation of the Essential Service Water System valves on a "test" signal. ITS SR 3.7.8.2 specifies that the signal may be from either an "actual" or simulated (i.e., test) signal. This changes the CTS by explicitly allowing the use of either an actual or simulated signal for the test.

The purpose of CTS 4.7.4.1.b is to ensure that the Essential Service Water System valves operate correctly upon receipt of an actuation signal. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. Equipment cannot discriminate between an "actual," "simulated," or "test" signal and, therefore, the results of the testing are unaffected by the type of signal used to initiate the test. This change allows taking credit for unplanned actuation if sufficient information is collected to satisfy the Surveillance test requirements. The change also allows a simulated signal to be used, if necessary. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

System

E SWS 3.7.8 ①

CTS

3.7 PLANT SYSTEMS Essential

3.7.8 Service Water System (SWS) (ESW) ①

LCO 3.7.4.1 — LCO 3.7.8 Two SWS trains shall be OPERABLE. E ①

INSERT 1 ⑥

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

ACTIONS

CTS	CONDITION	REQUIRED ACTION		COMPLETION TIME
3.7.4.1.a Action a	A. One SWS train E inoperable.	A.1	- NOTES - 1. Enter applicable and Conditions Required Actions of LCO 3.8.1, "AC Sources - Operating," for emergency diesel generator made inoperable by SWS System E. 2.. Enter applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops - MODE 4," for residual heat removal loops made inoperable by SWS E System. Restore SWS E train to OPERABLE status.	72 hours
3.7.4.1.a Action a	B. Required Action and associated Completion Time of Condition A not met.	B.1	Be in MODE 3.	6 hours
		AND		
		B.2	Be in MODE 5.	36 hours

① ② ① ① ① ③

6

INSERT 1

-NOTE-

When an ESW train is crosstied with the associated Unit 2 (Unit 1) and Unit 1 (Unit 2) ESW train, OPERABILITY of the ESW train includes the associated Unit 2 (Unit 1) and Unit 1 (Unit 2) ESW pump.

CTS

E SWS System 1
3.7.8

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE System	FREQUENCY
4.7.4.1.a SR 3.7.8.1	----- NOTE ----- E 1. Isolation of SWS flow to individual components does not render the SWS inoperable. ----- Verify each SWS manual, power operated, and automatic valve in the flow path servicing safety related equipment, that is not locked, sealed, or otherwise secured in position, is in the correct position. 4	31 days 1 1
4.7.4.1.b SR 3.7.8.2 E	Verify each SWS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	~~18~~ 24 months 1 5
DOC M.2 SR 3.7.8.3 E	Verify each SWS pump starts automatically on an actual or simulated actuation signal. required	~~18~~ 24 months 1 5

6

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.8, ESSENTIAL SERVICE WATER (ESW) SYSTEM

1. Changes are made (additions, deletions, and/or changes) to the ISTS which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. Typographical/editorial error corrected.

3. This change is made to be consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 4.1.6.

4. The ESW System only provides cooling water to safety related loads. Therefore, the words "servicing safety related equipment" have been deleted.

5. The brackets have been removed and the proper plant specific information/value has been provided.

6. The current licensing basis recognizes that each ESW train can be crosstied to a train on the other unit. Therefore, a Note has been added to the LCO to ensure that when two trains are crosstied, the OPERABILITY of the ESW train includes the opposite unit ESW pump. In addition, the term "required" has been added to ISTS SR 3.7.8.3 since there may be more installed ESW pumps than are required to be OPERABLE.

Improved Standard Technical Specifications (ISTS) Bases Markup and Justification for Deviations (JFDs)

System
E SWS 1
B 3.7.8

B 3.7 PLANT SYSTEMS

B 3.7.8 Essential Service Water System (SWS) ESW 1

BASES

E System

BACKGROUND

The SWS provides a heat sink for the removal of process and operating heat from safety related components during a Design Basis Accident (DBA) or transient. During normal operation, and a normal shutdown, the SWS also provides this function for various safety related and nonsafety related components. The safety related function is covered by this LCO. 1

The SWS consists of two separate, 100% capacity, safety related, cooling water trains. Each train consists of two 100% capacity pumps, one component cooling water (CCW) heat exchanger, piping, valving, instrumentation, and two cyclone separators. The pumps and valves are remote and manually aligned, except in the unlikely event of a loss of coolant accident (LOCA). The pumps aligned to the critical loops are automatically started upon receipt of a safety injection signal, and all essential valves are aligned to their post accident positions. The SWS also provides emergency makeup to the spent fuel pool and CCW System [and is the backup water supply to the Auxiliary Feedwater System]. INSERT 1 1

Additional information about the design and operation of the SWS, along with a list of the components served, is presented in the FSAR, Section 9.2.1 (Ref. 1). The principal safety related function of the SWS is the removal of decay heat from the reactor via the CCW System. INSERT 1A 1

9.8.3 are System

APPLICABLE SAFETY ANALYSES

to assist in the

The design basis of the SWS is for one SWS train, in conjunction with the CCW System and a 100% capacity containment cooling system, to remove core decay heat following a design basis LOCA as discussed in the FSAR, Section 6.2 (Ref. 2). This prevents the containment sump fluid from increasing in temperature during the recirculation phase following a LOCA and provides for a gradual reduction in the temperature of this fluid as it is supplied to the Reactor Coolant System by the ECCS pumps. The SWS is designed to perform its function with a single failure of any active component, assuming the loss of offsite power. 1

all of; loss of coolant accident (; 9.8.3.2; Emergency Core Cooling System (

The SWS, in conjunction with the CCW System, also cools the unit from residual heat removal (RHR), as discussed in the FSAR, Section [5.4.7], (Ref. 3) entry conditions to MODE 5 during normal and post accident operations. The time required for this evolution is a function of the number of CCW and RHR System trains that are operating. One SWS train is sufficient to remove decay heat during subsequent operations in

removes heat; the; from RHR; 3 5 1

1 **INSERT 1**

The ESW System consists of two ESW pumps, two duplex strainers, and associated piping and valves. ESW System piping is arranged in two independent headers (trains), each serving certain safety related components. The two trains are arranged such that a rupture in either train will not jeopardize the safety functions of the ESW System. Each train is served by one ESW pump. One crosstie valve is available on each train in order to crosstie the train to one of the Unit 2 (Unit 1) and Unit 1 (Unit 2) ESW trains (since each unit train has a crosstie valve, both must be open to crosstie the two trains). Two of the four pumps can supply all of the Unit 1 and Unit 2 ESW flow requirements for unit operation, shutdown, and refueling. Therefore, each ESW train is normally crosstied with the associated Unit 2 (Unit 1) and Unit 1 (Unit 2) ESW train, with one ESW pump in each of the crosstied trains in operation. All four ESW pumps start on a Safety Injection signal from either unit. In addition, the Component Cooling Water (CCW) heat exchanger ESW outlet valves of the affected unit actuate to a predetermined position to ensure that the required ESW flow distributions are maintained during the recirculation phase on an accident. Flow is automatically supplied to the Containment Spray System heat exchangers during the recirculation phase of the accident if a Containment Spray signal has been initiated. Upon receipt of a Containment Isolation - Phase B Isolation signal, full ESW accident flow is established to both CCW heat exchangers. The header and valve arrangement ensures adequate ESW flow under all normal and emergency conditions. The ESW pumps obtain and discharge water to the ultimate heat sink (UHS), which is further discussed in the Bases for LCO 3.7.9, "Ultimate Heat Sink." In addition, the ESW System provides the backup water supply to the Auxiliary Feedwater System, when required by LCO 3.7.6, "Condensate Storage Tank."

1 **INSERT 1A**

and assisting in the removal of heat from containment after a DBA via the Containment Spray System.

E SW System 1
B 3.7.8

BASES

APPLICABLE SAFETY ANALYSES (continued)

MODES 5 and 6. This assumes a maximum SW temperature of 95 °F occurring simultaneously with maximum heat loads on the system. E pump discharge 86 1 3

The SW satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii). E System 1

LCO

Two SW trains are required to be OPERABLE to provide the required redundancy to ensure that the system functions to remove post accident heat loads, assuming that the worst case single active failure occurs coincident with the loss of offsite power. E 1

An SW train is considered OPERABLE during MODES 1, 2, 3, and 4 when: E 1

a. The pump is OPERABLE and ; 1 2

b. The associated piping, valves, heat exchanger, strainer, and instrumentation and controls required to perform the safety related function are OPERABLE. INSERT 2 1

APPLICABILITY

In MODES 1, 2, 3, and 4, the SW is a normally operating system that is required to support the OPERABILITY of the equipment serviced by the SW and required to be OPERABLE in these MODES. E System 1 1

In MODES 5 and 6, the OPERABILITY requirements of the SW are determined by the systems it supports. E System 1

ACTIONS

A.1 INSERT 3 6

If one SW train is inoperable, action must be taken to restore OPERABLE status within 72 hours. In this condition, the remaining OPERABLE SW train is adequate to perform the heat removal function. However, the overall reliability is reduced because a single failure in the OPERABLE SW train could result in loss of SW function. Required Action A.1 is modified by two Notes. The first Note indicates that the applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources - Operating," should be entered if an inoperable SW train results in an inoperable emergency diesel generator. The second Note indicates that the applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops - MODE 4," should be entered if an inoperable SW train results in an inoperable decay heat removal train. This is an exception to LCO 3.0.6 and ensures the proper actions are taken for these components. The 72 hour Completion Time is based on the redundant E E E E System 1

6

INSERT 2

In addition, when an ESW train is crosstied with the associated Unit 2 (Unit 1) and Unit 1 (Unit 2) ESW train, OPERABILITY of the ESW train also includes the associated Unit 2 (Unit 1) and Unit 1 (Unit 2) ESW pump.

6

INSERT 3

As noted in the LCO Note, ESW train OPERABILITY includes the associated Unit 2 (Unit 1) and Unit 1 (Unit 2) ESW pump when the ESW train is crosstied with the associated Unit 2 (Unit 1) and Unit 1 (Unit 2) ESW train. Thus, restoring the inoperable ESW train can be accomplished by closing the crosstie valves between the two trains.

E SW~~S~~ System 1
B 3.7.8

BASES

ACTIONS (continued)

capabilities afforded by the OPERABLE train, and the low probability of a DBA occurring during this time period. 1

B.1 and B.2

If the E SW~~S~~ train cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours and in MODE 5 within 36 hours. 1

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 unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.8.1

This SR is modified by a Note indicating that the isolation of the E SW~~S~~ System components or systems may render those components inoperable, but does not affect the OPERABILITY of the E SW~~S~~ System. 1 1

Verifying the correct alignment for manual, power operated, and ~~automatic valves in the~~ SW~~S~~ flow path provides assurance that the ~~proper flow paths exist for~~ SW~~S~~ operation. E This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since they are verified to be in the correct position prior to being locked, sealed, or secured. This SR does not require any testing or valve manipulation; rather, it involves verification that those valves capable of being mispositioned are in the correct position. This SR does not apply to valves that cannot be inadvertently misaligned, such as check valves. 1

The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions.

SR 3.7.8.2

This SR verifies proper automatic operation of the E SW~~S~~ valves on an actual or simulated actuation signal. The SW~~S~~ System ~~is a normally operating system that cannot be fully actuated as part of normal testing.~~ This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The ~~18~~ 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a unit outage and the 1 1 3

 1

BASES

SURVEILLANCE REQUIREMENTS (continued)

potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 24 ~~[18]~~ month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint. 3

SR 3.7.8.3

This SR verifies proper automatic operation of the required E SW~~S~~ pumps on an actual or simulated actuation signal. ~~The SWS is a normally operating system that cannot be fully actuated as part of normal testing during normal operation. The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a unit outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.~~ Operating experience has shown that these components usually pass the Surveillance when performed at the 24 ~~[18]~~ month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint. 6 1 1 3

REFERENCES

1. U FSAR, Section 9.8.3 ~~[9.2.1]~~. 1 3
2. U FSAR, Section 9.2.3.2 ~~[6.2]~~. 1 3
3. U FSAR, Section 9.5.2 ~~[5.4.7]~~. 1 3

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.8 BASES, ESSENTIAL SERVICE WATER (ESW) SYSTEM

1. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.
2. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.
3. The brackets have been removed and the proper plant specific information/value has been provided.
4. Typographical error corrected.
5. Editorial change made for clarity.
6. Changes have been made to be consistent with changes made to the Specification.

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.8, ESSENTIAL SERVICE WATER (ESW) SYSTEM

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 9

ITS 3.7.9, Ultimate Heat Sink (UHS) System

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

Add proposed ITS 3.7.9

M.1

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Add proposed ITS 3.7.9

M.1

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DISCUSSION OF CHANGES
ITS 3.7.9, ULTIMATE HEAT SINK (UHS)

ADMINISTRATIVE CHANGES

None

MORE RESTRICTIVE CHANGES

M.1 The CTS does not have any requirement for the Ultimate Heat Sink (UHS) to be OPERABLE. ITS 3.7.9 requires the UHS to be OPERABLE in MODES 1, 2, 3, and 4. This changes the CTS by incorporating the requirements of ITS 3.7.9.

The safety related function of the UHS is to provide a heat sink for process and operating heat from safety related components during a design basis accident or transient, as well as during normal operation and shutdown of the unit. This change is acceptable because the safety analyses assume the UHS is OPERABLE with a maximum water temperature. This change is designated as more restrictive because it adds new requirements to the CTS.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

None

LESS RESTRICTIVE CHANGES

None

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Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

CTS

3.7 PLANT SYSTEMS

3.7.9 Ultimate Heat Sink (UHS)

DOC M.1

LCO 3.7.9 The UHS shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. [One or more cooling towers with one cooling tower fan inoperable.	A.1	Restore cooling tower fan(s) to OPERABLE status.	7 days]
- REVIEWER'S NOTE - The [ ]°F is the maximum allowed UHS temperature value and is based on temperature limitations of the equipment that is relied upon for accident mitigation and safe shutdown of the unit. B. [Water temperature of the UHS > [90]°F and ≤ [ ]°F.	B.1	Verify water temperature of the UHS is ≤ [90]°F averaged over the previous 24 hour period.	Once per hour]
A. C. [Required Action and associated Completion Time of Condition A or B not met. OR] UHS inoperable for reasons other than Condition A or B.	A C.1 AND A C.2	Be in MODE 3. Be in MODE 5.	6 hours 36 hours

1

2

1 2

Doc M.1

CTS

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY	
~~SR 3.7.9.1~~	~~[Verify water level of UHS is ≥ [562] ft [mean sea level].~~	~~[24] hours]~~	4
Doc M.1 SR 3.7.9.2 1	[Verify average water temperature of UHS is ≤ [90]°F. within limit	24 hours]	4 3 2
~~SR 3.7.9.3~~	~~[Operate each cooling tower fan for ≥ [15] minutes.~~	~~31 days]~~	1
~~SR 3.7.9.4~~	~~[Verify each cooling tower fan starts automatically on an actual or simulated actuation signal.~~	~~[18] months]~~	1

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.9, ULTIMATE HEAT SINK (UHS)

1. The Ultimate Heat Sink (UHS) consists of Lake Michigan. CNP does not utilize cooling towers and Actions and Surveillances regarding cooling towers are deleted.

2. The brackets have been removed and the proper plant specific information/value has been provided.

3. ISTS SR 3.7.9.2 requires the verification that the average water temperature of the UHS is ≤ 90°F. This Surveillance Requirement and the temperature limit are bracketed. ITS SR 3.7.9.1 requires the verification that the average water temperature of the UHS is within limit. The limit is included in the ITS 3.7.9 Bases. Currently, this temperature is controlled under plant specific procedures. This deviation from the NUREG is acceptable since the limit will be controlled under the Technical Specifications Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled.

4. The purpose of performing a Surveillance verifying UHS level is to ensure sufficient water inventory to allow ESW System operation for at least 30 days following the design basis loss of coolant accident without the loss of net positive suction head (NPSH) for the ESW pumps. The CNP UHS design does not rely on plant design features (dams, weirs, cooling ponds, etc.) to capture a particular volume of water to ensure the 30 day water inventory requirement can be met. An essentially unlimited supply of water to the ESW System is provided by Lake Michigan. The CNP lake water intakes are at approximately 560 feet mean sea level. U. S. Geological Survey records confirm that recorded lake levels (which have been no lower than 575 feet mean sea level in the past 20 years) are well above an elevation that would challenge Lake Michigan as a viable heat sink. In addition, the CNP circulating water pumps will lose pumping capability at a lake level that is higher than the ESW pump NPSH requirements. Therefore, plant power operations can not be conducted unless ESW pump NPSH requirements are also met. On this basis, it is concluded that failure of Lake Michigan to support the UHS water inventory requirement is not credible. In addition, the CTS does not require any UHS level verifications. Therefore, ISTS SR 3.7.9.1 is not included in ITS 3.7.9. Also, due to this deletion, the subsequent Surveillance has been renumbered.

Improved Standard Technical Specifications (ISTS) Bases Markup and Justification for Deviations (JFDs)

B 3.7 PLANT SYSTEMS

B 3.7.9 Ultimate Heat Sink (UHS)

Essential

BASES

BACKGROUND

The UHS provides a heat sink for processing and operating heat from safety related components during a transient or accident, as well as during normal operation. This is done by utilizing the Service Water System (SWS) and the Component Cooling Water (CCW) System. (5) (1)

ESW

and its associated loads

The UHS has been defined as that complex of water sources, including necessary retaining structures (e.g., a pond with its dam, or a river with its dam), and the canals or conduits connecting the sources with, but not including, the cooling water system intake structures as discussed in the FSAR, Section [9.2.5] (Ref. 1). If cooling towers or portions thereof are required to accomplish the UHS safety functions, they should meet the same requirements as the sink. The two principal functions of the UHS are the dissipation of residual heat after reactor shutdown, and dissipation of residual heat after an accident. (2)

INSERT 1 (1)

transient or

A variety of complexes is used to meet the requirements for a UHS. A lake or an ocean may qualify as a single source. If the complex includes a water source contained by a structure, it is likely that a second source will be required. (1)

The basic performance requirements are that a 30 day supply of water be available, and that the design basis temperatures of safety related equipment not be exceeded. Basins of cooling towers generally include less than a 30 day supply of water, typically 7 days or less. A 30 day supply would be dependent on other source(s) and makeup system(s) for replenishing the source in the cooling tower basin. For smaller basin sources, which may be as small as a 1 day supply, the systems for replenishing the basin and the backup source(s) become of sufficient importance that the makeup system itself may be required to meet the same design criteria as an Engineered Safety Feature (e.g., single failure considerations), and multiple makeup water sources may be required. (1)

Additional information on the design and operation of the system, along with a list of components served, can be found in Reference 1.

1 **INSERT 1**

The UHS is Lake Michigan. Water is drawn from three submerged intake structures in the lake, located approximately 2,250 ft from the shoreline, and is piped through three parallel lines to the screen house. The screen house, common to both units, contains the circulating water pumps and valves, traveling water screens, ESW pumps, and associated equipment. The intake structures, the screen house, and connecting piping are all designed to ensure a reliable flow of cooling water to the plant at all times.

The Circulating Water System and related structures are designed to satisfy normal operating requirements and to assure that water is available to the ESW pumps under all foreseeable conditions.

Traveling water screens of adequate capacity for normal plant operation are provided in the intake structure. The huge oversize of the screen installation, in terms of the essential flow requirements, provides assurance that adequate water is available to the ESW pumps.

BASES

APPLICABLE SAFETY ANALYSES

The UHS is the sink for heat removed from the reactor core following all accidents and anticipated operational occurrences in which the unit is cooled down and placed on residual heat removal (RHR) operation. ~~For~~ The ~~units that use~~ UHS ~~as~~ is the normal heat sink for condenser cooling via the Circulating Water System, . Therefore, unit operation at full power is its maximum heat load. Its maximum post accident heat load occurs approximately 20 minutes after a design basis loss of coolant accident (LOCA). Near this time, the unit switches from injection to recirculation and the containment cooling systems and RHR are required to remove the core decay heat. (1) (1)

The operating limits are based on conservative heat transfer analyses for the worst case LOCA. Reference 1 and 2 provide~~s~~ the details of the assumptions used in the analysis, which include worst expected meteorological conditions, conservative uncertainties when calculating decay heat, and worst case single active failure (e.g., single failure of a manmade structure). The UHS is ~~designed in accordance~~ consistent with the Regulatory Guide 1.27 (Ref. 2), ~~which~~ requirement that requires a 30 day supply of cooling water in the UHS. (5) (3) (1)

The UHS satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

The UHS is required to be OPERABLE and is considered OPERABLE if it contains a sufficient volume of water at or below the maximum temperature that would allow the System SW~~S~~ to operate for at least 30 days following the design basis LOCA without the loss of net positive suction head (NPSH), and without exceeding the maximum design temperature of the equipment served by the ~~SWS~~. ~~To meet this condition, the UHS temperature should not exceed [90]°F]~~ 85.5 and the level should not fall below ~~[562 ft mean sea level] during~~ the level necessary for normal unit operation. (1) (E) (E) (4) (3)

APPLICABILITY

In MODES 1, 2, 3, and 4, the UHS is required to support the OPERABILITY of the equipment serviced by the UHS and required to be OPERABLE in these MODES.

In MODE 5 or 6, the OPERABILITY requirements of the UHS are determined by the systems it supports.

ACTIONS

~~[A.1~~

~~If one or more cooling towers have one fan inoperable (i.e., up to one fan per cooling tower inoperable), action must be taken to restore the inoperable cooling tower fan(s) to OPERABLE status within 7 days.~~ (3)

BASES

ACTIONS (continued)

(3)

The 7 day Completion Time is reasonable based on the low probability of an accident occurring during the 7 days that one cooling tower fan is inoperable (in one or more cooling towers), the number of available systems, and the time required to reasonably complete the Required Action.]

[B.1

(3)

- REVIEWER'S NOTE -

The [ ]°F is the maximum allowed UHS temperature value and is based on temperature limitations of the equipment that is relied upon for accident mitigation and safe shutdown of the unit.

With water temperature of the UHS > [90]°F, the design basis assumption associated with initial UHS temperature are bounded provided the temperature of the UHS averaged over the previous 24 hour period is ≤ [90]°F. With the water temperature of the UHS > [90]°F, long term cooling capability of the ECCS loads and DGs may be affected. Therefore, to ensure long term cooling capability is provided to the ECCS loads when water temperature of the UHS is > [90]°F, Required Action B.1 is provided to more frequently monitor the water temperature of the UHS and verify the temperature is ≤ [90]°F when averaged over the previous 24 hour period. The once per hour Completion Time takes into consideration UHS temperature variations and the increased monitoring frequency needed to ensure design basis assumptions and equipment limitations are not exceeded in this condition. If the water temperature of the UHS exceeds [90]°F when averaged over the previous 24 hour period or the water temperature of the UHS exceeds [ ]°F, Condition C must be entered immediately.]

C.1 and C.2 A (3) (4)

If ~~the Required Actions and Completion Times of Condition [A or B] are not met, or~~ the UHS is inoperable ~~for reasons other than Condition A~~, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours and in 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 unit systems.

BASES

SURVEILLANCE REQUIREMENTS

[SR 3.7.9.1

This SR verifies that adequate long term (30 day) cooling can be maintained. The specified level also ensures that sufficient NPSH is available to operate the SWS pumps. The [24] hour Frequency is based on operating experience related to trending of the parameter variations during the applicable MODES. This SR verifies that the UHS water level is ≥ [562] ft [mean sea level].] 3

1 SR 3.7.9.2 to ensure E System its associated loads 3 4

This SR verifies that the SWS is available to cool the CCW System to at least its maximum design temperature with the maximum accident or normal design heat loads for 30 days following a Design Basis Accident. their INSERT 2 1

The 24 hour Frequency is based on operating experience related to trending of the parameter variations during the applicable MODES. This SR verifies that the average water temperature of the UHS is ≤ [90]°F. 85.5 (as measured in the forebay) 2 4

[SR 3.7.9.3

Operating each cooling tower fan for ≥ [15] minutes ensures that all fans are OPERABLE and that all associated controls are functioning properly. It also ensures that fan or motor failure, or excessive vibration, can be detected for corrective action. The 31 day Frequency is based on operating experience, the known reliability of the fan units, the redundancy available, and the low probability of significant degradation of the UHS cooling tower fans occurring between surveillances.] 3

[SR 3.7.9.4

This SR verifies that each cooling tower fan starts and operates on an actual or simulated action signal. The [18] month Frequency is consistent with the typical refueling cycle. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.]

REFERENCES

1. U FSAR, Section [9.2.5] 10.6.2 1 4
2. UFSAR, Table 9.8-5, 1
2. Regulatory Guide 1.27, Revision 2, January 1976. 1

1 **INSERT 2**

One acceptable method of determining the UHS temperature is averaging the available operating circulating water pumps discharge temperatures.

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.9 BASES, ULTIMATE HEAT SINK (UHS)

1. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. Changes are made for consistency within the Bases.

3. Changes are made to reflect those changes made to the Specification. Subsequent requirements are renumbered or revised, where applicable, to reflect the changes.

4. The brackets have been removed and the proper plant specific information/value has been provided.

5. Typographical error corrected.

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.9, ULTIMATE HEAT SINK (UHS)

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 10

ITS 3.7.10, Control Room Emergency Ventilation (CREV) System

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.7 PLANT SYSTEMS

3/4.7.5 CONTROL ROOM VENTILATION SYSTEM

CONTROL ROOM EMERGENCY VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

Two | trains

LCO 3.7.10 3.7.5.1 ~~The~~ control room emergency ventilation system (CREVS) shall be OPERABLE ~~with:~~ — LA.1

~~a. Two independent pressurization trains, and~~

~~b. One charcoal adsorber/HEPA filter unit.~~

-----NOTE-----
The control room envelope/pressure boundary may be opened intermittently under administrative control.

APPLICABILITY: MODES 1, 2, 3, 4, and during the movement of irradiated fuel assemblies. — A.7

ACTION:

MODES 1, 2, 3, and 4:

ACTION A, ACTION D — a. With one pressurization train inoperable, restore the inoperable train to OPERABLE status within 7 days ~~or be~~ in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION C, ACTION D — b. With the filter unit inoperable, restore the filter unit to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION B, ACTION D — c. With two CREVS pressurization trains inoperable due to an inoperable control room envelope/pressure boundary, restore the control room envelope/pressure boundary to OPERABLE status within 24 hours ~~or be~~ in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Add proposed ACTION G — A.2

During the movement of irradiated fuel assemblies:

ACTION A, ACTION E — d. With one pressurization train inoperable, restore the inoperable pressurization train to OPERABLE status within 7 days, ~~or~~ initiate and maintain operation of the remaining OPERABLE train in the pressurization/cleanup alignment. Add proposed Required Action E.2 — A.3

ACTION F — e. With any of the following: (1) ~~both~~ pressurization trains inoperable; ~~(2) the filter unit inoperable,~~ or (3) the control room envelope/pressure boundary inoperable, immediately suspend all operations involving the movement of irradiated fuel assemblies. — LA.2

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.7 PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS

L.3

4.7.5.1 The control room emergency ventilation system shall be demonstrated OPERABLE:

a. Deleted 46

SR 3.7.10.1 b. At least once per 31 days on a STAGGERED TEST BASIS ~~by initiating flow through the HEPA filter and charcoal adsorber train~~ and verifying that the train operates for at least 15 minutes. LA.3

Add proposed SR 3.7.10.2 A.4

c. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system, by:

1. Verifying that the charcoal adsorbers remove ≥ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 6000 cfm ± 10%.

2. Verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 6000 cfm ± 10%. See ITS 5.5

3. Verifying within 31 days after removal that a laboratory analysis of a carbon sample from either at least one test canister or at least two carbon samples removed from one of the charcoal adsorbers shows a penetration of less than or equal to 1.0% radioactive methyl iodide when the sample is tested in accordance with ASTM D3803-1989, 30°C, 95% R.H. The carbon samples not obtained from test canisters shall be prepared by either:

a) Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed, or

b) Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed.

4. Verifying a system flow rate of 6000 cfm ± 10% during system operation when tested in accordance with ANSI N510-1975.

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.7 PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

d. After every 720 hours of charcoal adsorber operation by either:

1. Verifying within 31 days after removal that a laboratory analysis of a carbon sample obtained from a test canister shows a penetration of less than or equal to 1.0% for radioactive methyl iodide when the sample is tested in accordance with ASTM D3803-1989, 30°C, 95% R.H; or

2. Verifying within 31 days after removal that a laboratory analysis of at least two carbon samples shows a penetration of less than or equal to 1.0% for radioactive methyl iodide when the samples are tested in accordance with ASTM D3803-1989, 30°C, 95% R.H; and the samples are prepared by either:

a) Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed, or

b) Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed.

Subsequent to reinstalling the adsorber tray used for obtaining the carbon sample, the system shall be demonstrated OPERABLE by also:

a) Verifying that the charcoal adsorbers remove ≥ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 6000 cfm ± 10%, and

b) Verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 6000 cfm ± 10%.

See ITS 5.5

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.7 PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

L.2

SR 3.7.10.3, SR 3.7.10.4

e. At least once per ~~18~~ 24 months by:

See ITS 5.5

LA.4

1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches Water Gauge while operating the ventilation system at a flow rate of 6000 cfm plus or minus 10%.

an actual or simulated actuation signal

Add proposed Note to SR 3.7.10.3

SR 3.7.10.3

2. a. Verifying that on ~~a Safety Injection Signal from Unit 1,~~ the system automatically operates ~~in the pressurization/cleanup mode.~~

b. Verifying that on ~~a Safety Injection Signal from Unit 2,~~ the system automatically operates ~~in the pressurization/cleanup mode.~~

A.6

SR 3.7.10.4

3. Verifying that the system maintains the control room envelope/pressure boundary at a positive pressure of greater than or equal to 1/16 inch W. G. relative to the outside atmosphere ~~at a system flow rate of 6000 cfm plus or minus 10%~~, with a makeup air flow rate of $\leq$ 1000 cfm. on a STAGGERED TEST BASIS

LA.5

M.1

f. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove greater than or equal to 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 6000 cfm plus or minus 10%.

g. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove greater than or equal to 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 6000 cfm plus or minus 10%.

See ITS 5.5

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.7 PLANT SYSTEMS

3/4.7.5 CONTROL ROOM VENTILATION SYSTEM

CONTROL ROOM EMERGENCY VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION Two trains

LCO 3.7.10 3.7.5.1 ~~The~~ control room emergency ventilation system (CREVS) shall be OPERABLE ~~with:~~ LA.1

~~a. Two independent pressurization trains, and~~

~~b. One charcoal adsorber/HEPA filter unit.~~

-----NOTE-----
The control room envelope/pressure boundary may be opened intermittently under administrative control.

APPLICABILITY: MODES 1, 2, 3, 4, and during the movement of irradiated fuel assemblies. A.7

ACTION:

MODES 1, 2, 3, and 4:

ACTION A / ACTION D — a. With one pressurization train inoperable, restore the inoperable train to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION C / ACTION D — b. With the filter unit inoperable, restore the filter unit to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION B / ACTION D — c. With two CREVS pressurization trains inoperable due to an inoperable control room envelope/pressure boundary, restore the control room envelope/pressure boundary to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Add proposed ACTION G A.2

During the movement of irradiated fuel assemblies:

ACTION A / ACTION E — d. With one pressurization train inoperable, restore the inoperable pressurization train to OPERABLE status within 7 days, or initiate and maintain operation of the remaining OPERABLE train in the pressurization/cleanup alignment. Add proposed Required Action E.2 A.3

ACTION F — e. With any of the following: ~~(1) both pressurization trains inoperable; (2) the filter unit inoperable; or (3) the control room envelope/pressure boundary inoperable,~~ immediately suspend all operations involving the movement of irradiated fuel assemblies. LA.2

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.7 PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS

L.3

4.7.5.1 The control room emergency ventilation system shall be demonstrated OPERABLE:

a. Deleted

46

SR 3.7.10.1 b. At least once per ~~31~~ days on a STAGGERED TEST BASIS by ~~initiating flow through the HEPA filter and charcoal adsorber train~~ and verifying that the system operates for at least 15 minutes. LA.3

Add proposed SR 3.7.10.2 A.4

c. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system, by:

1. Verifying that the charcoal adsorbers remove ≥ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 6000 cfm ± 10%.

2. Verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 6000 cfm ± 10%.

3. Verifying within 31 days after removal that a laboratory analysis of a carbon sample from either at least one test canister or at least two carbon samples removed from one of the charcoal adsorbers shows a penetration of less than or equal to 1.0% for radioactive methyl iodide when the sample is tested in accordance with ASTM D3803-1989, 30°C, 95% R.H. The carbon samples not obtained from test canisters shall be prepared by either:

   a) Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed, or

   b) Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed.

4. Verifying a system flow rate of 6000 cfm ± 10% during system operation when tested in accordance with ANSI N510-1975.

See ITS 5.5

ITS 3.7.10

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.7 PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

d. After every 720 hours of charcoal adsorber operation by either:

1. Verifying within 31 days after removal that a laboratory analysis of a carbon sample obtained from a test canister shows a penetration of less than or equal to 1.0% for radioactive methyl iodide when the sample is tested in accordance with ASTM D3803-1989, 30°C, 95% R.H; or

2. Verifying within 31 days after removal that a laboratory analysis of at least two carbon samples shows a penetration of less than or equal to 1.0% for radioactive methyl iodide when the samples are tested in accordance with ASTM D3803-1989, 30°C, 95% R.H. and the samples are prepared by either:

   a) Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed, or

   b) Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed.

   Subsequent to reinstalling the adsorber tray used for obtaining the carbon sample, the system shall be demonstrated OPERABLE by also:

   a) Verifying that the charcoal adsorbers remove ≥ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 6000 cfm ± 10%, and

   b) Verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 6000 cfm ± 10%.

See ITS 5.5

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ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.7 PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

L.2 24

SR 3.7.10.3, SR 3.7.10.4

e. At least once per ~~18~~ months by:

See ITS 5.5

A.6

1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches Water Gauge while operating the ventilation system at a flow rate of 6000 cfm plus or minus 10%.

Add proposed Note to SR 3.7.10.3

SR 3.7.10.3

2. a. Verifying that on ~~a Safety Injection Signal from Unit 1~~, the system automatically operates ~~in the pressurization/cleanup mode~~.

an actual or simulated actuation signal

b. Verifying that on ~~a Safety Injection Signal from Unit 2~~ the system automatically operates ~~in the pressurization/cleanup mode~~.

LA.4

SR 3.7.10.4

3. Verifying that the system maintains the control room envelope/pressure boundary at a positive pressure of greater than or equal to 1/16 inch W. G. relative to the outside atmosphere ~~at a system flow rate of 6000 cfm plus or minus 10%~~ with a makeup air flow rate of ≤ 1000 cfm. on a STAGGERED TEST BASIS

LA.5

M.1

f. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove greater than or equal to 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 6000 cfm plus or minus 10%.

g. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove greater than or equal to 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 6000 cfm plus or minus 10%.

See ITS 5.5

DISCUSSION OF CHANGES
ITS 3.7.10, CONTROL ROOM EMERGENCY VENTILATION (CREV) SYSTEM

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A.2 CTS 3.7.5.1 does not provide an Action for two CREV pressurization trains inoperable for reasons other than an inoperable filter unit or an inoperable control room boundary. Thus, CTS LCO 3.0.3 would be required to be entered. ITS 3.7.10 ACTION G requires immediate entry into ITS LCO 3.0.3 when two CREV trains are inoperable in MODE 1, 2, 3, or 4 for reasons other than Conditions B and C. Condition B covers the inoperability of two CREV trains due to an inoperable control room boundary and Condition C covers the inoperability of two CREV trains due to an inoperable filter unit. This changes the CTS by providing a specific ACTION for two inoperable trains for reasons other than due to an inoperable control room boundary or an inoperable filter unit in MODE 1, 2, 3, or 4.

The purpose of ITS 3.7.10 ACTION G is to require immediate entry into ITS LCO 3.0.3 when two CREV trains are inoperable in MODE 1, 2, 3, or 4 for reasons other than due to an inoperable control room boundary or an inoperable filter unit. CTS 3.7.5.1 Action b covers the condition for an inoperable filter unit and CTS 3.7.5.1 Action c covers the conditions when two CREV trains are inoperable due to an inoperable control room envelope/pressure boundary. If two trains were inoperable for any other reason, then CTS LCO 3.0.3 would be entered because there is no other Action in CTS 3.7.5.1 that fits this condition. This change is acceptable because this same action is required in the CTS. This change is designated as administrative because it does not result in technical changes to the CTS.

A.3 During the movement of irradiated fuel assemblies, CTS 3.7.5.1 Action d allows 7 days to restore an inoperable CREV pressurization train or to initiate and maintain operation of the remaining OPERABLE train in the pressurization/ cleanup alignment. ITS 3.7.10 ACTION A provides 7 days to restore an inoperable CREV train. If not restored, then ITS 3.7.10 Required Action E.1 would require the immediate placement of the OPERABLE CREV train in the pressurization/cleanup mode or ITS 3.7.10 Required Action E.2 would require the suspension of movement of irradiated fuel assemblies. This changes the CTS by providing the alternate action to suspend movement of irradiated fuel assemblies.

The purpose of CTS 3.7.5.1 Action d is to provide the appropriate compensatory action with one inoperable CREV train during the movement of irradiated fuel assemblies. If the movement of irradiated fuel assemblies were suspended when a CREV train is found to be inoperable, the Applicability of the Specification no longer applies; therefore the specified action will not be required to be performed. This change is acceptable because the proposed change is

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ITS 3.7.10, CONTROL ROOM EMERGENCY VENTILATION (CREV) SYSTEM

consistent with the CTS. This change is designated as administrative because it does not result in technical changes to the CTS.

A.4 CTS 4.7.5.1.c specifies the CREV System Surveillances to be performed after any structural maintenance on the HEPA filter or charcoal adsorber housings, or following painting, fire, or chemical release in any ventilation zone communicating with the system. CTS 4.7.5.1.d specifies the CREV System Surveillances to be performed after every 720 hours of charcoal adsorber operation. CTS 4.7.5.1.e.1 specifies the CREV System Surveillance for the pressure drop across the combined HEPA filters and charcoal adsorber banks. CTS 4.7.5.1.f specifies the CREV System Surveillance after each complete or partial replacement of a HEPA filter bank. CTS 4.7.5.1.g specifies the CREV System Surveillance after each complete or partial replacement of a charcoal adsorber bank. ITS SR 3.7.10.2 requires performing required CREV System filter testing in accordance with the Ventilation Filter Testing Program (VFTP). CTS 4.7.5.1 does not include a VFTP, but the requirements that make up the VFTP are being moved to ITS 5.5. This changes CTS by requiring testing in accordance with the VFTP, whose requirements are being moved to ITS 5.5.

This change is acceptable because filter testing requirements are being moved to the VFTP as part of ITS 5.5, and ITS SR 3.7.10.2 references the VFTP for performing these tests. This change is designated as administrative because it does not result in technical changes to the CTS.

A.5 Not used.

A.6 CTS 4.7.5.1.e.2 requires verifying that on a safety injection (SI) signal, the CREV System automatically operates in the pressurization/cleanup mode. ITS SR 3.7.10.3 covers this requirement, but also includes a Note that states the SR is only required to be met in MODES 1, 2, 3, and 4. This changes the CTS by clearly stating the MODES in which the SR must be met.

The purpose CTS 4.7.5.1.e.2 is to ensure the CREV trains start automatically when required. While the Applicability of CTS 3.7.5.1 includes "during the movement of irradiated fuel assemblies," the SI signal is only required to be OPERABLE in MODES 1, 2, 3, and 4 in CTS 3.3.2. Thus, the CTS 4.7.5.1.e.2 Surveillance is actually only applicable in MODES 1, 2, 3, and 4; not during the movement of irradiated fuel assemblies. Therefore, for clarity, a Note has been added in the ITS. This change is designated as administrative because it does not result in any technical changes to the CTS.

A.7 CTS 3.7.5.1 Applicability includes "during the movement of irradiated fuel assemblies." ITS 3.7.10 Applicability includes "During movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment." This changes the CTS by clarifying the locations that fuel movement is taking place.

The purpose of CTS 3.7.5.1, with respect to fuel handling, is to ensure the CREV System is OPERABLE during the conditions in which a fuel handling accident can occur and protection of the personnel in the control room is required. This protection is required during irradiated fuel movement in three locations: the unit containment, the auxiliary building, and the opposite unit containment. Therefore, for clarity, all three locations are specified in the ITS Applicability, in lieu of the current wording that just specifies irradiated fuel movement. This change is designated as administrative because it does not result in any technical changes to the CTS.

MORE RESTRICTIVE CHANGES

M.1 CTS 4.7.5.1.e.3 requires the verification that the system maintains the control room envelope/pressure boundary at a positive pressure of greater than or equal to 1/16 inch W.G. relative to the outside atmosphere at a system flow rate of 6000 cfm plus or minus 10%, with a makeup air flow rate ≤ 1000 cfm every 18 months. ITS SR 3.7.10.4 requires the verification that each CREV train can maintain a positive pressure of ≥ 0.0625 inches water gauge, relative to the outside atmosphere during the pressurization/cleanup mode of operation at a makeup flow rate of ≤ 1000 cfm every 24 months on a STAGGERED TEST BASIS. This changes the CTS by requiring both trains to be tested in the course of 48 months, as represented by the STAGGERED TEST BASIS requirement of the 24 month Frequency. Other changes to this requirement are discussed in DOC L.2 and LA.5.

The purpose of CTS 4.7.5.1.e.3 is to ensure that the system can maintain the control room envelope/pressure boundary at a positive pressure relative to the outside atmosphere. The current Surveillance does not specify which pressurization train must be used to perform this validation. The new requirement will require the Surveillance be performed by alternating pressurization trains at the specified interval. This change is acceptable because it will ensure each train is tested. The change has been designated as more restrictive because it explicitly requires each CREV train to be tested on a STAGGERED TEST BASIS.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.7.5.1 states that the CREV System shall be OPERABLE with two independent pressurization trains and one charcoal adsorber/HEPA filter unit. ITS LCO 3.7.10 states that two CREV trains shall be OPERABLE, but the details of what constitutes an OPERABLE CREV train are moved to the Bases. This changes the CTS by removing details of what constitutes an OPERABLE train to the Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate

protection of public health and safety. The ITS still retains the requirement that two Control Room Emergency Ventilation System trains be OPERABLE. The details of what a train consists of do not need to appear in the Specification in order for the requirement to apply. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.2 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 3.7.5.1 Action e requires, during movement of irradiated fuel assemblies, the immediate suspension of all operations involving the movement of irradiated fuel assemblies when both pressurization trains are inoperable, the filter unit is inoperable, or the control room envelope/pressure boundary is inoperable. ITS 3.7.10 ACTION F requires the same action; however, entry into the Condition is for when two CREV trains are inoperable during the movement of recently irradiated fuel assemblies. This changes the CTS by relocating the details of what conditions make two CREV trains inoperable to the Bases.

The removal of these details for performing actions from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirements to enter ITS 3.7.10 ACTION F when two CREV trains are inoperable during movement of irradiated fuel assemblies and to immediately suspend these operations. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LA.3 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.7.5.1.b states that each Control Room Emergency Ventilation System shall be demonstrated OPERABLE by "initiating flow through the HEPA filter and charcoal adsorber train" and verifying that the train operates for at least 15 minutes. ITS SR 3.7.10.1 states to operate each CREV train for ≥ 15 minutes. This changes the CTS by moving the detail of the flow path from the CTS to the Bases.

The removal of these details for performing Surveillance Requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement to periodically operate the CREV trains. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases

Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LA.4 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.7.5.1.e.2.a requires verification that on a Safety Injection Signal from the associated unit, the system automatically operates in the pressurization/cleanup mode. CTS 4.7.5.1.e.2.b requires verification that on a Safety Injection Signal from the other unit, the system automatically operates in the pressurization/cleanup mode. ITS SR 3.7.10.3 requires the verification that each CREV train actuates on an actual or simulated actuation signal. This changes the CTS by relocating the details that the test must be performed using a Safety Injection Signal from the associated unit and from the other unit, and that the system must actuate automatically in the pressurization/cleanup mode, to the Bases.

The removal of these details for performing Surveillance Requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement to verify that each CREV train actuates on an actual or simulated actuation signal. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LA.5 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.7.5.1.e.3 requires the verification that the system maintains the control room envelope/pressure boundary at a positive pressure of greater than or equal to 1/16 inch W.G. relative to the outside atmosphere at a system flow rate of 6000 cfm plus or minus 10% with a makeup air flow rate $\leq$ 1000 cfm. ITS SR 3.7.10.4 requires the verification that each CREV train can maintain a positive pressure of $\geq$ 0.0625 inches water gauge, relative to the outside atmosphere during the pressurization/cleanup mode of operation at a makeup flow rate of $\leq$ 1000 cfm. This changes the CTS by relocating the details of the required system flow to the Bases.

The removal of these details for performing Surveillance Requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement to verify that each CREV train can maintain a positive pressure of $\geq$ 0.0625 inches water gauge, relative to the outside atmosphere during the pressurization/cleanup mode of operation at a makeup flow rate of $\leq$ 1000 cfm. In addition, ITS Section 5.5 continues to maintain a fan flow rate requirement. Also, this change is acceptable because these types of procedural details will be

DISCUSSION OF CHANGES
ITS 3.7.10, CONTROL ROOM EMERGENCY VENTILATION (CREV) SYSTEM

adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L.1 Not Used.

L.2 *(Category 10 – 18 to 24 Month Surveillance Frequency Change, Non-Channel Calibration Type)* CTS 4.7.5.1.e.2.a requires the verification that on a Safety Injection Signal from the associated unit, the system automatically operates in the pressurization/cleanup mode. CTS 4.7.5.1.e.2.b requires the verification that on a Safety Injection Signal from the other unit, the system automatically operates in the pressurization/cleanup mode. CTS 4.7.5.1.e.3 requires the verification that the system maintains the control room envelope/pressure boundary at a positive pressure of greater than or equal to 1/16 inch W.G. relative to the outside atmosphere at a system flow rate of 6000 cfm plus or minus 10%, with a makeup air flow rate $\leq$ 1000 cfm. These tests are required to be performed every 18 months. ITS SR 3.7.10.3 requires the verification that each CREV train actuates on an actual or simulated actuation signal. ITS SR 3.7.10.4 requires the verification that each CREV train can maintain a positive pressure of $\geq$ 0.0625 inches water gauge, relative to the outside atmosphere during the pressurization mode of operation at a makeup flow rate of $\leq$ 1000 cfm. This changes the CTS by extending the Frequency of the Surveillance from 18 months (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2) to 24 months (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2).

The purpose of CTS 4.7.5.1.e.2 is to ensure the CREV System trains start automatically while CTS 4.7.5.1.e.3 ensures that the CREV System can maintain the appropriate control room pressure. This change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical surveillance data and maintenance data sufficient to determine failure modes have not revealed any time-based failure mechanisms. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. Extending the Surveillance test interval for the CREV trains is acceptable because the CREV trains are verified to be operating properly throughout the operating cycle by requiring each CREV train to be operated for $\geq$ 15 minutes every 184 days. This testing ensures that a significant portion of the CREV circuitry is operating properly and will detect significant failures of this circuitry. Additional justification for extending the Surveillance test interval is that the CREV trains, including the actuating logic, is designed to be single failure, therefore ensuring system availability in the event of a failure of one CREV train. Based on the inherent system and component reliability and the testing performed during the operating cycle, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 24 month Surveillance Frequency, if performed at the maximum interval allowed by ITS SR 3.0.2 (30 months) does not invalidate any assumptions in the plant licensing basis. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.3 *(Category 9 – Surveillance Frequency Change Using GL 91-04 Guidelines, Non-24 Month Type Change)* CTS 4.7.5.1.b requires the CREV trains be demonstrated OPERABLE at least once per 31 days on a STAGGERED TEST BASIS by initiating flow through the HEPA filter and charcoal adsorber train and verifying that the system operates for at least 15 minutes. ITS SR 3.7.10.1 requires the performance of a similar Surveillance, but at a Frequency of 46 days on STAGGERED TEST BASIS. This changes the CTS by extending the Frequency of the Surveillances from 31 days (i.e., a maximum of 38.75 days accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2) to 92 days (i.e., a maximum of 115 days accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2). A change to the STAGGERED TEST BASIS definition is discussed in the Discussion of Changes for ITS 1.0.

The purpose of CTS 4.7.5.1.b is to provide a degree of assurance that the CREV trains will operate properly when required. An evaluation of the surveillance interval extension was performed, based on the same approach described in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical surveillance data and maintenance data sufficient to determine failure modes have shown that these tests normally pass their Surveillances at the current Frequency. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. Extending the Surveillance test interval for these Surveillances is acceptable for the following reasons: a) Many of the system's components are shared with the Control Room Air Conditioning System, therefore significant portions of the CREV System are monitored during normal operation; and b) Those portions of the system that are not normally operating have surveillance history that indicates they are highly reliable. In addition, there are two independent and redundant CREV System filter unit fans, each of which is capable of performing the required safety function. Therefore, based on system redundancy, the inherent system and component reliability, and the fact that many of the system components are normally operating, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 46 days on a STAGGERED TEST BASIS Surveillance Frequency (i.e., 92 day Surveillance Frequency for each train), if performed at the maximum interval allowed by ITS SR 3.0.2 (115 days for each train) does not invalidate any assumptions in the plant licensing basis. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

V

CRE~~FS~~ System 1
3.7.10

CTS

3.7 PLANT SYSTEMS 1

Ventilation

V

3.7.10 Control Room Emergency ~~Filtration~~ System (CRE~~FS~~)

V

LCO 3.7.5.1

LCO 3.7.10 Two CRE~~FS~~ trains shall be OPERABLE. 1

- NOTE -
The control room boundary may be opened intermittently under administrative control.

and

APPLICABILITY: MODES 1, 2, 3, 4, ~~5, and 6~~ 2
During movement of ~~recently~~ irradiated fuel assemblies. 2

INSERT 1

ACTIONS 6

CONDITION V	REQUIRED ACTION V	COMPLETION TIME
Actions a and d A. One CRE~~FS~~ train inoperable. V	A.1 Restore CRE~~FS~~ train to OPERABLE status.	7 days 1
Action c B. Two CRE~~FS~~ trains inoperable due to inoperable control room boundary in MODE 1, 2, 3, or 4.	B.1 Restore control room boundary to OPERABLE status.	24 hours 1
Actions a, b, and c ~~C~~ D Required Action and associated Completion Time of Condition A ~~or~~ B, or C not met in MODE 1, 2, 3, or 4.	~~C~~.1 D Be in MODE 3. AND ~~C~~.2 Be in MODE 5.	6 hours 36 hours 3

INSERT 1A 3

6 **INSERT 1**

in the containment, auxiliary building, and the Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

CTS

3 **INSERT 1A**

Action b	C. Two CREV trains inoperable due to inoperable filter unit in MODE 1, 2, 3, or 4.	C.1 Restore filter unit to OPERABLE status.	24 hours

CTS

V System 1

CRE~~ACS~~ 3.7.10

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
Action d	E ~~D~~. Required Action and associated Completion Time of Condition A not met ~~in MODE 5 or 6, or~~ during movement of ~~[recently]~~ irradiated fuel assemblies.	E ~~D~~.1 ~~- NOTE - [Place in toxic gas protection mode if automatic transfer to toxic gas protection mode is inoperable.]~~ Place OPERABLE CRE~~ACS~~ V train in ~~emergency~~ pressurization/cleanup mode. OR E ~~D~~.2 Suspend movement of ~~[recently]~~ irradiated fuel assemblies.	Immediately Immediately	3 2 1 3 2
Action e	F ~~E~~. Two CRE~~ACS~~ V trains inoperable ~~in MODE 5 or 6, or~~ during movement of ~~[recently]~~ irradiated fuel assemblies. d	F ~~E~~.1 Suspend movement of ~~[recently]~~ irradiated fuel assemblies.	Immediately	3 1 2 4
DOC A.3	G ~~F~~. Two CRE~~ACS~~ V trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B and C 5	G ~~F~~.1 Enter LCO 3.0.3	Immediately	3 1 3

SURVEILLANCE REQUIREMENTS

		SURVEILLANCE	FREQUENCY	
4.7.5.1.b	SR 3.7.10.1	Operate each CRE~~ACS~~ V train for ~~[≥ 10 continuous hours with the heaters operating or (for systems without heaters) ≥ 15 minutes]~~.	~~31 days~~ 46 days on a STAGGERED TEST BASIS 7	1 2
4.7.5.1.c, 4.7.5.1.d, 4.7.5.1.e.1, 4.7.5.1.f, 4.7.5.1.g	SR 3.7.10.2	Perform required CRE~~ACS~~ V System filter testing in accordance with the ~~[~~Ventilation Filter Testing Program (VFTP)~~]~~.	In accordance with ~~[~~VFTP~~]~~	1 2

CTS

SURVEILLANCE REQUIREMENTS (continued)

	INSERT 2 SURVEILLANCE V System	FREQUENCY	
4.7.5.1.e.2 SR 3.7.10.3	Verify each CREVS System train actuates on an actual or simulated actuation signal.	18 24 months	(1) (2)
4.7.5.1.e.3 SR 3.7.10.4	Verify one CREVS System train can maintain a positive pressure of ≥ 0.125 0.0625 inches water gauge, relative to the adjacent turbine building outside atmosphere during the pressurization cleanup mode of operation at a makeup flow rate of ≤ 3000 1000 cfm.	18 24 months on a STAGGERED TEST BASIS	(1) (2) (2) (1) (2)

(5)

5 **INSERT 2**

-NOTE-
Only required to be met in MODES 1, 2, 3, and 4.

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.10, CONTROL ROOM EMERGENCY VENTILATION (CREV) SYSTEM

1. Changes are made (additions, deletions, and/or changes) to the ISTS which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. The brackets are removed and the proper plant specific information/value is provided.

3. ITS 3.7.10 ACTION C has been added to provide Actions for the inoperability of the filter unit, consistent with the current licensing basis. In addition, due to this change, subsequent ACTIONS have been revised and/or renumbered.

4. Typographical error corrected.

5. A Note has been added to ISTS SR 3.7.10.3 to state that the SR is only required to be met in MODES 1, 2, 3, and 4. The CREV System is assumed to be automatically actuated by a safety injection (SI) signal in MODES 1, 2, 3, and 4 only. The CREV System is assumed to be manually actuated during movement of irradiated fuel assemblies. Therefore, the Note is needed to ensure the SR is only required to be met in MODES 1, 2, 3, and 4, since the Applicability of ITS 3.7.10 includes during the movement of irradiated fuel assemblies (and movement can occur in MODES other than MODES 1, 2, 3, and 4). This is consistent with the current licensing basis.

6. The Applicability has been clarified since CNP has two units, and irradiated fuel movement in three different locations affect control room dose in each of the two control rooms.

7. The Frequency has been changed to 46 days on a STAGGERED TEST BASIS. The technical justification for this change is provided in the Discussion of Changes.

Improved Standard Technical Specifications (ISTS) Bases Markup and Justification for Deviations (JFDs)

B 3.7 PLANT SYSTEMS

B 3.7.10 Control Room Emergency Filtration Ventilation System (CREFS) (1)

BASES

BACKGROUND

The CREFS System provides a protected environment from which operators can control the unit following an uncontrolled release of radioactivity~~, chemicals, or toxic gas~~. (1)

The CREFS System consists of two ~~independent, redundant~~ trains that recirculate and filter the control room air and outside air. Each train ~~consists of~~ a prefilter ~~or demister~~, a high efficiency particulate air (HEPA) filter, ~~an activated~~ charcoal adsorber section for removal of gaseous activity (principally iodines), ~~and a~~ and fan. Ductwork, valves or dampers, and instrumentation also form part of the system ~~as well as demisters to remove water droplets from the air stream~~. ~~A second bank of HEPA filters follows the adsorber section to collect carbon fines and provide backup in case of failure of the main HEPA filter bank.~~ INSERT 1 INSERT 1A (3)

The CREFS CREV System is an emergency outside intake system, ~~parts of~~ which ~~may also operate during normal unit operations~~ is normally in the standby mode of operation. INSERT 2 Upon receipt of the actuating signal(s), normal air supply to the ~~control room~~ CRAC System is isolated~~, and the stream of ventilation air is recirculated through the system filter trains~~. INSERT 3 The prefilters ~~or demisters~~ remove any large particles in the air ~~and any entrained water droplets present~~ (5) to prevent excessive loading of the HEPA filters and charcoal adsorbers. ~~Continuous operation of each train for at least 10 hours per month, with the heaters on, reduces moisture buildup on the HEPA filters and adsorbers. Both the demister and heater are important to the effectiveness of the charcoal adsorbers.~~ (1) (3)

~~Actuation of the CREFS places the system in either of two separate states (emergency radiation state or toxic gas isolation state) of the emergency mode of operation, depending on the initiation signal. Actuation of the system to the emergency radiation state of the emergency mode of operation, closes the unfiltered outside air intake and unfiltered exhaust dampers, and aligns the system for recirculation of the control room air through the redundant trains of HEPA and the charcoal filters. The emergency radiation state also initiates pressurization and filtered ventilation of the air supply to the control room.~~ (3)

Outside air is filtered, ~~diluted with building air from the electrical equipment and cable spreading rooms, and~~ added to the air being recirculated from the control room and both are filtered. Pressurization of the control room prevents infiltration of unfiltered air from the surrounding areas of the (3)

3 **INSERT 1**

shares a common filter unit consisting of

3 **INSERT 1A**

Each train includes an independent and redundant filter unit

3 **INSERT 2**

The CREV System is part of the Control Room Ventilation System. During normal unit operation, the Control Room Air Conditioning (CRAC) System portion of the Control Room Ventilation System is operating in the air conditioning mode, which is further described in the Bases of LCO 3.7.11, "Control Room Air Conditioning (CRAC) System."

3 **INSERT 3**

Upon receipt of the same actuating signal(s), the emergency air intake supply to the CREV System is opened to a predetermined position and the CREV fans start. Both outside air and control room air is directed through the CREV System filter unit and directed to the control room to maintain the control room boundary at a positive pressure. This emergency mode of operation is known as the pressurization/cleanup mode.

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V System 1

CREVS
B 3.7.10

BASES

BACKGROUND (continued)

INSERT 4 3

building. ~~The actions taken in the toxic gas isolation state are the same except that the signal switches control room ventilation to an isolation alignment to prevent outside air from entering the control room.~~ 3

~~The air entering the control room is continuously monitored by radiation and toxic gas detectors. One detector output above the setpoint will cause actuation of the emergency radiation state or toxic gas isolation state, as required. The actions of the toxic gas isolation state are more restrictive, and will override the actions of the emergency radiation state.~~ 3

System 0.0625 2

A single train will pressurize ~~the~~ control room to about ~~0.125~~ inches water gauge. The CRE~~ES~~ V operation in maintaining the control room habitable is discussed in ~~the~~ V FSAR, Section ~~6.4~~ 9.10 (Ref. 1). 1 3 2

~~Redundant supply and recirculation trains provide the required filtration should an excessive pressure drop develop across the other filter train.~~ Normally open isolation dampers of the CRAC System ~~are~~ arranged in series pairs so that the failure of one damper to shut will not result in a breach of isolation of the control room boundary. The CRE~~ES~~ V is designed in accordance with Seismic Category I requirements. 3 1

System 1

The CRE~~ES~~ V System is designed to maintain the control room environment for 30 days of continuous occupancy after a Design Basis Accident (DBA) without exceeding a 5 rem ~~whole body dose or its equivalent to any part of the body~~ total effective dose equivalent (TEDE).

V System 1

APPLICABLE SAFETY ANALYSES

INSERT 4A

The CRE~~ES~~ V System components are arranged in redundant, safety related ~~ventilation trains~~. The location of components and ducting within the control room envelope ensures an adequate supply of filtered air to all areas requiring access. The CRE~~ES~~ V System provides airborne radiological protection for the control room operators, as demonstrated by the control room accident dose analyses for the most limiting design basis loss of coolant accident, fission product release presented in the ~~FSAR~~ U FSAR, Chapter ~~15~~ 14 (Ref. 2). 3 1 3 2

~~The analysis of toxic gas releases demonstrates that the toxicity limits are not exceeded in the control room following a toxic chemical release, as presented in Reference 1.~~ 3

V System 2

The worst case single active failure of a component of the CRE~~ES~~ V System, assuming a loss of offsite power, does not impair the ability of the system to perform its design function.

3 **INSERT 4**

A Safety Injection signal from either unit or a Control Room Radiation - High signal will place the CREV System in the pressurization/cleanup mode.

3 **INSERT 4A**

both sharing a common filter unit, ducting, and intake path

V System 1

BASES

APPLICABLE SAFETY ANALYSES (continued)

System

V The CREFS satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii). V 1

LCO

Two ~~independent and redundant~~ CREFS trains are required to be OPERABLE to ensure that at least one is available assuming a single active failure disables the other train. Total system failure could result in exceeding a dose of 5 rem TEDE to the control room operator in the event of a large radioactive release. 1 3 3 3

System

V The CREFS is considered OPERABLE when the individual components necessary to limit operator exposure are OPERABLE in both trains. A V CREFS train is OPERABLE when the associated: 1

a. Fan is OPERABLE; 4

b. HEPA filters and charcoal adsorbers are not excessively restricting flow, and are capable of performing their filtration functions; and 4

c. ~~Heater, demister,~~ ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained. 3

In addition, the control room boundary must be maintained, including the integrity of the walls, floors, ceilings, ductwork, and access doors.

The LCO is modified by a Note allowing the control room boundary to be opened intermittently under administrative controls. For entry and exit through doors, the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for control room isolation is indicated.

System

APPLICABILITY

In MODES 1, 2, 3, 4, ~~[5, and 6,]~~ and during movement of ~~[recently]~~ irradiated fuel assemblies, CREFS must be OPERABLE to control operator exposure during and following a DBA. V 1 1

INSERT 5

the

~~In [MODE 5 or 6], the CREFS is required to cope with the release from the rupture of an outside waste gas tank.~~ 1

V

During movement of ~~[recently]~~ irradiated fuel assemblies, the CREFS System must be OPERABLE to cope with the release from a fuel handling accident ~~involving handling recently irradiated fuel. [The CREFS is only~~ 1 1

Attachment 1, Volume 12, Rev. 1, Page 273 of 504

1 **INSERT 5**

in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

Attachment 1, Volume 12, Rev. 1, Page 274 of 504

V System 1

CREVS
B 3.7.10

BASES

APPLICABILITY (continued)

~~required to be OPERABLE during fuel handling involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [ ] days), due to radioactive decay.]~~ 1

ACTIONS

A.1

When one CREVS train is inoperable, action must be taken to restore OPERABLE status within 7 days. In this condition, the remaining OPERABLE CREVS train is adequate to perform the control room protection function. However, the overall reliability is reduced because a ~~single~~ active failure in the OPERABLE CREVS train could result in loss of CREVS function. The 7 day Completion Time is based on the low probability of a DBA occurring during this time period, and ability of the remaining train to provide the required capability. 7 3 1

B.1

~~- REVIEWER'S NOTE -~~
~~Adoption of Condition B is dependent on a commitment from the licensee to have written procedures available describing compensatory measures to be taken in the event of an intentional or unintentional entry into Condition B.~~ 3

If the control room boundary is inoperable in MODE 1, 2, 3, or 4, the CREVS trains cannot perform their intended functions. Actions must be taken to restore an OPERABLE control room boundary within 24 hours. During the period that the control room boundary is inoperable, appropriate compensatory measures (consistent with the intent of GDC 19) should be utilized to protect control room operators ~~from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature and relative humidity, and physical security~~. Preplanned measures should be available to address these concerns for intentional and unintentional entry into the condition. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of compensatory measures. The 24 hour Completion Time is a typically reasonable time to diagnose, plan and possibly repair, and test most problems with the control room boundary. 1 7 3 7

INSERT 6 1

1 **INSERT 6**

C.1

If the CREV filter unit is inoperable in MODE 1, 2, 3, or 4, the CREV trains cannot perform their intended functions. Action must be taken to restore an OPERABLE filter unit within 24 hours. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period. The 24 hour Completion Time is a typically reasonable time to diagnose, plan and possibly repair, and test most problems with the filter unit.

V System 1

BASES

ACTIONS (continued)

D

C.1 and C.2 1

V 5

In MODE 1, 2, 3, or 4, if the inoperable CREFS train or control room boundary cannot be restored to OPERABLE status within the required Completion Time, the unit must be placed in a MODE that minimizes accident risk. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in 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 unit systems. 1

, or filter unit

E

D.1 and D.2 1

V

INSERT 6A

(In MODE 5 or 6, or) during movement of (recently) irradiated fuel assemblies, if the inoperable CREFS train cannot be restored to OPERABLE status within the required Completion Time, action must be taken to immediately place the OPERABLE CREFS train in the emergency mode. This action ensures that the remaining train is OPERABLE, that no failures preventing automatic actuation will occur, and that any active failure would be readily detected. 1 V 1 3

pressurization/ cleanup

E

An alternative to Required Action D.1 is to immediately suspend activities that could result in a release of radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes risk. This does not preclude the movement of fuel to a safe position. 8 10

(Required Action E.2)

where the LCO does not apply

~~Required Action D.1 is modified by a Note indicating to place the system in the toxic gas protection mode if automatic transfer to toxic gas protection mode is inoperable.~~ 1

F

E.1 1

V

INSERT 6A

(In MODE 5 or 6, or) during movement of (recently) irradiated fuel assemblies, with two CREFS trains inoperable, action must be taken immediately to suspend activities that could result in a release of radioactivity that might enter the control room. This places the unit in a condition that minimizes accident risk. This does not preclude the movement of fuel to a safe position. 1 1

G

F.1 1

V

If both CREFS trains are inoperable in MODE 1, 2, 3, or 4 for reasons other than an inoperable control room boundary (i.e., Condition B), the 1

or filter unit

5 and C

1 **INSERT 6A**

in the containment, auxiliary building, or Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

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BASES

ACTIONS (continued)

CREFS may not be capable of performing the intended function and the unit is in a condition outside the accident analyses. Therefore, LCO 3.0.3 must be entered immediately.

SURVEILLANCE REQUIREMENTS

SR 3.7.10.1

Standby systems should be checked periodically to ensure that they function properly. As the environment and normal operating conditions on this system are not too severe, testing each train once every month provides an adequate check of this system. Monthly heater operations dry out any moisture accumulated in the charcoal from humidity in the ambient air. [Systems with heaters must be operated for ≥ 10 continuous hours with the heaters energized. Systems without heaters need only be operated for ≥ 15 minutes to demonstrate the function of the system.] The 31 day Frequency is based on the reliability of the equipment and the two train redundancy availability.

SR 3.7.10.2

This SR verifies that the required CREFS testing is performed in accordance with the [Ventilation Filter Testing Program (VFTP)]. The [VFTP] includes testing the performance of the HEPA filter, charcoal adsorber efficiency, minimum flow rate, and the physical properties of the activated charcoal. Specific test Frequencies and additional information are discussed in detail in the [VFTP].

SR 3.7.10.3

This SR verifies that each CREFS train starts and operates on an actual or simulated actuation signal. The Frequency of [18] months is specified in Regulatory Guide 1.52 (Ref. 3).

SR 3.7.10.4

This SR verifies the integrity of the control room enclosure, and the assumed inleakage rates of the potentially contaminated air. The control room positive pressure, with respect to potentially contaminated adjacent areas, is periodically tested to verify proper functioning of the CREFS. During the emergency mode of operation, the CREFS is designed to pressurize the control room ≥ [0.125] inches water gauge positive pressure with respect to adjacent areas in order to prevent unfiltered inleakage. The CREFS is designed to maintain this positive pressure with one train at a makeup flow rate of [3000] cfm. [The

1 **INSERT 6B**

Operating the CREV train, with flow through the HEPA filter and charcoal adsorber train,

6 3 **INSERT 7**

The only actuation signal necessary to be verified is the Safety Injection (SI) signal, since the Control Room Radiation – High signal is not assumed in the accident analysis. A Note has been included that states the Surveillance is only required to be met in MODES 1, 2, 3, and 4, since these are the MODES the SI signal is assumed to start the CREV trains. The CREV trains are assumed to be manually started during a fuel handling accident. Operating experience has shown that these components usually pass the Surveillance when performed at the 24 month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint. This test must be performed in such a way to verify that each CREV train has the capability to start from an SI signal from both units.

3 **INSERT 8**

The CREV System flow rate during this test should be $\geq$ 5400 cfm and $\leq$ 6600 cfm.

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V System ①

BASES

SURVEILLANCE REQUIREMENTS (continued)

24

Frequency of ~~[18]~~ months on a STAGGERED TEST BASIS is consistent with ~~the guidance provided in NUREG-0800 (Ref. 4)~~. ② ③ ⑨

INSERT 9

REFERENCES

1. [U]FSAR, Section ~~[6.4]~~. 9.10 ③ ②
2. [U]FSAR, Chapter ~~[15]~~. 14 ③ ②
3. Regulatory Guide 1.52, Rev. [2]. ⑥
4. NUREG-0800, Section 6.4, Rev. 2, July 1981. ⑨

9 **INSERT 9**

industry practice and with other filtration system SRs.

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.10 BASES, CONTROL ROOM EMERGENCY VENTILATION (CREV) SYSTEM

1. Changes are made to reflect those changes made to the Specification.

2. The brackets are removed and the proper plant specific information/value is provided.

3. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

4. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

5. The Bases for ITS SR 3.7.10.2 state that the Ventilation Filter Testing Program includes testing minimum flow rate of the activated charcoal. Testing of the maximum flow rate is added to the testing listed to be consistent with the ITS 5.5 discussion of the VFTP. The maximum flow rate is an appropriate test criteria because of residence times associated with the activated charcoal.

6. ISTS SR 3.7.10.3 verifies that each CREV train actuates on an actual or simulated actuation signal every 18 months. The justification for the 18 month Frequency is that it is specified in Regulatory Guide 1.52. Regulatory Guide 1.52 addresses filtration requirements. The Surveillance verifies mechanical requirements and the Bases have been modified to correctly state the basis of the Frequency.

7. Typographical/grammatical error corrected.

8. Editorial change made for enhanced clarity.

9. ISTS SR 3.7.10.4 Bases references NUREG-0800, Section 6.4, Rev. 2, July 1981 for justification of the Frequency of 18 months on a STAGGERED TEST BASIS. NUREG-0800 does not specify an explicit Frequency for this Surveillance. The Bases have been revised to reflect the appropriate basis.

10. Changes made to be consistent with the Specification.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.10, CONTROL ROOM EMERGENCY VENTILATION (CREV) SYSTEM

There are no specific NSHC discussions for this Specification.

ATTACHMENT 11

ITS 3.7.11, Control Room Air Conditioning (CRAC) System

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.7 PLANT SYSTEMS

CONTROL ROOM AIR CONDITIONING SYSTEM

LIMITING CONDITION FOR OPERATION

trains

LCO 3.7.11 3.7.5.2 Two ~~The~~ control room air conditioning system (CRACS) shall be OPERABLE ~~with two heating and cooling systems~~. L.1 LA.1

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

During movement of irradiated fuel assemblies M.1

ACTION: L.1

ACTION A With one ~~heating and~~ cooling system inoperable, restore the inoperable system to OPERABLE status within ~~7~~ 30 days L.2
ACTION B or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Add proposed ACTIONS A, C, and D M.1

Add proposed ACTION E A.2

SURVEILLANCE REQUIREMENTS

SR 3.7.11.1 4.7.5.2 The control room air conditioning system with one train in operation shall be demonstrated OPERABLE at least once per 12 hours by verifying that the control room air temperature is less than or equal to ~~95~~ 85 °F. M.2

Add proposed SR 3.7.11.2

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ITS

A.1

CONTROL ROOM AIR CONDITIONING SYSTEM

LIMITING CONDITION FOR OPERATION

trains

LCO 3.7.11 3.7.5.2 Two ~~The~~ Control room air conditioning system (CRACS) shall be OPERABLE ~~with two~~ ~~heating and~~ ~~cooling systems~~.

L.1

LA.1

APPLICABILITY: MODES 1, 2, 3, and 4. During movement of irradiated fuel assemblies M.1

ACTION:

L.1

ACTION A With one ~~heating and~~ cooling system inoperable, restore the inoperable system to OPERABLE status within ~~7~~ 30 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following

L.2

ACTION B 30 hours.

Add proposed ACTIONS A, C, and D M.1

SURVEILLANCE REQUIREMENTS Add proposed ACTION E A.2

SR 3.7.11.1 4.7.5.2 The control room air conditioning system with one train in operation shall be demonstrated OPERABLE at least once per 12 hours by verifying that the control room air temperature is less than or equal to ~~95~~ 85°F.

M.2

Add proposed SR 3.7.11.2

DISCUSSION OF CHANGES
ITS 3.7.11, CONTROL ROOM AIR CONDITIONING (CRAC) SYSTEM

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A.2 CTS 3.7.5.2 does not provide an Action for two inoperable CRAC trains. Therefore, CTS 3.0.3 would be required to be entered. ITS 3.7.11 ACTION E requires immediate entry into ITS LCO 3.0.3 when two CRAC trains are inoperable in MODE 1, 2, 3, or 4. This changes the CTS by providing a specific action for two CRAC trains inoperable in MODE 1, 2, 3, or 4.

The purpose of ITS 3.7.11 ACTION E is to require immediate entry into ITS LCO 3.0.3 when two CRAC trains are inoperable. The CTS 3.7.5.2 Action covers the condition for one inoperable CRAC train. If two trains were inoperable, CTS LCO 3.0.3 would be entered since there is no other Action in CTS 3.7.5.2 that fits this condition. This change is acceptable because this same action is required in the CTS. This change is designated as administrative because it does not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

M.1 The CTS does not have any requirements for the CRAC System during movement of irradiated fuel assemblies. ITS 3.7.11 Applicability includes "During movement of irradiated fuel assemblies." ITS 3.7.11 ACTIONS A, C, and D provide compensatory measures when CRAC train(s) are inoperable. This changes CTS by adding an additional Applicability criteria and associated ACTIONS.

The purpose of ITS 3.7.11 is to provide assurance that the CRAC System is OPERABLE when required to perform its function. The system is required during movement of irradiated fuel assemblies. This change is acceptable because it provides this Applicability with associated ACTIONS to provide additional assurance that the CRAC System is available to perform its function when required. This change is designated as more restrictive because it adds an Applicability with associated ACTIONS.

M.2 CTS 4.7.5.2 states "The control room air conditioning system shall be demonstrated OPERABLE at least once per 12 hours by verifying that the control room air temperature is less than or equal to 95°F." However, the CTS does not preclude the Surveillance from being performed with both control room air conditioning (CRAC) trains in operation, nor does the CTS require this verification for each of the control room air conditioning (CRAC) trains; the CTS Surveillance can be satisfied regardless of how many CRAC trains are in operation. ITS SR 3.7.11.1 requires the 12 hour Surveillance to be performed

DISCUSSION OF CHANGES
ITS 3.7.11, CONTROL ROOM AIR CONDITIONING (CRAC) SYSTEM

using only one of the two CRAC trains in operation, and requires the temperature to be ≤ 85°F. ITS SR 3.7.11.2 requires verification that each CRAC train can maintain control room air temperature ≤ 85°F every 31 days. This changes CTS by ensuring only one CRAC train is in operation and changing the temperature limit from 95°F to 85°F during the 12 hour Surveillance, and adding a specific requirement to verify that each CRAC train can maintain control room air temperature ≤ 85°F every 31 days.

The purpose of CTS 4.7.5.2 is to provide assurance that each CRAC train has the capability to remove the assumed heat load in case of a DBA. This change is acceptable because it provides a better measure of whether each CRAC train can perform its safety function. The proposed 85°F temperature limit is consistent with the design of the CRAC System during normal operations. This change is designated as a more restrictive change because CTS 4.7.5.2 is replaced with a more comprehensive Surveillance Requirement.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.7.5.2 states that the CRAC System shall be OPERABLE with two heating and cooling systems. ITS LCO 3.7.11 states that two CRAC trains shall be OPERABLE, but the details of what constitutes an OPERABLE train are moved to the Bases. This changes the CTS by removing details of what constitutes an OPERABLE system to the Bases. The deletion of the heating system requirement is discussed in DOC L.1.

The removal of these details, which are related to the system design capabilities, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement that two CRAC trains be OPERABLE. The details of what a train consists of do not need to appear in the Specification in order for the requirement to apply. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to the Bases to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L.1 *(Category 1 – Relaxation of LCO Requirements)* CTS LCO 3.7.5.2 requires two heating and cooling systems of the CRAC System to be OPERABLE. ITS

LCO 3.7.11 requires two CRAC trains to be OPERABLE. This changes the CTS by deleting the requirement to have two OPERABLE heating systems. The change that relocates the details of what constitutes an OPERABLE CRAC System (i.e., cooling systems) to the Bases is discussed in DOC LA.1.

The purpose of CTS 3.7.5.2 is to ensure two CRAC trains are OPERABLE. This change is acceptable because the LCO requirements continue to ensure that the systems are maintained consistent with the safety analyses and licensing basis. CTS 4.7.5.2 requires the CRAC System to maintain the control room air temperature ≤ 95°F. ITS SR 3.7.11.1 requires verification every 12 hours that with one CRAC train in operation, the control room air temperature is ≤ 85°F. ITS SR 3.7.11.2 requires verification that each CRAC train can maintain control room air temperature ≤ 85°F every 31 days. There is no requirement to maintain a minimum control room air temperature, therefore the removal of the requirement to have two OPERABLE heaters is acceptable. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

L.2 *(Category 3 – Relaxation of Completion Time)* The CTS 3.7.5.2 Action allows 7 days to restore an inoperable CRAC train to OPERABLE status. ITS 3.7.11 ACTION A allows 30 days to restore an inoperable CRAC train to OPERABLE status. This changes the CTS by increasing the time allowed to restore the inoperable components from 7 days to 30 days.

The purpose of CTS 3.7.5.2 is to provide a degree of assurance that the CRAC System can provide cooling when required. This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the allowed Completion Time. The CRAC train is still required to be restored to OPERABLE status, and can perform its function without one air conditioning subsystem. This change is designated as less restrictive because additional time is allowed in the ITS to restore parameters to within the LCO limits than was allowed in the CTS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

CRAC System

CREATCS
3.7.11 ①

CTS

3.7 PLANT SYSTEMS

Air Conditioning (CRAC)

3.7.11 Control Room Emergency Air Temperature Control System (CREATCS) ①

3.7.5.2 LCO 3.7.11 Two CREATCS trains shall be OPERABLE. ①

CRAC

DOC M.1 APPLICABILITY: MODES 1, 2, 3, 4, [5, and 6], ②
and
During movement of [recently] irradiated fuel assemblies. ②

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
Action	A. One CREATCS train inoperable. CRAC	A.1 Restore CREATCS train to OPERABLE status.	30 days	①
Action	B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, 3, or 4.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours	
DOC M.1	C. Required Action and associated Completion Time of Condition A not met [in MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies.	C.1 Place OPERABLE CREATCS train in operation. CRAC OR C.2 Suspend movement of [recently] irradiated fuel assemblies.	Immediately Immediately	① ②
DOC M.1	D. Two CREATCS trains inoperable [in MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies. CRAC	D.1 Suspend movement of [recently] irradiated fuel assemblies.	Immediately	① ②

CTS

CRAC System ~~CREATCS~~ ①
3.7.11

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
CRAC DOC A.2 E. Two ~~CREATCS~~ trains inoperable in MODE 1, 2, 3, or 4.	E.1 Enter LCO 3.0.3.	Immediately ①

SURVEILLANCE REQUIREMENTS with one

SURVEILLANCE		FREQUENCY
4.7.5.2 SR 3.7.11.1 INSERT 1	Verify ~~each~~ CRAC ~~CREATCS~~ train ~~has the capability to remove the assumed heat load.~~	~~[18] months~~ 12 hours ③

INSERT 2 ③

WOG STS	3.7.11 - 2	Rev. 2, 04/30/01

CTS

3 **INSERT 1**

in operation, the control room air temperature is ≤ 85°F.

3 **INSERT 2**

DOC M.2	SR 3.7.11.2	Verify each CRAC train can maintain control room air temperature ≤ 85°F.	31 days

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JUSTIFICATION FOR DEVIATIONS
ITS 3.7.11, CONTROL ROOM AIR CONDITIONING (CRAC) SYSTEM

1. Changes are made (additions, deletions, and/or changes) to the ISTS to reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. The brackets are removed and the proper plant specific information/value is provided.

3. ISTS SR 3.7.11.1 has not been adopted. In its place, the CTS Surveillance concerning verification of control room air temperature, as modified to ensure both trains are tested one at a time and the proper temperature limit is met, has been provided. Verification that each train can independently maintain control room air temperature ≤ 85°F is sufficient to ensure the CRAC trains are OPERABLE.

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Improved Standard Technical Specifications (ISTS) Bases Markup and Justification for Deviations (JFDs)

CRAC System ①

CREATCS
B 3.7.11

B 3.7 PLANT SYSTEMS Air Conditioning (CRAC)

B 3.7.11 Control Room ~~Emergency Air Temperature Control~~ System (CREATCS) ①

BASES CRAC System INSERT 1 ① ②

BACKGROUND

The CREATCS provides temperature control for the control room ~~following isolation of the control room~~.

INSERT 1A

CRAC System humidifier package ② INSERT 2

The CREATCS consists of two independent and redundant trains that provide cooling and heating ~~of recirculated control room air~~. Each train consists of heating coils, ~~cooling coils~~, instrumentation, and controls to provide for control room temperature control. ~~The CREATCS is a subsystem providing air temperature control for the control room.~~ ②

an air handling unit,

CRAC System

The CREATCS is an emergency system, ~~parts of~~ which may also operate during normal unit operations. A single train will provide the required temperature control to maintain the control room ~~between 70°F and~~ ≤ 85°F. The CREATCS operation in maintaining the control room temperature is discussed in the FSAR, Section 6.4 (Ref. 1). ① ③

INSERT3 CRAC System ① ③ 9.10 ③ ①

APPLICABLE SAFETY ANALYSES

The design basis of the CREATCS is to maintain the control room temperature for 30 days of continuous occupancy. ①

CRAC System 97

INSERT 3A

The CREATCS components are arranged in ~~redundant, safety related~~ trains. During ~~emergency operation~~, the CREATCS maintains the temperature ~~between 70°F and~~ ≤ 85°F. A single active failure of a component of the CREATCS, with a loss of offsite power, does not impair the ability of the system to perform its design function. Redundant detectors and controls are provided for control room temperature control. The CREATCS is ~~designed~~ analyzed in accordance with Seismic Category I requirements. The CREATCS is capable of removing sensible and latent heat loads from the control room, which include consideration of equipment heat loads and personnel occupancy requirements, to ensure equipment OPERABILITY. ① ② ③ ① ① ②

CRAC System

The CREATCS satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii). ①

CRAC System

LCO

Two independent and redundant trains of the CREATCS are required to be OPERABLE to ensure that at least one is available, assuming a single failure disabling the other train. Total system failure could result in the equipment operating temperature exceeding limits in the event of an accident. ①

2 **INSERT 1**

is a subsystem of the Control Room Ventilation System and

2 **INSERT 1A**

during normal operations and accident conditions

2 **INSERT 2**

The air handling unit includes a chilled water coil and a fan. Each chilled water coil is provided with chilled water from an associated liquid chiller or cooling directly from the Essential Service Water (ESW) System. Condenser water for each liquid chiller is taken from a different header of the ESW System.

2 **INSERT 3**

during normal operations and $\leq$ 97°F during accident conditions with the Control Room Emergency Ventilation (CREV) System in the pressurization/cleanup mode

2 **INSERT 3A**

accident conditions with the CREV System in the pressurization/cleanup mode

CRAC System ①

CREATCS
B 3.7.11

BASES

LCO (continued)

CRAC System ① within its maximum limit ②

The CREATCS is considered to be OPERABLE when the individual components necessary to maintain the control room temperature are OPERABLE in both trains. These components include the heating and cooling coils and associated temperature control instrumentation. In addition, the CREATCS must be operable to the extent that air circulation can be maintained. ② ① ⑥

INSERT 3B

CRAC System

APPLICABILITY

In MODES 1, 2, 3, 4, (5, and 6,) and during movement of (recently) irradiated fuel assemblies, the CREATCS must be OPERABLE to ensure that the control room temperature will not exceed equipment operational requirements following isolation of the control room. [The CREATCS is only required to be OPERABLE during fuel handling involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [ ] days), due to radioactive decay.] ③ ②

in the containment and auxiliary building

the CRAC System

In MODE 5 or 6, CREATCS may not be required for those facilities that do not require automatic control room isolation. ③ ②

INSERT 3C

ACTIONS

A.1

CRAC

With one CREATCS train inoperable, action must be taken to restore OPERABLE status within 30 days. In this Condition, the remaining OPERABLE CREATCS train is adequate to maintain the control room temperature within limits. However, the overall reliability is reduced because a single failure in the OPERABLE CREATCS train could result in loss of CREATCS function. The 30 day Completion Time is based on the low probability of an event requiring control room isolation, the consideration that the remaining train can provide the required protection, and that alternate safety or nonsafety related cooling means are available. ① ⑥ ① ② ② ④

CRAC

CRAC System

and

of Condition A ①

B.1 and B.2

CRAC

In MODE 1, 2, 3, or 4, if the inoperable CREATCS train cannot be restored to OPERABLE status within the required Completion Time, the unit must be placed in a MODE that minimizes the risk. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in 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 unit systems.

2 **INSERT 3B**

(cooled by either the Chilled Water System or, if the Ultimate Heat Sink temperature is $\leq$ 65°F, the ESW System)

2 **INSERT 3C**

for the mitigation of a postulated event

BASES

ACTIONS (continued)

C.1 and C.2

~~In MODE 5 or 6, or~~ during movement of ~~recently~~ irradiated fuel, if the inoperable ~~CREATCS~~ CRAC train cannot be restored to OPERABLE status within the required Completion Time, the OPERABLE ~~CREATCS~~ CRAC train must be placed in operation immediately. This action ensures that the remaining train is OPERABLE, that no failures preventing automatic actuation will occur, and that active failures will be readily detected. (1) (1) (2)

An alternative to Required Action C.1 is to immediately suspend activities (Required Action C.2) that present a potential for releasing radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes accident risk. This does not preclude the movement of fuel to a safe position. (5)

D.1

~~In MODE 5 or 6, or~~ during movement of ~~recently~~ irradiated fuel assemblies, with two ~~CREATCS~~ CRAC trains inoperable, action must be taken immediately to suspend activities that could result in a release of radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes risk. This does not preclude the movement of fuel to a safe position. (1)

E.1

If both ~~CREATCS~~ CRAC trains are inoperable in MODE 1, 2, 3, or 4, the ~~control room CREATCS~~ CRAC System may not be capable of performing its intended function. Therefore, LCO 3.0.3 must be entered immediately. (1)

SURVEILLANCE REQUIREMENTS

SR 3.7.11.1 and SR 3.7.11.2 (1)

INSERT 4

~~This SR verifies that the heat removal capability of the system is sufficient to remove the heat load assumed in the [safety analyses] in the control room. This SR consists of a combination of testing and calculations. The [18] month Frequency is appropriate since significant degradation of the CREATCS is slow and is not expected over this time period.~~ (1)

REFERENCES

1. U FSAR, Section ~~[6.4]~~ 9.10 (2) (3)

1 **INSERT 4**

These SRs verify that the heat removal capability of each CRAC train is sufficient to maintain control room air temperature $\leq$ 85°F. The 12 hour Frequency of SR 3.7.11.1 is appropriate since significant degradation of the CRAC System is slow and is not expected over this time period. The 31 day Frequency of SR 3.7.11.2 will ensure both CRAC trains are periodically verified and is consistent with the periodic operational test Frequency of the CREV System.

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.11 BASES, CONTROL ROOM AIR CONDITIONING (CRAC) SYSTEM

1. Changes are made to reflect those changes made to the ISTS. Subsequent requirements are renumbered or revised, where applicable, to reflect the changes.
2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases to reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.
3. The brackets are removed and the proper plant specific information/value is provided.
4. Changes are made to reflect the actual ISTS.
5. Editorial change made for enhanced clarity.
6. Typographical/grammatical error corrected.

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.11, CONTROL ROOM AIR CONDITIONING (CRAC) SYSTEM

There are no specific NSHC discussions for this Specification.

Attachment 1, Volume 12, Rev. 1, Page 307 of 504

ATTACHMENT 12

ITS 3.7.12, Engineered Safety Features (ESF) Ventilation System

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

ITS

A.1

PLANT SYSTEMS

3/4.7.6 ESF VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

LA.1

LCO 3.7.12

3.7.6.1 Two ~~independent~~ ESF ventilation system exhaust air filter trains shall be OPERABLE.

Add proposed LCO Note — M.1

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

ACTION A — With one ESF ventilation system exhaust air filter train inoperable, restore the inoperable train to OPERABLE status within 7 days

ACTION C — or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Add proposed ACTION B — M.1

SURVEILLANCE REQUIREMENTS

L.3

4.7.6.1 Each ESF ventilation system exhaust air filter train shall be demonstrated OPERABLE:

SR 3.7.12.1

a. At least once per ~~31~~ 46 days on a STAGGERED TEST BASIS ~~by initiating from the control room, flow through the HEPA filter and charcoal adsorber train and~~ verifying that the train operates for at least 15 minutes.

LA.2

Add proposed SR 3.7.12.2 — A.2

b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system, by:

1. Deleted.

2. Verifying that the charcoal adsorbers remove ≥ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 25,000 cfm ± 10%.

3. Verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 25,000 cfm ± 10%.

See ITS 5.5

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.7 PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4. Verifying within 31 days after removal that a laboratory analysis of a carbon sample from either at least one test canister or at least two carbon samples removed from one of the charcoal adsorbers shows a penetration of less than or equal to 5% for radioactive methyl iodide when the sample is tested in accordance with ASTM D3803-1989, 30°C, 95% R.H., and ≥ 45.5 fpm face velocity. The carbon samples not obtained from test canisters shall be prepared by either:

a) Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed, or

b) Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed.

Subsequent to reinstalling the adsorber tray used for obtaining the carbon sample, the system shall be demonstrated OPERABLE by also verifying that the charcoal adsorbers remove greater than or equal to 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 25,000 cfm plus or minus 10%.

5. Verifying a system flow rate of 25,000 cfm plus or minus 10% during system operation when tested in accordance with ANSI N510-1980.

c. After every 720 hours of charcoal adsorber operation by either:

1. Verifying within 31 days after removal that a laboratory analysis of a carbon sample obtained from a test canister shows a penetration of less than or equal to 5% for radioactive methyl iodide when the sample is tested in accordance with ASTM D3803-1989, 30°C, 95% R.H., and ≥ 45.5 fpm face velocity; or

See ITS 5.5

2. Verifying within 31 days after removal that laboratory analyses of at least two carbon samples shows a penetration of less than or equal to 5% for radioactive methyl iodide when the samples are tested in accordance with ASTM D3803-1989, 30°C, 95% R.H., and ≥ 45.5 fpm face velocity and the samples are prepared by either:

a) Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed, or

A.1

PLANT SYSTEM
SURVEILLANCE REQUIREMENTS (Continued)

b) Emptying a longitudinal sample from an adsorber tray mixing the adsorbent thoroughly, and obtaining sampl least two inches in diameter and with a length equal .. the thickness of the bed.

Subsequent to reinstalling the adsorber tray used for obtaining the carbon sample, the system shall be demonstrated OPERABLE by also verifying that the charcoal adsorbers remove greater than or equal to 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 25,000 cfm plus or minus 10%:

See ITS 5.5

24 L.2

SR 3.7.12.3 d. At least once per ~~18~~ months by:

1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches Water Gauge while operating the ventilation system at a flow rate of 25,000 cfm plus or minus 10%.

See ITS 5.5

2. Deleted.

train actual or simulated actuation signal

SR 3.7.12.3 3. Verifying that the standby ~~fan~~ starts automatically on a ~~Containment Pressure--High-High Signal and directs its exhaust flow through the HEPA filters and charcoal adsorber banks on a Containment Pressure--High-High Signal.~~

LA.3

e. After each complete or partial replacement of HEPA filter band by verifying that the HEPA filter banks remove greater than or equal to 99% of the DOP when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 25,000 cfm plus or minus 10%.

See ITS 5.5

f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove greater than or equal to 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 25,000 cfm plus or minus 10%.

Add proposed SR 3.7.12.4 M.1

ITS

A.1

PLANT SYSTEMS

3/4.7.6 ESF VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

LA.1

LCO 3.7.12 3.7.6.1 Two independent ESF ventilation system exhaust air filter trains shall be OPERABLE.

Add proposed LCO Note — M.1

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

ACTION A / ACTION C — With one ESF ventilation system exhaust air filter train inoperable, restore the inoperable train to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Add proposed ACTION B — M.1

SURVEILLANCE REQUIREMENTS

L.3

4.7.6.1 Each ESF ventilation system exhaust air filter train shall be demonstrated OPERABLE:

46

SR 3.7.12.1 a. At least once per 31 days on a STAGGERED TEST BASIS by initiating from the control room, flow through the HEPA filter and charcoal adsorber train and verifying that the train operates for at least 15 minutes.

LA.2

Add proposed SR 3.7.12.2 — A.2

b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system, by:

1. Deleted.

2. Verifying that the charcoal adsorbers remove ≥ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 25,000 cfm ± 10%.

3. Verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 25,000 cfm ± 10%.

See ITS 5.5

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.7 PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4. Verifying within 31 days after removal that a laboratory analysis of a carbon sample from either at least one test canister or at least two carbon samples removed from one of the charcoal adsorbers shows a penetration of less than or equal to 5% for radioactive methyl iodide when the sample is tested in accordance with ASTM D3803-1989, 30°C, 95% R.H., and ≥ 45.5 fpm face velocity. The carbon samples not obtained from test canisters shall be prepared by either:

   a) Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed, or

   b) Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed.

   Subsequent to reinstalling the adsorber tray used for obtaining the carbon sample, the system shall be demonstrated OPERABLE by also verifying that the charcoal adsorbers remove greater than or equal to 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 25,000 cfm plus or minus 10%. See ITS 5.5

5. Verifying a system flow rate of 25,000 cfm plus or minus 10% during system operation when tested in accordance with ANSI N510-1980.

c. After every 720 hours of charcoal adsorber operation by either:

1. Verifying within 31 days after removal that a laboratory analysis of a carbon sample obtained from a test shows a penetration of less than or equal to 5% for radioactive methyl iodide when the sample is tested in accordance with ASTM D3803-1989, 30°C, 95% R.H., and ≥ 45.5 fpm face velocity; or

2. Verifying within 31 days after removal that laboratory analysis of at least two carbon samples shows a penetration of less than or equal to 5% for radioactive methyl iodide when the samples are tested in accordance with ASTM D3803-1989, 30°C, 95% R.H., and ≥ 45.5 fpm face velocity and the samples are prepared by either:

   a) Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed, or

A.1

ITS

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

b) Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed.

Subsequent to reinstalling the adsorber tray used for obtaining the carbon sample, the system shall be demonstrated OPERABLE by also verifying that the charcoal adsorbers remove greater than or equal to 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 25,000 cfm plus or minus 10%.

See ITS 5.5

L.2

SR 3.7.12.3 d. At least once per ~~18~~ 24 months by:

1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches Water Gauge while operating the ventilation system at a flow rate of 25,000 cfm plus or minus 10%.

See ITS 5.5

2. Deleted.

SR 3.7.12.3 3. Verifying that the standby ~~fan~~ train starts automatically on a ~~Containment Pressure--High-High Signal~~ actual or simulated actuation signal ~~and directs its exhaust flow through the HEPA filters and charcoal adsorber banks on a Containment Pressure--High-High Signal.~~†

LA.3

e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove greater than or equal to 99% of the DOP when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 25,000 cfm plus or minus 10%.

f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove greater than or equal to 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 25,000 cfm plus or minus 10%.

See ITS 5.5

Add proposed SR 3.7.12.4

M.1

~~† The provisions of Technical Specification 4.0.8 are applicable.~~

A.3

DISCUSSION OF CHANGES
ITS 3.7.12, ENGINEERED SAFETY FEATURES (ESF) VENTILATION SYSTEM

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A.2 CTS 4.7.6.1.b specifies the ESF Ventilation System Surveillances to be performed after any structural maintenance on the HEPA filter or charcoal adsorber housings, or following painting, fire, or chemical release in any ventilation zone communicating with the system. CTS 4.7.6.1.c specifies the ESF Ventilation System Surveillances to be performed after every 720 hours of charcoal adsorber operation. CTS 4.7.6.1.d.1 specifies the ESF Ventilation System Surveillance for the pressure drop across the combined HEPA filters and charcoal adsorber banks. CTS 4.7.6.1.e specifies the ESF Ventilation System Surveillance after each complete or partial replacement of a HEPA filter bank. CTS 4.7.6.1.f specifies the ESF Ventilation System Surveillance after each complete or partial replacement of a charcoal adsorber bank. ITS SR 3.7.12.2 requires performing required ESF Ventilation System filter testing in accordance with the Ventilation Filter Testing Program (VFTP). CTS 4.7.6.1 does not include a VFTP, but the requirements that make up the VFTP are being moved to ITS 5.5. This changes CTS by requiring testing in accordance with the VFTP, whose requirements are being moved to ITS 5.5.

This change is acceptable because filter testing requirements are being moved to the VFTP as part of ITS 5.5, and ITS SR 3.7.12.2 references the VFTP for performing these tests. This change is designated as administrative because it does not result in technical changes to the CTS.

A.3 (Unit 2 only) CTS 4.7.6.1.d.3, the automatic actuation test, contains a footnote that states that the provisions of Technical Specification 4.0.8 are applicable. ITS does not include this provision. This changes the Unit 2 CTS by deleting the footnote.

CTS 4.0.8 was deleted from the Unit 2 Technical Specifications in Unit 2 License Amendment 224 dated March 31, 2000. This change is acceptable because CTS 4.0.8 no longer appears in the Unit 2 CTS; thus the footnote referencing CTS 4.0.8 is no longer necessary. This change is designated as administrative because it does not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

M.1 ITS SR 3.7.12.4 states "Verify one ESF Ventilation train can maintain a negative pressure relative to adjacent areas during the post accident mode of operation at a flow rate of $\leq$ 22,500 cfm." The Frequency is 24 months on a STAGGERED TEST BASIS. ITS LCO 3.7.12 includes a Note that states "The ESF enclosure boundary may be opened intermittently under administrative control." ITS 3.7.12 ACTION B requires that when two ESF Ventilation trains are inoperable due to an inoperable ESF enclosure boundary, that the ESF enclosure boundary be restored to OPERABLE status within 24 hours. This changes CTS by adding a requirement that equipment be able to provide a negative pressure relative to adjacent areas inside the ESF enclosure boundary. The ITS LCO 3.7.12 Note allows an exception to the requirements of ITS SR 3.7.12.4. ITS 3.7.12 ACTION B provides a 24 hour Completion Time in case two ESF Ventilation trains are inoperable due to an inoperable ESF enclosure boundary.

The purpose of ITS SR 3.7.12.4, the ITS LCO 3.7.12 Note, and ITS 3.7.12 ACTION B is to provide assurance that the ESF enclosure boundary can support the function of ESF Ventilation System. This change is acceptable because ITS SR 3.7.12.4, the ITS LCO 3.7.12 Note, and ITS 3.7.12 ACTION B provide the appropriate controls, based on unit design, for the ESF Ventilation System to perform its function of maintaining a negative pressure inside the ESF enclosure boundary while filtering air discharged from those areas. This change is designated as more restrictive because a Surveillance Requirement is added to the Technical Specifications.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.7.6.1 states that two "independent" ESF ventilation system exhaust air filter trains shall be OPERABLE. ITS LCO 3.7.12 states that two ESF Ventilation trains shall be OPERABLE. This changes the CTS by removing details that the trains are "independent" from the CTS to the Bases.

The removal of these details, which are related to the system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement that two ESF Ventilation System trains shall be OPERABLE. The details of what a train consists of do not need to appear in the Specification in order for the requirement to apply. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.2 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.7.6.1.a states that each ESF ventilation system exhaust air filter train shall be demonstrated OPERABLE by "initiating, from the control room, flow through the HEPA filter and charcoal adsorber train" and verifying that the train operates for at least 15 minutes. ITS 3.7.12.2 states "Operate each ESF Ventilation System train for ≥ 15 minutes." This changes the CTS by moving the requirement to actuate the train from the control room and the detail of the flow path from the CTS to the Bases.

The removal of these details for performing Surveillance Requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement to operate the ESF Ventilation System train for ≥ 15 minutes. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LA.3 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.7.6.1.d.3 requires verification that the standby fan starts automatically on a Containment Pressure - High-High signal and directs exhaust flow through the HEPA filters and charcoal adsorber banks on the same signal. ITS SR 3.7.12.3 requires verification that each ESF Ventilation train actuates on an actual or simulated actuation signal. This changes the CTS by moving the detail regarding the specific signal used and the flow path from the CTS to the Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement to verify that the ESF Ventilation train actuates on an actual or simulated signal. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

<u>LESS RESTRICTIVE CHANGES</u>

L.1 Not Used.

L.2 *(Category 10 – 18 to 24 Month Surveillance Frequency Change, Non-Channel Calibration Type)* CTS 4.7.6.1.d.3 requires verification that the standby fan starts automatically on a Containment Pressure--High-High Signal and directs its exhaust flow through the HEPA filters and charcoal adsorber banks on a Containment Pressure--High-High Signal. This Surveillance is required to be performed every 18 months. ITS SR 3.7.12.3 requires the verification that each ESF Ventilation train actuates on an actual or simulated actuation signal. This changes the CTS by extending the Frequency of the Surveillance from 18 months (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2) to 24 months (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2).

The purpose of CTS 4.7.6.1.d.3 is to ensure that the ESF Ventilation System trains start automatically upon receiving an automatic actuation signal. This change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical surveillance data and maintenance data sufficient to determine failure modes have not revealed any time-based failure mechanisms. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. Extending the Surveillance test interval for the ESF Ventilation System trains is acceptable because the ESF Ventilation trains are verified to be operating properly throughout the operating cycle by requiring each ESF Ventilation System train be operated for ≥ 15 minutes every 184 days. This testing ensures that a significant portion of the ESF Ventilation circuitry is operating properly and will detect significant failures of this circuitry. Additional justification for extending the Surveillance test interval is that the ESF Ventilation System trains, including the actuating logic, is designed to be single failure, therefore ensuring system availability in the event of a failure of one ESF ventilation train. Based on the inherent system and component reliability and the testing performed during the operating cycle, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 24 month Surveillance Frequency, if performed at the maximum interval allowed by ITS SR 3.0.2 (30 months) does not invalidate any assumptions in the plant licensing basis. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.3 *(Category 9 – Surveillance Frequency Change Using GL 91-04 Guidelines, Non-24 Month Type Change)* CTS 4.7.6.1.a requires the ESF Ventilation System trains be demonstrated OPERABLE at least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filter and charcoal adsorber train and verifying the train operates for at least 15 minutes. ITS SR 3.7.12.1 requires the performance of a similar Surveillance, but at a Frequency of 46 days on a STAGGERED TEST BASIS. This changes the CTS by extending the Frequency of the Surveillances from 31 days (i.e., a maximum of 38.75 days accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2) to 92 days (i.e., a maximum of 115 days accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2). A change to the STAGGERED TEST BASIS definition is discussed in the Discussion of Changes for ITS 1.0.

DISCUSSION OF CHANGES
ITS 3.7.12, ENGINEERED SAFETY FEATURES (ESF) VENTILATION SYSTEM

The purpose of CTS 4.7.6.1.a is to provide a degree of assurance that the ESF Ventilation System trains will operate properly when required. An evaluation of the surveillance interval extension was performed, based on the same approach described in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical surveillance data and maintenance data sufficient to determine failure modes have shown that these tests normally pass their Surveillances at the current Frequency. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. Extending the Surveillance test interval for these Surveillances is acceptable for the following reasons: a) one of the two redundant ESF Ventilation trains is normally operating, directing air flow through the HEPA filter and the roughing filter but bypassing the charcoal adsorber. Therefore the major system components are monitored during normal operation; and b) those portions of the system that are not normally operating have surveillance history that indicates they are highly reliable. In addition, there are two independent and redundant ESF Ventilation trains, each of which is capable of performing the required safety function. Therefore, based on system redundancy, the inherent system and component reliability, and the fact that many of the system components are normally operating, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 46 days on a STAGGERED TEST BASIS Surveillance Frequency (92 days Surveillance Frequency for each train), if performed at the maximum interval allowed by ITS SR 3.0.2 (115 days for each train) does not invalidate any assumptions in the plant licensing basis. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

CTS

ESF Ventilation System ~~ECCS PREACS~~ (1)
3.7.12

INSERT 1

3.7 PLANT SYSTEMS (1)

3.7.12 ~~Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)~~

ESF Ventilation

3.7.6.1 LCO 3.7.12 Two ~~ECCS PREACS~~ trains shall be OPERABLE. (1)

DOC M.1

ESF enclosure

- NOTE -
The ~~ECCS pump room~~ boundary may be opened intermittently under administrative control. (1)

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

ESF Ventilation

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
Action	A. One ~~ECCS PREACS~~ train inoperable.	A.1 Restore ~~ECCS PREACS~~ train to OPERABLE status.	7 days	(1)
DOC M.1	B. Two ~~ECCS PREACS~~ trains inoperable due to inoperable ~~ECCS pump room~~ boundary.	B.1 Restore ~~ECCS pump room~~ boundary to OPERABLE status. ESF enclosure	24 hours	(1) (1)
Action	C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours	

1 **INSERT 1**

Engineered Safety Features (ESF) Ventilation System

ESF Ventilation System ①

CTS

~~ECCS PREACS~~
3.7.12

46 days on a STAGGERED TEST BASIS ④

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY	
4.7.6.1.a	SR 3.7.12.1 Operate each ~~ECCS PREACS~~ ESF Ventilation train for ~~[≥ 10 continuous hours with the heaters operating or (for systems without heaters)]~~ ≥ 15 minutes~~]~~.	~~31~~ days ESF Ventilation System	① ②
4.7.6.1.b 4.7.6.1.c 4.7.6.1.d.1	SR 3.7.12.2 Perform required ~~ECCS PREACS~~ filter testing in accordance with the ~~[~~Ventilation Filter Testing Program (VFTP)~~]~~.	In accordance with the ~~[~~VFTP~~]~~	① ②
4.7.6.1.d.3	SR 3.7.12.3 Verify each ~~ECCS PREACS~~ train actuates on an actual or simulated actuation signal.	~~[18]~~ 24 months	① ②
DOC M.1	SR 3.7.12.4 Verify one ~~ECCS PREACS~~ ESF Ventilation train can maintain a Negative pressure ~~[≤ -0.125] inches water gauge~~ relative to ~~atmospheric pressure~~ adjacent areas during the ~~[~~post accident~~]~~ mode of operation at a flow rate of ≤ ~~[3000]~~ 22,500 cfm.	~~[18]~~ 24 months on a STAGGERED TEST BASIS	① ② ②
	~~SR 3.7.12.5 [Verify each ECCS PREACS filter bypass damper can be closed.~~	~~[18] months]~~	③

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.12, ENGINEERED SAFETY FEATURES (ESF) VENTILATION SYSTEM

1. Changes are made (additions, deletions, and/or changes) to the ISTS to reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. The brackets are removed and the proper plant specific information/value is provided.

3. ISTS SR 3.7.12.5 has been deleted since these valves are automatically closed on a Phase B isolation signal and this capability is tested during the performance of ITS SR 3.7.12.3.

4. The Frequency has been changed to 46 days on a STAGGERED TEST BASIS. The technical justification for this change is provided in the Discussion of Changes.

Improved Standard Technical Specifications (ISTS) Bases Markup and Justification for Deviations (JFDs)

ESF Ventilation System ~~ECCS PREACS~~ (1)
B 3.7.12

B 3.7 PLANT SYSTEMS

B 3.7.12 Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS) INSERT 1 (1)

BASES

BACKGROUND

ESF Ventilation System

The ECCS PREACS filters air from the ~~area of the active ECCS components during the recirculation phase of a loss of coolant accident (LOCA)~~ INSERT 2 (2) (1). The ECCS PREACS, in conjunction with other ~~normally operating~~ systems, also provides ~~environmental control of temperature and humidity~~ adequate cooling (2) in the ~~ECCS pump room area and the lower reaches of the auxiliary building~~ ESF enclosure areas. (1) (2) (2)

roll media roughing filter

ESF Ventilation System

The ECCS PREACS consists of two independent and redundant trains. Each train consists of a ~~heater, a prefilter or demister~~, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), and a fan. Ductwork, valves or dampers, and instrumentation also form part of the system~~, as well as demisters functioning to reduce the relative humidity of the air stream~~. ~~A second bank of HEPA filters follows the adsorber section to collect carbon fines and provide backup in case the main HEPA filter bank fails. The downstream HEPA filter is not credited in the accident analysis, but serves to collect charcoal fines, and to back up the upstream HEPA filter should it develop a leak. The system initiates filtered ventilation of the pump room following receipt of a safety injection (SI) signal.~~ (1) (2) (2)

INSERT 3

~~The ECCS PREACS is a standby system, aligned to bypass the system HEPA filters and charcoal adsorbers. During emergency operations, the ECCS PREACS dampers are realigned, and fans are started to begin filtration. Upon receipt of the actuating Engineered Safety Feature Actuation System signal(s), normal air discharges from the ECCS pump room isolate, and the stream of ventilation air discharges through the system filter trains.~~ The ~~pre~~ roughing filters remove any large particles in the air, and any entrained water droplets present, to prevent excessive loading of the HEPA filters and charcoal adsorbers. (2) (2)

ESF Ventilation System

The ~~ECCS PREACS~~ is discussed in ~~the~~ (u) FSAR, Sections ~~6.5.1, 19.4.5,~~ 9.7.3.1 ~~and 15.6.5~~ (Refs. ~~1, 2, and 3, respectively~~) ~~since it may be used for normal, as well as post accident, atmospheric cleanup functions. The primary purpose of the heaters is to maintain the relative humidity at an acceptable level, consistent with iodine removal efficiencies per Regulatory Guide 1.52 (Ref. 4).~~ (1) (2) (3) (3) (2)

1 **INSERT 1**

Engineered Safety Features (ESF) Ventilation System

2 **INSERT 2**

enclosures for the ESF equipment (containment spray pump, residual heat removal (RHR) pump, safety injection pump, RHR heat exchanger, containment spray heat exchanger, and reciprocating and centrifugal charging pump enclosures) during normal operation, transients, and accidents.

2 **INSERT 3**

The design of each train includes a bypass of the charcoal adsorber section. There are two independent air operated, fail-closed, dampers in the charcoal adsorber section bypass. These dampers are arranged in parallel. Normally, one train is in operation, directing the exhaust air through the roughing and HEPA filters, bypassing the charcoal adsorber section, and discharging it to the unit vent, while the other train is in standby. In the event of a Phase B isolation (Containment Pressure - High High) signal: a) for the standby train, the fan automatically starts (via a containment spray pump closed breaker signal); and b) for both the operating and standby trains, the charcoal adsorber section bypasses are automatically closed and the air is directed through the charcoal adsorber section in addition to the roughing and HEPA filters. The standby train also starts on any train related ESF System pump start signal, or upon receipt of a Safety Injection signal.

ESF Ventilation System (1)

~~ECCS PREACS~~
B 3.7.12

BASES

APPLICABLE SAFETY ANALYSES

The design basis of the ~~ECCS PREACS~~ ESF Ventilation System is established by the large break LOCA. The system evaluation assumes ~~a passive failure of the ECCS outside containment, such as an SI pump seal failure,~~ INSERT 4 during the recirculation mode. In such a case, the system limits radioactive release to within the 10 CFR 100 (Ref. ~~8~~ 2) limits~~, or the NRC staff approved licensing basis (e.g., a specified fraction of Reference 8 limits)~~ INSERT 4A. The analysis of the effects and consequences of a large break LOCA is presented in Reference ~~8~~ 4. ~~The ECCS PREACS also actuates following a small break LOCA, in those cases where the ECCS goes into the recirculation mode of long term cooling, to clean up releases of smaller leaks, such as from valve stem packing.~~ (1) (2) (2) (2) (9)

~~Two types of system failures are considered in the accident analysis: complete loss of function, and excessive LEAKAGE. Either type of failure may result in a lower efficiency of removal for any gaseous and particulate activity released to the ECCS pump rooms following a LOCA.~~ (9)

The ~~ECCS PREACS~~ ESF Ventilation System satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii). (1)

LCO

Two independent and redundant trains of the ~~ECCS PREACS~~ ESF Ventilation System are required to be OPERABLE to ensure that at least one is available, assuming that a single failure disables the other train coincident with loss of offsite power. Total system failure could result in the atmospheric release from the ~~ECCS pump room~~ ESF enclosure areas exceeding 10 CFR 100 limits in the event of a Design Basis Accident (DBA). (1) (1)

~~ECCS PREACS~~ ESF Ventilation System is considered OPERABLE when the individual components necessary to maintain the ~~ECCS pump room~~ ESF enclosure areas filtration are OPERABLE in both trains. (1) (2)

An ~~ECCS PREACS~~ ESF Ventilation System train is considered OPERABLE when its associated: (1)

a. Fan is OPERABLE~~;~~ (4) ;

b. HEPA filter and charcoal adsorbers are not excessively restricting flow, and are capable of performing their filtration functions~~; and~~ ; (4)

c. ~~Heater, demister,~~ ductwork, valves, and dampers are OPERABLE and air ~~circulation~~ flow can be maintained. (2) (1)

INSERT 4B

The LCO is modified by a Note allowing the ~~ECCS pump room~~ ESF enclosure boundary to be opened intermittently under administrative controls. For entry and exit through doors, the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these (2)

2 **INSERT 4**

leakage from the Emergency Core Cooling System (ECCS) and Containment Spray System components

2 **INSERT 4A**

and to 5 rem total effective dose equivalent (TEDE) for control room operators (Ref. 3)

2 **INSERT 4B**

In addition, a train is allowed to be operating since, if a loss of power occurs, it will automatically restart when power is restored.

ESF Ventilation System

~~ECCS PREACS~~ (1)
B 3.7.12

BASES

LCO (continued)

controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for ~~ECCS pump room~~ ESF enclosure isolation is indicated. (1)

APPLICABILITY — In MODES 1, 2, 3, and 4, the ~~ECCS PREACS~~ ESF Ventilation System is required to be OPERABLE consistent with the OPERABILITY requirements of the ECCS. (1)

In MODE 5 or 6, the ~~ECCS PREACS~~ ESF Ventilation System is not required to be OPERABLE since the ECCS is not required to be OPERABLE. (1)

ACTIONS — A.1

With one ~~ECCS PREACS~~ ESF Ventilation train inoperable, action must be taken to restore OPERABLE status within 7 days. During this time, the remaining OPERABLE train is adequate to perform the ~~ECCS PREACS~~ ESF Ventilation System function. (1) (1)

The 7 day Completion Time is appropriate because the risk contribution is less than that for the ECCS (72 hour Completion Time), and this system is not a direct support system for the ECCS. The 7 day Completion Time is based on the low probability of a DBA occurring during this time period, and ability of the remaining train to provide the required capability.

~~Concurrent failure of two ECCS PREACS trains would result in the loss of functional capability; therefore, LCO 3.0.3 must be entered immediately.~~ (10)

B.1

~~-REVIEWER'S NOTE -~~
~~Adoption of Condition B is dependent on a commitment from the licensee to have written procedures available describing compensatory measures to be taken in the event of an intentional or unintentional entry into Condition B.~~ (2)

If the ~~ECCS pump room~~ ESF enclosure boundary is inoperable, the ~~ECCS PREACS~~ ESF Ventilation trains cannot perform their intended functions. Actions must be taken to restore an OPERABLE ~~ECCS pump room~~ boundary within 24 hours. During the period that the ~~ECCS pump room~~ boundary is inoperable, appropriate compensatory measures consistent with the intent, as (1)

ESF Ventilation System (1)

~~ECCS PREACS~~
B 3.7.12

BASES

ACTIONS (continued)

applicable, of GDC 19, 60, 64 and 10 CFR Part 100~~)~~ should be utilized to protect plant personnel from potential hazards ~~such as radioactive contamination, toxic chemicals, smoke, temperature and relative humidity, and physical security~~. Preplanned measures should be available to address these concerns for intentional and unintentional entry into the condition. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of compensatory measures. The 24 hour Completion Time is a typically reasonable time to diagnose, plan and possibly repair, and test most problems with the ~~ECCS pump room~~ ESF enclosure boundary. (3) (2) (1)

C.1 and C.2

If the ~~ECCS PREACS~~ ESF Ventilation train or ~~ECCS pump room~~ ESF enclosure boundary cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in 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 unit systems. (1)

SURVEILLANCE REQUIREMENTS

SR 3.7.12.1

Standby systems should be checked periodically to ensure that they function properly. As the environment and normal operating conditions on this system are not severe, testing each train once ~~a month~~ every 92 days provides an adequate check on this system. ~~Monthly heater operations dry out any moisture that may have accumulated in the charcoal from humidity in the ambient air. [Systems with heaters must be operated ≥ 10 continuous hours with the heaters energized. Systems without heaters need only be operated~~ for ≥ 15 minutes ~~to~~ demonstrate the function of the ~~system~~ train. ~~]~~ The ~~31 day~~ 46 days on a STAGGERED TEST BASIS Frequency is based on the known reliability of equipment and the ~~two~~ train redundancy available. INSERT 4C (1) (2) (5) (1) (2) (3)

SR 3.7.12.2

This SR verifies that the required ~~ECCS PREACS~~ ESF Ventilation System testing is performed in accordance with the ~~[~~Ventilation Filter Testing Program (VFTP)~~]~~. The ~~[~~VFTP~~]~~ includes testing HEPA filter performance, charcoal adsorbers efficiency, minimum and maximum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). (1) (2) (5)

2 **INSERT 4C**

Operating the ESF Ventilation train, by initiating from the control room flow through the HEPA filter and charcoal adsorber train,

ESF Ventilation System ①

~~ECCS PREACS~~
B 3.7.12

BASES

SURVEILLANCE REQUIREMENTS (continued)

Specific test Frequencies and additional information are discussed in detail in the ~~[~~VFTP~~]~~. ③

SR 3.7.12.3

ESF Ventilation

This SR verifies that each ~~ECCS PREACS~~ train starts and operates on an actual or simulated actuation signal. ~~The [18] month Frequency is consistent with that specified in Reference 4.~~ ① ③

INSERT 5 ⑥

SR 3.7.12.4

ESF

ESF enclosure

ESF enclosure

This SR verifies the integrity of the ~~ECCS pump room~~ enclosure. The ability of the ~~ECCS pump room~~ to maintain a negative pressure, with respect to potentially uncontaminated adjacent areas, is periodically tested to verify proper functioning of the ~~ECCS PREACS~~. During the ~~[~~post accident~~]~~ mode of operation, the ~~ECCS PREACS~~ is designed to maintain a slight negative pressure in the ~~ECCS pump room~~, with respect to adjacent areas, to prevent unfiltered ~~LEAKAGE~~. ~~The ECCS PREACS is designed to maintain a ≤ [-0.125] inches water gauge relative to atmospheric pressure at a flow rate of [3000] cfm from the ECCS pump room.~~ The Frequency of ~~[18]~~ months ~~is consistent with the guidance provided in NUREG-0800, Section 6.5.1 (Ref. 6).~~ ① ① ③

ESF Ventilation System

at a flowrate ≤ 22,500 cfm

24

on a STAGGERED TEST BASIS

INSERT 6 ⑦ ⑧

~~This test is conducted with the tests for filter penetration; thus, an [18] month Frequency on a STAGGERED TEST BASIS is consistent with that specified in Reference 4.~~

~~[SR 3.7.12.5~~

~~Operating the ECCS PREACS bypass damper is necessary to ensure that the system functions properly. The OPERABILITY of the ECCS PREACS bypass damper is verified if it can be specified in Reference 4.]~~ ①

REFERENCES

1. ~~[~~4~~]~~FSAR, Section ~~[6.5.1]~~ 9.9.3.1 ② ③
2. ~~FSAR, Section [9.4.5].~~ ②
~~3~~. 4 ~~[~~U~~]~~FSAR, Section ~~[15.6.5]~~ 14.3.5.19 ③ ②
~~4. Regulatory Guide 1.52 (Rev. 2)~~ ⑥
~~6~~ 2. 10 CFR 100.11. ②
5. 10 CFR 50, Appendix A, GDC 19.

7 **INSERT 5**

One ESF Ventilation train is normally operating with flow bypassing the charcoal adsorber section. This test confirms that each train, when in standby, starts upon receipt of a Containment Pressure - High High signal and that the exhaust flow can be directed through the entire filter unit including the HEPA filter and charcoal adsorber section. Operating experience has shown that these components usually pass the Surveillance when performed at the 24 month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.

6 **INSERT 6**

industry practice and with other filtration system SRs.

ESF Ventilation System ①

~~ECCS PREACS~~
B 3.7.12

BASES

REFERENCES (continued)

6. NUREG-0800, Section 6.5.1, Rev. 2, July 1981. ⑦

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JUSTIFICATION FOR DEVIATIONS
ITS 3.7.12 BASES, ENGINEERED SAFETY FEATURES (ESF) VENTILATION SYSTEM

1. Changes are made to reflect those changes made to the ISTS. Subsequent requirements are renumbered or revised, where applicable, to reflect the changes.

2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases to reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. The brackets are removed and the proper plant specific information/value is provided.

4. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

5. Testing of the maximum flow rate is added to the testing of the activated charcoal listed in the Bases for ITS SR 3.7.12.2 as part of the Ventilation Filter Testing Program. Adding the maximum flow rate is consistent with the ITS 5.5 discussion of the VFTP. The maximum flow rate is an appropriate test criteria because of residence times associated with the activated charcoal.

6. ISTS SR 3.7.12.3 verifies that each train actuates on an actual or simulated actuation signal every 18 months. The justification for the 18 month Frequency is that it is specified in Regulatory Guide 1.52. Regulatory Guide 1.52 addresses filtration requirements. This Surveillance verifies mechanical requirements. The Bases has been modified to correctly state the basis of the Frequency.

7. ISTS SR 3.7.12.4 Bases reference NUREG-0800, Section 6.5.1, Rev. 2, July 1981 for justification of the Frequency of 18 months. In addition, the Bases state that the test is performed with the tests for filter penetration; thus an 18 month Frequency on a STAGGERED TEST BASIS is consistent with that specified in Reference 4 (Regulatory Guide 1.52). NUREG-0800 does not specify an explicit Frequency for this Surveillance. The Bases have been revised to reflect the appropriate basis consistent with the same type of Surveillance in other places in the Bases.

8. Changes made to be consistent with the Specification.

9. While the ESF Ventilation System may actuate automatically following a small break LOCA, the CNP small break LOCA analysis does not credit actuation of the ESF Ventilation System to mitigate the consequences of the accident. Therefore, the last sentence in the first paragraph of the Applicable Safety Analyses (ASA) section of the Bases has been deleted. In addition, the CNP safety analyses do not assume loss of the entire ESF Ventilation System, and do not assume that excessive LEAKAGE would affect the analyses. (Note: LEAKAGE is a defined term and is not related to leakage in the ECCS rooms.) The safety analyses assume a given leakage into the ECCS rooms, and that the ESF Ventilation System meets the accident analysis requirements. Therefore, the second paragraph of the ASA section of the Bases has been deleted.

10. This statement has been deleted since it is not applicable to ACTION A; it is describing what to do if none of the ACTIONS of ISTS 3.7.12 apply. This statement is essentially duplicative of the ACTIONS of ISTS LCO 3.0.3. Thus, for consistency

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.12 BASES, ENGINEERED SAFETY FEATURES (ESF) VENTILATION SYSTEM

with many other ISTS Bases, which do not include this type of information, this statement has been deleted.

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.12, ENGINEERED SAFETY FEATURES (ESF) VENTILATION SYSTEM

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 13

ITS 3.7.13, Fuel Handling Area Exhaust Ventilation (FHAEV) System

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

ITS 3.7.13

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.9 REFUELING OPERATIONS

STORAGE POOL VENTILATION SYSTEM** A.4

LIMITING CONDITION FOR OPERATION One train and in operation M.1

LCO 3.7.13 3.9.12 ~~The~~ spent fuel storage pool exhaust ventilation system shall be OPERABLE.

APPLICABILITY: ~~Whenever irradiated fuel is in the storage pool~~ During movement of irradiated fuel assemblies in the auxiliary building L.1

ACTION: irradiated fuel in the auxiliary building or in operation M.1

ACTION A a. With no fuel storage pool exhaust ventilation system OPERABLE, suspend all operations involving movement of ~~fuel within the storage pool~~ ~~or crane operation with loads over the storage pool~~ ~~until at least one spent fuel storage pool exhaust ventilation system is restored to OPERABLE status~~.* L.2 A.2

ACTIONS Note b. The provisions of Specification 3.0.3 are not applicable. M.1

SURVEILLANCE REQUIREMENTS Add proposed SR 3.7.13.1 A.4

SR 3.7.13.2 4.9.12 The above required fuel storage pool ventilation system train shall be demonstrated OPERABLE: L.5

a. At least once per ~~31~~ 92 days ~~by initiating flow through the HEPA filter and charcoal adsorber train and verifying that the train operates for at least 15 minutes.~~ LA.1 Add proposed SR 3.7.13.3 A.3

b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system, by:

1. Deleted

2. Verifying that the charcoal adsorbers remove ≥ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the exhaust ventilation system at a flow rate of 30,000 cfm ± 10%.

See ITS 5.5

auxiliary building L.3

LCO 3.7.13 Note * The ~~crane bay roll-up door and the south door of the auxiliary building crane bay~~ may be opened under administrative control during movement of fuel within the storage pool ~~or crane operation with loads over the storage pool~~. L.2

** ~~Shared system with D.C. COOK - UNIT 2.~~ LA.2

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.9 REFUELING OPERATIONS

SURVEILLANCE REQUIREMENTS (Continued)

3. Verifying that the HEPA filter banks remove greater than or equal to 99% of the DOP when they are tested in-place in accordance with ANSI N510-1980 while operating the exhaust ventilation system at a flow rate of 30,000 cfm plus or minus 10%.

4. Verifying within 31 days after removal that a laboratory analysis of a carbon sample from either at least one test canister or at least two carbon samples removed from one of the charcoal adsorbers shows a penetration of less than or equal to 5% for radioactive methyl iodide when the sample is tested in accordance with ASTM D3803-1989, 30°C, 95% R.H., and $\geq$ 46.8 fpm face velocity. The carbon samples not obtained from test canisters shall be prepared by either:

(a) Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed, or

(b) Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed.

Subsequent to reinstalling the adsorber tray used for obtaining the carbon sample, the system shall be demonstrated OPERABLE by also verifying that the charcoal adsorbers remove greater than or equal to 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 30,000 cfm plus or minus 10%.

See ITS 5.5

5. Verifying a system flow rate of 30,000 cfm plus or minus 10% during system operation when tested in accordance with ANSI N510-1980.

c. After every 720 hours of charcoal adsorber operation by either:

1. Verifying within 31 days after removal that a laboratory analysis of a carbon sample obtained from a test canister shows a penetration of less than or equal to 5% for radioactive methyl iodide when the sample is tested in accordance with ASTM D3803-1989, 30°C, 95% R.H., and $\geq$ 46.8 fpm face velocity; or

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ITS

A.1

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
REFUELING OPERATIONS

VEILLANCE REQUIREMENTS (Continued)

2. Verifying within 31 days after removal that laboratory analysis of at least two carbon samples shows a penetration of less than or equal to 5% for radioactive methyl iodide when the samples are tested in accordance with ASTM D3803-1989, 30°C, 95% R.H., and ≥ 46.8 fpm face velocity and the samples are prepared by either:

(a) Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed, or

(b) Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed.

Subsequent to reinstalling the adsorber tray used for obtaining the carbon sample, the system shall be demonstrated OPERABLE by also verifying that the charcoal adsorbers remove greater than or equal to 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 30,000 cfm plus or minus 10%.

See ITS 5.5

SR 3.7.13.4, SR 3.7.13.5

d. At least once per ~~18~~ 24 months by: L.4

1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than or equal to 6 inches Water Gauge while operating the exhaust ventilation system at a flow rate of 30,000 cfm plus or minus 10%.

See ITS 5.5

2. Deleted.

SR 3.7.13.4

3. Verifying that on a ~~high radiation~~ actual or simulated signal, the FHAEV System actuates ~~the system automatically directs its exhaust flow through the charcoal adsorber banks and automatically shuts down the storage pool ventilation system supply fans.~~ LA.1 M.1 LA.1

SR 3.7.13.5

4. Verifying that the required exhaust ventilation system train maintains the spent fuel storage pool area at a negative pressure of greater than or equal to 1/8 inches Water Gauge relative to the outside atmosphere during system operation with flow rate ≤ 27,000 cfm. A.4 M.2 A.4

ITS

A.1

REFUELING OPERATIONS

SURVEILLANCE REQUIREMENTS (Continued)

e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 30,000 cfm ± 10%.

f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove ≥ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 30,000 cfm ± 10%.

See ITS 5.5

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.9 REFUELING OPERATIONS

A.4

STORAGE POOL VENTILATION SYSTEM**

M.1

LIMITING CONDITION FOR OPERATION

One

train

and in operation

LCO 3.7.13 3.9.12 ~~The~~ spent fuel storage pool exhaust ventilation system shall be OPERABLE.

L.1

APPLICABILITY: ~~Whenever irradiated fuel is in the storage pool.~~ During movement of irradiated fuel assemblies in the auxiliary building

ACTION:

M.1

irradiated fuel in the auxiliary building

or in operation

ACTION A a. With no fuel storage pool exhaust ventilation system OPERABLE, suspend all operations involving movement of ~~fuel within the storage pool~~ or crane operation with loads over the storage pool ~~until at least one spent fuel storage pool exhaust ventilation system is restored to OPERABLE status.~~ *

L.2

A.2

ACTIONS Note b. The provisions of Specification 3.0.3 are not applicable.

Add proposed SR 3.7.13.1

M.1

SURVEILLANCE REQUIREMENTS

train

A.4

L.5

SR 3.7.13.2 9.12 The above required fuel storage pool ventilation system shall be demonstrated OPERABLE:

92

a. At least once per ~~31~~ days ~~by initiating flow through the HEPA filter and charcoal adsorber train~~ and verifying that the train operates for at least 15 minutes.

LA.1

Add proposed SR 3.7.13.3

A.3

b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system, by:

1. Deleted.

2. Verifying that the charcoal adsorbers remove ≥ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the exhaust ventilation system at a flow rate of 30,000 cfm ± 10%.

See ITS 5.5

auxiliary building

L.3

LCO 3.7.13 Note * The ~~crane bay roll-up door and the south door of the auxiliary building crane bay~~ may be opened under administrative control during movement of fuel within the storage pool or crane operation with loads over the storage pool.

L.2

** ~~Shared system with D. C. COOK - UNIT 1.~~

LA.2

A.1

ITS

SURVEILLANCE REQUIREMENTS (Continued)

3. Verifying that the HEPA filter banks remove greater than or equal to 99% of the DOP when they are tested in-place in accordance with ANSI N510-1980 while operating the exhaust ventilation system at a flow rate of 30,000 cfm plus or minus 10%.

4. Verifying within 31 days after removal that a laboratory analysis of a carbon sample from either at least one test canister or at least two carbon samples removed from one of the charcoal adsorbers shows a penetration of less than or equal to 5% for radioactive methyl iodide when the sample is tested in accordance with ASTM D3803-1989, 30°C, 95% R.H., and ≥ 46.8 fpm face velocity. The carbon samples not obtained from test canisters shall be prepared by either:

(a) Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed, or

(b) Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed.

Subsequent to reinstalling the adsorber tray used for obtaining the carbon sample, the system shall be demonstrated OPERABLE by also verifying that the charcoal adsorbers remove greater than or equal to 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 30,000 cfm plus or minus 10%.

5. Verifying a system flow rate of 30,000 cfm plus or minus 10% during system operation when tested in accordance with ANSI N510-1980.

c. After every 720 hours of charcoal adsorber operation by either:

1. Verifying within 31 days after removal that a laboratory analysis of a carbon sample obtained from a test canister shows a penetration of less than or equal to 5% for radioactive methyl iodide when the sample is tested in accordance with ASTM D3803-1989, 30°C, 95% R.H., and ≥ 46.8 fpm face velocity.

See ITS 5.5

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ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.9 REFUELING OPERATIONS

SURVEILLANCE REQUIREMENTS (Continued)

2. Verifying within 31 days after removal that laboratory analysis of at least two carbon samples shows a penetration of less than or equal to 5% for radioactive methyl iodide when the samples are tested in accordance with ASTM D3803-1989, 30°C, 95% R.H., and ≥ 46.8 fpm face velocity and the samples are prepared by either:

(a) Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed, or

(b) Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed.

Subsequent to reinstalling the adsorber tray used for obtaining the carbon sample, the system shall be demonstrated OPERABLE by also verifying that the charcoal adsorbers remove greater than or equal to 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 30,000 cfm plus or minus 10%.

See ITS 5.5

SR 3.7.13.4, SR 3.7.13.5 — d. At least once per ~~18~~ 24 months by: L.4

1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than or equal to 6 inches Water Gauge while operating the exhaust ventilation system at a flow rate of 30,000 cfm plus or minus 10%.

See ITS 5.5

2. Deleted.

SR 3.7.13.4 — 3. Verifying that the FHAEV System actuates on a actual or simulated ~~high-radiation~~ signal, ~~the system automatically directs its exhaust flow through the charcoal adsorber banks and automatically shuts down the storage pool ventilation system supply fans.~~ LA.1 M.1 LA.1

SR 3.7.13.5 — 4. Verifying that the required exhaust ventilation system train maintains the spent fuel storage pool area at a negative pressure of greater than or equal to 1/8 inches Water Gauge relative to the outside atmosphere during system operation. with flow rate ≤ 27,000 cfm A.4 M.2 A.4

A.1

ITS

REFUELING OPERATIONS

SURVEILLANCE REQUIREMENTS (Continued)

e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 30,000 cfm ± 10%.

f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove ≥ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 30,000 cfm ± 10%.

See ITS 5.5

DISCUSSION OF CHANGES
ITS 3.7.13, FUEL HANDLING AREA EXHAUST VENTILATION (FHAEV) SYSTEM

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A.2 CTS 3.9.12 Action a states that with no FHAEV System OPERABLE, suspend all operations involving movement of fuel within the storage pool until at least one FHAEV System is restored to OPERABLE status. ITS 3.7.13 ACTION A states that with the required FHAEV train inoperable or not in operation to suspend movement of irradiated fuel assemblies within the auxiliary building. This changes the CTS by deleting the statement "until at least one FHAEV System is restored to OPERABLE status." The change that adds "or not in operation" is discussed in DOC M.1.

The purpose of CTS 3.9.12 Action a is to suspend fuel handling activities until the FHAEV System is restored to OPERABLE status. ITS LCO 3.0.2 states that upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met and if the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required unless otherwise stated. Since the requirement of CTS 3.9.12 Action a is stated in ITS LCO 3.0.2, and ITS LCO 3.0.2 is applicable to ITS 3.7.13, the explicit statement in the Required Actions is not necessary. This change is designated as administrative because it does not result in a technical change to the CTS.

A.3 CTS 4.9.12.b specifies the FHAEV System Surveillances to be performed after any structural maintenance on the HEPA filter or charcoal adsorber housings, or following painting, fire or chemical release in any ventilation zone communicating with the system. CTS 4.9.12.c specifies the FHAEV System Surveillances to be performed after every 720 hours of charcoal adsorber operation. CTS 4.9.12.d.1 specifies the FHAEV System Surveillance for the pressure drop across the combined HEPA filters and charcoal adsorber banks. CTS 4.9.12.e specifies the FHAEV System Surveillance after each complete or partial replacement of a HEPA filter bank. CTS 4.9.12.f specifies the FHAEV System Surveillance after each complete or partial replacement of a charcoal adsorber bank. ITS SR 3.7.13.3 requires performing required FHAEV System filter testing in accordance with the Ventilation Filter Testing Program (VFTP). CTS 4.9.12 does not include a VFTP, but the requirements that make up the VFTP are being moved to ITS 5.5. This changes the CTS by requiring testing in accordance with the VFTP, whose requirements are being moved to ITS 5.5.

This change is acceptable because filter testing requirements are being moved to the VFTP as part of ITS 5.5, and ITS SR 3.7.13.3 references the VFTP for performing these tests. This change is designated as administrative because it does not result in technical changes to the CTS.

DISCUSSION OF CHANGES
ITS 3.7.13, FUEL HANDLING AREA EXHAUST VENTILATION (FHAEV) SYSTEM

A.4 CTS 3.9.12 requires the spent fuel storage pool exhaust ventilation system to be OPERABLE and CTS 4.9.12 requires the spent fuel storage pool exhaust ventilation system to be demonstrated OPERABLE. ITS 3.7.13 requires one FHAEV train to be OPERABLE and in operation and the ITS 3.7.13 Surveillances only require one FHAEV train to be verified OPERABLE. This changes the CTS by clarifying that only one of the FHAEV trains is required to be OPERABLE. The change to requiring the FHAEV train to be in operation is discussed in DOC M.1.

The purpose of CTS 3.9.12 is to ensure that the FHAEV System is OPERABLE such that it meets its design safety function. CTS 3.9.12 does not specify that both trains be OPERABLE, only that the System be OPERABLE. For the FHAEV System to be OPERABLE, only one of the two trains is required. Also, the FHAEV System only includes one filter train, which is common to both FHAEV trains. Furthermore, CTS 3.9.12 Action a provides actions when "no" fuel storage pool exhaust ventilation system is OPERABLE, and requires theses action until "at least one" fuel storage pool exhaust ventilation system is restored to OPERABLE status. Additionally, CTS 4.9.12 requires the "above required" spent fuel storage pool exhaust ventilation system be demonstrated OPERABLE. These CTS requirements describe the current licensing basis that specifies only one of the two FHAEV trains are required to be OPERABLE for the FHAEV System to be considered OPERABLE. Therefore, this change is designated as administrative because it is only clarifying the current licensing basis requirement and does not result in a technical change to the CTS.

MORE RESTRICTIVE CHANGES

M.1 CTS LCO 3.9.12 requires the spent fuel storage pool exhaust ventilation system to be OPERABLE. CTS 3.9.12 Action a specifies the requirements when no spent fuel storage pool exhaust ventilation system is OPERABLE. CTS 4.9.12.d.3 requires verification that the spent fuel storage pool exhaust ventilation system automatically directs its exhaust flow through the charcoal adsorber banks and automatically shuts down the storage pool ventilation system supply fans. ITS 3.7.13 requires one FHAEV train to be OPERABLE "and in operation." ITS 3.7.13 ACTION A specifies the compensatory actions for a required FHAEV train that is not in operation. ITS SR 3.7.13.1 requires the verification that the required FHAEV train is operating every 12 hours. ITS SR 3.7.13.4 requires verification that the required FHAEV train actuates on an actual or simulated actuation signal. This changes the CTS by adding the requirement that the required FHAEV train must be in operation, adds an ACTION to take if the required FHAEV train is not in operation (ITS 3.7.13 ACTION A), adds a new Surveillance Requirement to periodically verify the required FHAEV train is in operation, and deletes a Surveillance Requirement to verify the train automatically directs its exhaust flow through the charcoal adsorber banks on an actuation signal.

The purpose of CTS 3.9.12 is to ensure the FHAEV System is OPERABLE such that it meets its design safety function. Upon receipt of a high radiation signal in the area of the spent fuel pool the bypass valves around the charcoal filter section receive a close signal to ensure the exhaust flow passes through the charcoal filter section. In addition, the fuel handling supply fans trip upon receipt of the same high radiation signal. However, the FHAEV System fans do not start on receipt of a signal. Therefore, the fuel handling accident analysis assumes one train of the FHAEV System is operating prior to the accident. In addition, it has been determined that the bypass valves do not close fast enough to prevent all of the radioactive gases from a fuel handling accident from being released to the atmosphere without being passed through the charcoal filters assumed by the off site dose calculations. Therefore, the term "in operation" requires all charcoal filter section bypass valves to be closed. This change is acceptable because it will help ensure the FHAEV System is in a condition to mitigate the consequences of a fuel handling accident. The change has been designated as more restrictive because it requires one train of the FHAEV System to be operating.

M.2 CTS 4.9.12.d.4 requires the verification that the FHAEV System maintains the spent fuel storage pool area at a negative pressure of greater than or equal to 1/8 inch W.G. relative to the outside atmosphere during system operation. ITS SR 3.7.13.5 requires the verification that one FHAEV fan can maintain a pressure of > 0.125 inches of vacuum water gauge with respect to atmospheric pressure during the accident mode of operation at a flow rate of ≤ 27,000 cfm. This changes the CTS by adding the flow rate at which the test must be performed.

The purpose of CTS 4.9.12.d.4 is to ensure the FHAEV System can maintain the spent fuel pool storage area at a negative pressure relative to the outside atmosphere. The current Surveillance does not specify the flow rate at which the test should be performed. This change is acceptable because it will help ensure the test is performed at the proper flow rate. The change has been designated as more restrictive because it explicitly specifies the flow rate at which to perform the test.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.9.12.a states that the required FHAEV System shall be demonstrated OPERABLE by initiating flow through the HEPA filter and charcoal adsorber train and verifying that the train operates for a least 15 minutes. CTS 4.9.12.d.3 requires, in part, the verification that on a high-radiation signal the system automatically shuts down the storage pool ventilation system supply fans. ITS SR 3.7.13.2 states to operate the required FHAEV train for ≥ 15 minutes. ITS SR 3.7.13.4 requires the verification that the required FHAEV train actuates on an actual or simulated actuation signal. This changes the CTS by moving the details of how the Surveillances are conducted to the Bases. Other changes to CTS 4.9.12.d.3 are discussed in DOCs M.1 and L.4.

DISCUSSION OF CHANGES
ITS 3.7.13, FUEL HANDLING AREA EXHAUST VENTILATION (FHAEV) SYSTEM

The removal of these details for performing a Surveillance Requirement from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirements to periodically operate the required FHAEV train and actuate the required FHAEV train on an actual or simulated actuation signal. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LA.2 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3/4.9.12 footnote ** states that the FHAEV System is a shared system. ITS 3.7.13 does not include this detail. This changes the CTS by relocating this detail to the UFSAR.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS retains the requirement that one FHAEV train must be OPERABLE and in operation. Also, this change is acceptable because the removed information will be adequately controlled in the UFSAR. The UFSAR is controlled under 10 CFR 50.59 or 10 CFR 50.71(e), which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L.1 *(Category 2 – Relaxation of Applicability)* CTS 3.9.12 states that the requirements on the FHAEV System are applicable "Whenever irradiated fuel is in the storage pool." CTS 3.9.12 Action a requires the suspension of all operations involving movement of fuel "within the storage pool" when the FHAEV System is inoperable. ITS 3.7.13 is applicable "During movement of irradiated fuel assemblies in the auxiliary building." ITS 3.7.13 ACTION A requires the suspension of movement of irradiated fuel assemblies "in the auxiliary building" when the required FHAEV train is inoperable or not in operation. This changes the CTS by restricting the Applicability of the FHAEV System Specification to only when there is a potential for a fuel handling accident (i.e., during movement of irradiated fuel assemblies in the auxiliary building).

The purpose of CTS 3.9.12 is to ensure the FHAEV System is OPERABLE to mitigate the consequences of a fuel handling accident in the auxiliary building. This change is acceptable because the requirements continue to ensure that the structures, systems, and components are maintained in the MODES and other specified conditions assumed in the safety analyses and licensing basis. The CNP fuel handling accident analysis (in the auxiliary building) assumes that a

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single fuel assembly is damaged. A fuel handling accident is only assumed to occur when an irradiated fuel assembly is being moved. Therefore, the ITS imposes the controls on the FHAEV System during movement of irradiated fuel assemblies within the auxiliary building. This change is designated as less restrictive because the LCO requirements are applicable in fewer operating conditions than in the CTS.

L.2 *(Category 2 – Relaxation of Required Action)* The CTS 3.9.12 Applicability covers the case when the crane is being used to move loads over the storage pool and CTS 3.9.12 Action a states to suspend crane operation with loads over the storage pool if no fuel storage pool exhaust ventilation system is OPERABLE. CTS 3.9.12 Action a footnote * also references crane operations with loads over the storage pool. ITS 3.7.13 does not include these requirements. This changes the CTS by deleting a portion of the Applicability and the associated Action concerning moving loads with the crane over the storage pool.

The purpose of CTS 3.9.12 is to ensure that the initial assumptions of a fuel handling accident (FHA) are met. Specifically, the FHAEV System is required during movement of irradiated fuel to ensure that the offsite and onsite doses resulting from a fuel handling accident are within regulatory guidelines. This change is acceptable because the requirements continue to ensure that the structures, systems, and components are maintained in the MODES and other specified conditions assumed in the safety analyses and licensing basis. The change deletes the Applicability to crane operation with loads over irradiated fuel in the storage pool because this condition is not assumed to potentially result in a FHA, and is not part of the FHA analysis. This change is designated as less restrictive because the LCO requirements are applicable in fewer operating conditions than in the CTS.

L.3 *(Category 1 – Relaxation of LCO Requirements)* CTS 3.9.12 Action a footnote * specifies that the crane bay roll-up door and the south door of the auxiliary building crane bay may be opened under administrative control during movement of fuel within the storage pool. ITS 3.7.13 includes this allowance in an LCO Note, which states that the auxiliary building boundary may be opened intermittently under administrative control. This changes the CTS by allowing the auxiliary building boundary to be opened for more reasons than is specified in the CTS.

The purpose of the CTS 3.9.12 Action a footnote * is to allow the boundary to be opened under administrative control. This change is acceptable because the LCO requirements continue to ensure that the structures, systems, and components are maintained consistent with the safety analyses and licensing basis. The CTS allows the crane bay roll-up door and the south door of the auxiliary building crane bay to be opened under administrative control. The ITS allows these doors to be opened, but in addition will allow other portions of the boundary to be opened. This change is acceptable since administrative controls must be in place in order to open the boundary. The administrative controls required are described in the Bases. For entry and exit through doors the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for auxiliary building isolation is indicated. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

L.4 *(Category 10 – 18 to 24 Month Surveillance Frequency Change, Non-Channel Calibration Type)* CTS 4.9.12.d.3 requires, in part, the verification that on a high-radiation signal the system automatically shuts down the storage pool ventilation system supply fans. CTS 4.9.12.d.4 requires the verification that the required FHAEV System maintains the fuel handling area at a negative pressure of ≥ 1/8 inches water gauge relative to the outside atmosphere during system operation. These tests are required to be performed every 18 months. ITS SR 3.7.13.4 requires the verification that the required FHAEV train actuates on an actual or simulated actuation signal. ITS SR 3.7.13.5 requires the verification that the required FHAEV train can maintain a pressure of ≥ 0.125 inches of vacuum water gauge with respect to atmospheric pressure during the accident mode of operation at a flow rate of ≤ 27,000 cfm. These tests are required to be performed every 24 months. This changes the CTS by extending the Frequency of the Surveillance from 18 months (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2) to 24 months (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2). Other changes to CTS 4.9.12.d.3 are discussed in DOCs M.1 and LA.1 while other changes to CTS 4.9.12.d.4 are discussed in DOCs A.4 and M.2.

The purpose of CTS 4.9.12.d.3 is to ensure that the required FHAEV train automatically actuates on an actual or simulated actuation signal while CTS 4.9.12.d.4 ensures the FHAEV System can maintain the fuel handling area at a negative pressure. This change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical surveillance data and maintenance data sufficient to determine failure modes have not revealed any time-based failure mechanisms. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. Extending the Surveillance test interval for the required FHAEV train is acceptable because the required FHAEV train is verified to be in operation every 12 hours and the required FHAEV train is verified to be operating properly every 184 days. As described in the Bases this testing ensures that each charcoal bypass valve is closed and the flow passes through the charcoal filter section. Based on the inherent system and component reliability and the testing performed during the operating cycle, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 24 month Surveillance Frequency, if performed at the maximum interval allowed by ITS SR 3.0.2 (30 months) does not invalidate any assumptions in the plant licensing basis. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

DISCUSSION OF CHANGES
ITS 3.7.13, FUEL HANDLING AREA EXHAUST VENTILATION (FHAEV) SYSTEM

L.5 *(Category 9 – Surveillance Frequency Change Using GL 91-04 Guidelines, Non-24 Month Type Change)* CTS 4.9.12.a states that the required FHAEV System shall be demonstrated OPERABLE at least once per 31 days by initiating flow through the HEPA filter and charcoal adsorber train and verifying that the train operates for a least 15 minutes. ITS SR 3.7.13.2 requires the performance of a similar Surveillance, but at a Frequency of 92 days. This changes the CTS by extending the Frequency of the Surveillances from 31 days (i.e., a maximum of 38.75 days accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2) to 92 days (i.e., a maximum of 115 days accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2).

The purpose of CTS 4.9.12.a is to provide a degree of assurance that the required FHAEV train will operate properly when required. An evaluation of the surveillance interval extension was performed, based on the same approach described in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical surveillance data and maintenance data sufficient to determine failure modes have shown that these tests normally pass their Surveillances at the current Frequency. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. Extending the Surveillance test interval for these Surveillances is acceptable for the following reasons: a) one train of the FHAEV is in operation whenever irradiated fuel assemblies are being moved in the auxiliary building. Thus the FHAEV System's condition is monitored during normal spent fuel handling operations; and b) those portions of the system that are not normally operating have surveillance history that indicates they are highly reliable. In addition, there are two independent and redundant FHAEV System fans, each of which is capable of performing the required safety function. Therefore, based on system redundancy, the inherent system and component reliability, and the fact that many of the system components are normally operating, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 92 day Surveillance Frequency, if performed at the maximum interval allowed by ITS SR 3.0.2 (115 days) does not invalidate any assumptions in the plant licensing basis. This change is designated less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

FHAEV System ①

FBACS

3.7.13

CTS

3.7 PLANT SYSTEMS

Handling Area Exhaust Ventilation (FHAEV) ①

3.7.13 Fuel Building Air Cleanup System (FBACS)

One FHAEV

3.9.12 LCO 3.7.13 Two FBACS trains shall be OPERABLE. and in operation ① ②

3.9.12 Action a footnote*

auxiliary

- NOTE -

The fuel building boundary may be opened intermittently under administrative control. ①

APPLICABILITY: [MODES 1, 2, 3, and 4,] ③

During movement of [recently] irradiated fuel assemblies in the fuel building. ④ ①

auxiliary

ACTIONS

Action b

- NOTE -

LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One FBACS train inoperable.	A.1	Restore FBACS train to OPERABLE status.	7 days
B. Two FBACS trains inoperable due to inoperable fuel building boundary in MODE 1, 2, 3, or 4.	B.1	Restore fuel building boundary to OPERABLE status.	24 hours

②

FHAEV System ①

FBACS
3.7.13

CTS

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. [Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, 3, or 4. OR Two FBACS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours] ②
D. Required Action and associated Completion Time [of Condition A] not met during movement of [recently] irradiated fuel assemblies in the fuel building.	D.1 Place OPERABLE FBACS train in operation. OR D.2 Suspend movement of [recently] irradiated fuel assemblies in the fuel building.	Immediately Immediately ②
Action a A E. Two FBACS trains inoperable during movement of [recently] irradiated fuel assemblies in the fuel building. INSERT 1	A E.1 Suspend movement of [recently] irradiated fuel assemblies in the fuel auxiliary building.	Immediately ② ④ ①

INSERT 2 ②

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
4.9.12.a	SR 3.7.13.1 ② Operate each required FBACS FHAEV fan train for [≥ 10 continuous hours with the heaters operating or (for systems without heaters) ≥ 15 minutes].	31 92 days ① ② ④ ⑥

2 **INSERT 1**

Required FHAEV train inoperable or not in operation.

2 **INSERT 2**

CTS

DOC M.1

SR 3.7.13.1	Verify required FHAEV train is operating.	12 hours

FHAEV System ①

FBACS
3.7.13

CTS

SURVEILLANCE REQUIREMENTS (continued) FHAEV System

CTS		SURVEILLANCE	FREQUENCY	
4.9.12.b, 4.9.12.c, 4.9.12.d.1, 4.9.12.e, 4.9.12.f	SR 3.7.13.2 ③	Perform required FBACS filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)].	In accordance with the [VFTP]	① ② ④
4.9.12.d.3	SR 3.7.13.3 ④	① Verify each FBACS train actuates on an actual or simulated actuation signal. required FHAEV	[18] months 24	① ④ ②
4.9.12.d.4	SR 3.7.13.4 ⑤	Verify one FBACS train can maintain a pressure ≤ [-0.125] inches water gauge with respect to atmospheric pressure during the [post] accident mode of operation at a flow rate ≤ [20,000] cfm. FHAEV required of vacuum ② ① 27,000	[18] months on a STAGGERED TEST BASIS 24	① ④ ② ④ ② ④
	SR 3.7.13.5	[Verify each FBACS filter bypass damper can be closed.	[18] months]	⑤

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.13, FUEL HANDLING AREA EXHAUST VENTILATION (FHAEV) SYSTEM

1. Changes are made (additions, deletions, and/or changes) to the ISTS to reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. ISTS LCO 3.7.13 requires two trains to be OPERABLE. CNP only requires a single train of the FHAEV System in accordance with the CNP current licensing basis. Therefore, ITS LCO 3.7.13 requires one FHAEV train to be OPERABLE. In addition, the FHAEV System fans do not receive an automatic actuation signal. An FHAEV fan is assumed to be operating during movement of irradiated fuel assemblies within the auxiliary building in order to mitigate the consequences of a fuel handling accident. Therefore, ITS LCO 3.7.13 also requires the required FHAEV train to be in operation and ITS SR 3.7.13.1 has been added to verify that the required FHAEV train is in operation. Subsequent Surveillances have been renumbered, as applicable, and modified to reflect the one train requirement. Due to this design, ISTS 3.7.13 ACTIONS A, B, C, and D have been deleted and ISTS 3.7.13 ACTION E (ITS 3.7.13 ACTION A) has been revised to handle the condition when the required FHAEV train is inoperable or not in operation.

3. This bracketed requirement/information is deleted because it is not applicable to CNP Units 1 and 2. Subsequent requirements are renumbered, where applicable, to reflect this deletion.

4. The brackets are removed and the proper plant specific information/value is provided.

5. ISTS SR 3.7.13.5 has been deleted since these dampers are closed during the movement of irradiated fuel assemblies within the auxiliary building. The dampers are verified to be closed during the performance of ITS SR 3.7.13.1 as indicated in the Bases.

6. The Frequency has been changed to 92 days. The technical justification for this change is provided in the Discussion of Changes.

Improved Standard Technical Specifications (ISTS) Bases Markup and Justification for Deviations (JFDs)

FHAEV System

FBACS
B 3.7.13 (1)

Handling Area Exhaust Ventilation (FHAEV)

B 3.7 PLANT SYSTEMS

B 3.7.13 Fuel ~~Building Air Cleanup~~ System (FBACS) (1)

BASES

FHAEV System

BACKGROUND

The FBACS filters airborne radioactive particulates from the area of the fuel pool following a fuel handling accident ~~or loss of coolant accident (LOCA)~~. The FBACS, in conjunction with other normally operating systems, also provides environmental control of temperature and humidity in the fuel pool area. (2) (1) (1)

FHAEV System

INSERT 1 INSERT 1A fans

The FBACS consists of two ~~independent and~~ redundant ~~trains~~. ~~Each train consists of a heater, a prefilter or demister, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), and a fan.~~ Ductwork, valves or dampers, and instrumentation also form part of the system ~~as well as demisters, functioning to reduce the relative humidity of the airstream. A second bank of HEPA filters follows the adsorber section to collect carbon fines and provide backup in case the main HEPA filter bank fails. The downstream HEPA filter is not credited in the analysis, but serves to collect charcoal fines, and to back up the upstream HEPA filter should it develop a leak. The system initiates filtered ventilation of the fuel handling building following receipt of a high radiation signal.~~ (1) (2) INSERT 1B (1) (2) INSERT 2 (2)

~~The FBACS is a standby system, parts of which may also be operated during normal plant operations. Upon receipt of the actuating signal, normal air discharges from the building, the fuel handling building is isolated, and the stream of ventilation air discharges through the system filter trains. The prefilters or demisters remove any large particles in the air, and any entrained water droplets present, to prevent excessive loading of the HEPA filters and charcoal adsorbers.~~ (2)

FHAEV 14.2.1 9.9.3.2

The FBACS is discussed in the FSAR, Sections 6.5.1, 9.4.5, and 15.7.4 (Refs. 1, 2, and 3, respectively) ~~because it may be used for normal, as well as post accident, atmospheric cleanup functions.~~ (1) (2) (3)

APPLICABLE SAFETY ANALYSES

FHAEV System

The FBACS design basis is established by the consequences of the limiting Design Basis Accident (DBA), which is a fuel handling accident ~~involving handling recently irradiated fuel~~. The analysis of the fuel handling accident, given in Reference 3, assumes that all fuel rods in an assembly are damaged. ~~The analysis of the LOCA assumes that radioactive materials leaked from the Emergency Core Cooling System (ECCS) are filtered and adsorbed by the FBACS.~~ The DBA analysis of the fuel handling accident assumes that only one train of the FBACS is (2)

2 **INSERT 1**

is a common Unit 1 and Unit 2 system and

2 **INSERT 1A**

trains sharing a common filter unit but with

2 **INSERT 1B**

One train is in operation during the movement of irradiated fuel assemblies in the auxiliary building. Each fan can draw air through a common slot exhaust plenum along the north side of the spent fuel pool to direct it through a common filter housing and discharge it to the Unit 1 vent. The filter housing consists of a roll media roughing filter, a high efficiency particulate air (HEPA) filter, and an activated charcoal adsorber section for removal of gaseous activity (principally iodines). There is a normally open bypass on the charcoal adsorber section, however during the movement of irradiated fuel assemblies within the storage pool each damper must be closed. The Fuel Handling Area Supply Air System is made up of four supply units composed of fans, filters, and steam coils. Normally, all four supply units are in operation, drawing outside air through the steam coils and filters and discharging it into the fuel handling area. The FHAEV System fans draw the air through the fuel handling area into the exhaust plenum and through the FHAEV System filter train. The combined capacity of the four supply units is less than that of a single FHAEV System fan, thus the fuel handling area, as well as the entire space within the auxiliary building pressure boundary, are maintained at a slightly negative pressure.

2 **INSERT 2**

Upon receipt of a Fuel Handling Area Radiation - High signal the fuel handling area supply fans are tripped, thus ensuring a negative pressure within the space. The charcoal adsorber section bypass dampers also receive a close signal upon receipt of Fuel Handling Area Radiation - High signal (however, these dampers are maintained closed when the required FHAEV train is in operation).

FHAEV System (1)

~~FBACS~~
B 3.7.13

BASES

APPLICABLE SAFETY ANALYSES (continued)

INSERT 3

~~functional due to a single failure that disables the other train. The accident analysis accounts for the reduction in airborne radioactive material provided by the one remaining train of this filtration system.~~ The amount of fission products available for release from the ~~fuel handling~~ auxiliary building is determined for a fuel handling accident ~~and for a LOCA~~. ~~[Due to radioactive decay, FBACS is only required to isolate during fuel handling accidents involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [ ] days).]~~ These assumptions and the analysis follow the guidance provided in Regulatory Guide 1.25 (Ref. ~~4~~ 3). (2) (2) (2)

The ~~FBACS~~ FHAEV System satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii). (1)

LCO

INSERT 4

One ~~Two independent and redundant~~ trains of the ~~FBACS~~ FHAEV System ~~are~~ is required to be OPERABLE ~~to ensure that at least one train is available, assuming a single failure that disables the other train, coincident with a loss of offsite power.~~ Total system failure could result in the atmospheric release from the fuel handling building exceeding the 10 CFR 100 (Ref. ~~6~~ 4) limits in the event of a fuel handling accident ~~involving handling recently irradiated fuel~~. (1)(2) (1) (2) (1)

The ~~FBACS~~ FHAEV train is considered OPERABLE when the individual components necessary to control exposure in the ~~fuel handling~~ auxiliary building are OPERABLE ~~in both trains~~. ~~An FBACS~~ Thus, the required FHAEV train is considered OPERABLE when its associated: (1) (1)

a. Fan is OPERABLE~~,~~ ; (4)

b. HEPA filter and charcoal adsorber are not excessively restricting flow, and are capable of performing their filtration function~~, and~~ ; (4)

c. ~~Heater, demister,~~ ductwork, valves, and dampers are OPERABLE, and air ~~circulation~~ flow can be maintained. ; and (2)

INSERT 5

The LCO is modified by a Note allowing the ~~fuel~~ auxiliary building boundary to be opened intermittently under administrative controls. For entry and exit through doors the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for ~~fuel~~ auxiliary building isolation is indicated. (1) (1)

2

INSERT 3

operating and the exhaust flow is directed through the charcoal adsorber section and the Fuel Handling Area Supply Air System fans are automatically shutdown upon receipt of a Fuel Handling Area Radiation - High signal.

1

INSERT 4

and in operation. The required FHAEV train is in operation when one fan is operating and all charcoal adsorber section bypass dampers are closed and inlet dampers are open.

1

INSERT 5

d. Fuel Handling Area Supply Air System fans must be capable of being stopped upon receipt of a Fuel Handling Area Radiation - High signal.

FHAEV System (1)

~~FBACS~~
B 3.7.13

BASES

FHAEV System

5, or 6,

not

APPLICABILITY

In MODE 1, 2, 3, ~~or~~ 4, the ~~FBACS~~ is required to be OPERABLE ~~to provide fission product removal associated with ECCS leaks due to a LOCA and leakage from containment and annulus~~. INSERT 6 (1)

~~In MODE 5 or 6, the FBACS is not required to be OPERABLE since the ECCS is not required to be OPERABLE.~~

FHAEV System

auxiliary building

During movement of ~~recently~~ irradiated fuel in the ~~fuel handling area~~, the ~~FBACS~~ is required to be OPERABLE to alleviate the consequences of a fuel handling accident.

ACTIONS

LCO 3.0.3 is not applicable while in MODE 5 or 6. However, since irradiated fuel assembly movement can occur in MODE 1, 2, 3, or 4, the ACTIONS have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 5 or 6, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, 3, or 4, the fuel movement is independent of reactor operations. Entering LCO 3.0.3, while in MODE 1, 2, 3, or 4 would require the unit to be shutdown unnecessarily.

~~A.1~~

~~With one FBACS train inoperable, action must be taken to restore OPERABLE status within 7 days. During this period, the remaining OPERABLE train is adequate to perform the FBACS function. The 7 day Completion Time is based on the risk from an event occurring requiring the inoperable FBACS train, and the remaining FBACS train providing the required protection.~~ (1)

~~B.1~~

~~- REVIEWER'S NOTE -~~
~~Adoption of Condition B is dependent on a commitment from the licensee to have guidance available describing compensatory measures to be taken in the event of an intentional and unintentional entry into Condition B.~~ (1)

~~If the fuel building boundary is inoperable in MODE 1, 2, 3, or 4, the FBACS trains cannot perform their intended functions. Actions must be taken to restore an OPERABLE fuel building boundary within 24 hours. During the period that the fuel building boundary is inoperable, appropriate compensatory measures [consistent with the intent, as applicable, of GDC 19, 60, 61, 63, 64 and 10 CFR Part 100] should be~~

1 **INSERT 6**

since the FHAEV System is only credited during a fuel handling accident in the auxiliary building

FHAEV System (1)

FBACS
B 3.7.13

BASES

ACTIONS (continued)

utilized to protect plant personnel from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature and relative humidity, and physical security. Preplanned measures should be available to address these concerns for intentional and unintentional entry into the condition. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of compensatory measures. The 24 hour Completion Time is a typically reasonable time to diagnose, plan and possibly repair, and test most problems with the fuel building boundary. (1)

[C.1 and C.2

In MODE 1, 2, 3, or 4, when Required Action A.1 or B.1 cannot be completed within the associated Completion Time, or when both FBACS trains are inoperable for reasons other than an inoperable fuel building boundary (i.e., Condition B), the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in MODE 3 within 6 hours, and in MODE 5 within 36 hours. The 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 unit systems.]

D.1 and D.2

When Required Action A.1 cannot be completed within the required Completion Time, during movement of [recently] irradiated fuel assemblies in the fuel building, the OPERABLE FBACS train must be started immediately or [recently] irradiated fuel movement suspended. This action ensures that the remaining train is OPERABLE, that no undetected failures preventing system operation will occur, and that any active failure will be readily detected. (1)

If the system is not placed in operation, this action requires suspension of [recently] irradiated fuel movement, which precludes a fuel handling accident [involving handling recently irradiated fuel]. This does not preclude the movement of fuel assemblies to a safe position.

(A) E.1 — required FHAEV train — is — or not in operation (1)

When two trains of the FBACS are inoperable during movement of [recently] irradiated fuel assemblies in the fuel building, action must be taken to place the unit in a condition in which the LCO does not apply. Action must be taken immediately to suspend movement of auxiliary (1)

FHAEV System (1)

~~FBACS~~

BASES

ACTIONS (continued)

~~recently~~ irradiated fuel assemblies in the ~~fuel~~ auxiliary building. This does not preclude the movement of fuel to a safe position. (1) (3)

SURVEILLANCE REQUIREMENTS

SR 3.7.13.~~1~~ (2) INSERT 7 (1)

Standby systems should be checked periodically to ensure that they function properly. As the environmental and normal operating conditions on this system are not severe, testing each train once every ~~month~~ 92 days (1) provides an adequate check on this system.

~~Monthly heater operation dries out any moisture accumulated in the charcoal from humidity in the ambient air. [Systems with heaters must be operated for ≥ 10 continuous hours with the heaters energized. Systems without heaters need only be operated for ≥ 15 minutes to demonstrate the function of the system.] The 31 day Frequency is based on the known reliability of the equipment and the two train redundancy available.~~ (1) (5) 92 (1) INSERT 8 (2)

SR 3.7.13.~~2~~ (3)

This SR verifies that the required ~~FBACS~~ FHAEV System testing is performed in accordance with the [Ventilation Filter Testing] Program (VFTP)]. The [VFTP] includes testing HEPA filter performance, charcoal adsorber efficiency, minimum and maximum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test frequencies and additional information are discussed in detail in the [VFTP]. (1) (3) (3) (5) (3)

[SR 3.7.13.~~3~~ (4) (3)

This SR verifies that ~~each FBACS~~ the required FHAEV train ~~starts and operates~~ actuates on an actual or simulated actuation signal. ~~The [18] month Frequency is consistent with Reference 6.]~~ INSERT 9 (2) (1) (4)

SR 3.7.13.~~4~~ (5) (1)

This SR verifies the integrity of the ~~fuel~~ auxiliary building enclosure. The ability of the ~~fuel building~~ pool storage area to maintain negative pressure with respect to potentially uncontaminated adjacent areas is periodically tested to verify proper function of the ~~FBACS~~ FHAEV train. During the ~~post~~ accident mode of operation, the ~~FBACS~~ FHAEV train is designed to maintain a slight negative pressure in the ~~fuel building~~ pool storage area, to prevent unfiltered ~~LEAKAGE~~. The ~~FBACS~~ FHAEV train is designed to maintain a ~~[≥]~~ pressure [0.125] inches water gauge of vacuum with respect to atmospheric pressure at a flow rate of ~~[20,000]~~ ≤ 27,000 cfm ~~to the fuel building~~. The (2) (1) (3) (1) (2) (1) (2) (3) (2) (2)

1 **INSERT 7**

SR 3.7.13.1

This SR requires verification every 12 hours that the required FHAEV train is operating with flow through the filter unit, including the HEPA filter and charcoal adsorber section. Verification includes fan status and also verifies that each charcoal bypass damper is closed. The Frequency of 12 hours is sufficient considering other indications and alarms available to the operator in the control room to monitor FHAEV train performance.

2 **INSERT 8**

Operating the required FHAEV train, with flow through the HEPA filter and charcoal adsorber train,

2 6 **INSERT 9**

The test must verify that the signal automatically shuts down each of the Fuel Handling Area Supply Air System fans. Operating experience has shown that these components usually pass the Surveillance when performed at the 24 month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.

FHAEV System (1)

~~FBACS~~
B 3.7.13

BASES

SURVEILLANCE REQUIREMENTS (continued)

(3)

Frequency of ~~18~~ 24 months is consistent with ~~the guidance provided in NUREG-0800, Section 6.5.1 (Ref. 7)~~. INSERT 10

~~An [18] month Frequency (on a STAGGERED TEST BASIS) is consistent with Reference 6.~~ (7)

~~[SR 3.7.13.5~~

~~Operating the FBACS filter bypass damper is necessary to ensure that the system functions properly. The OPERABILITY of the FBACS filter bypass damper is verified if it can be closed. An [18] month Frequency is consistent with Reference 6.]~~ (1)

REFERENCES

1. (4) FSAR, Section ~~6.5.1~~ 9.9.3.2 (2) (3)

~~2. FSAR, Section [9.4.5].~~

(2) ~~3.~~ (11) FSAR, Section ~~15.7.4~~ 14.2.1.

(3) ~~4.~~ Regulatory Guide 1.25.

(4) ~~5.~~ 10 CFR 100.

~~6. Regulatory Guide 1.52, Rev. [2].~~ (6)

~~7. NUREG-0800, Section 6.5.1, Rev. 2, July 1981.~~ (7)

7 **INSERT 10**

industry practice and with other filtration system SRs

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JUSTIFICATION FOR DEVIATIONS
ITS 3.7.13 BASES, FUEL HANDLING AREA EXHAUST VENTILATION (FHAEV) SYSTEM

1. Changes are made to reflect those changes made to the ISTS. Subsequent requirements are renumbered or revised, where applicable, to reflect the changes.

2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. The brackets are removed and the proper plant specific information/value is provided.

4. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

5. Testing of the maximum flow rate is added to the testing of the activated charcoal listed in the Bases for ITS SR 3.7.12.3 as part of the Ventilation Filter Testing Program (VFTP). Adding the maximum flow rate is consistent with the ITS 5.5 discussion of the VFTP. The maximum flow rate is an appropriate test criteria because of residence times associated with the activated charcoal.

6. ISTS SR 3.7.13.3 (ITS SR 3.7.13.4) verifies that each train actuates on an actual or simulated actuation signal every 18 months. The justification for the 18 month Frequency is that it is specified in Regulatory Guide 1.52. Regulatory Guide 1.52 addresses filtration requirements. This Surveillance verifies mechanical requirements. The Bases have been modified to correctly state the basis of the Frequency.

7. ISTS SR 3.7.13.4 (ITS SR 3.7.13.5) Bases references NUREG-0800, Section 6.5.1, Rev. 2, July 1981 for justification of the Frequency of 18 months. In addition, the Bases states that an 18 month Frequency on a STAGGERED TEST BASIS is consistent with that specified in Reference 6 (Regulatory Guide 1.52). NUREG-0800 does not specify an explicit Frequency for this Surveillance. The Bases have been revised to reflect the appropriate basis consistent with the same type of Surveillance in other places in the Bases.

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.13, FUEL HANDLING AREA EXHAUST VENTILATION (FHAEV) SYSTEM

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 14

ITS 3.7.14, Fuel Storage Pool Water Level

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

ITS

A.1

REFUELING OPERATIONS

STORAGE POOL WATER LEVEL

LIMITING CONDITION FOR OPERATION

LCO 3.7.14

3.9.11 At least 23 feet of water shall be maintained over the top of irradiated fuel assemblies seated in the storage racks.

APPLICABILITY: ~~Whenever irradiated fuel assemblies are in the storage pool~~. During movement of irradiated fuel assemblies in the fuel storage pool L.1

ACTION:

ACTION A

With the requirements of the specification not satisfied, suspend all movement of irradiated fuel assemblies and crane operations with loads in the fuel storage areas immediately and ~~restore water level to within its limit within 4 hours~~. The provision of Specification 3.0.3 are not applicable. L.1 L.2 A.2 L.1

SURVEILLANCE REQUIREMENTS

SR 3.7.14.1

4.9.11 The water level in the storage pool shall be determined to be at least its minimum required depth at least once per 7 days ~~when irradiated fuel assemblies are in the fuel storage pool~~. L.1

D. C. COOK - UNIT 1 3/4 9-12

ITS

A.1

REFUELING OPERATIONS

STORAGE POOL WATER LEVEL*

LIMITING CONDITION FOR OPERATION

LCO 3.7.14 — 3.9.11 At least 23 feet of water shall be maintained over the top of irradiated fuel assemblies seated in the storage racks.

APPLICABILITY: Whenever irradiated fuel assemblies are in the storage pool.

During movement of irradiated fuel assemblies in the fuel storage pool — L.1

ACTION:

ACTION A — With the requirements of the specification not satisfied, suspend all movement of fuel assemblies and crane operations with loads in the fuel storage areas and restore the water level to within its limit within 4 hours. The provisions of Specification 3.0.3 are not applicable.

irradiated — immediately — L.2 — A.2 — L.1

SURVEILLANCE REQUIREMENTS

SR 3.7.14.1 — 4.9.11 The water level in the storage pool shall be determined to be at least its minimum required depth at least once per 7 days when irradiated fuel assemblies are in the fuel storage pool. — L.1

*Shared system with D. C. COOK - UNIT 1. — LA.1

D. C. COOK - UNIT 2 3/4 9-11

DISCUSSION OF CHANGES
ITS 3.7.14, FUEL STORAGE POOL WATER LEVEL

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A.2 CTS 3.9.11 Action states that with the requirements of the Specification not satisfied, to suspend all movement of fuel assemblies. ITS 3.7.14 Required Action A.1 requires the immediate suspension of movement of irradiated fuel assemblies in the fuel storage pool. This changes the CTS by explicitly specifying that the compensatory action to suspend all movement of fuel assemblies requires an immediate response. Other changes to this CTS Action are discussed in DOCs L.1 and L.2.

The purpose of the CTS 3.9.11 Action to suspend all movement of fuel assemblies is to help ensure the assumptions of a fuel handling accident are met. The current action does not specify a time; however it implies that the action is immediate. This change is acceptable because it only provides clarification that the compensatory action requires an immediate response. This change is designated as administrative because it does not result in a technical change to the CTS.

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* (Unit 2 only) CTS 3/4.9.11 footnote * states that the fuel storage pool is a shared system with Unit 1. ITS 3.7.14 does not include this detail. This changes the Unit 2 CTS by relocating this detail to the UFSAR.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS retains the requirement that the fuel storage pool water level shall be maintained ≥ 23 ft over the top of irradiated fuel assemblies seated in the storage racks. Also, this change is acceptable because the removed information will be adequately controlled in the UFSAR. The UFSAR is controlled under 10 CFR 50.59 or 10 CFR 50.71(e), which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Unit 2 Technical Specifications.

LESS RESTRICTIVE CHANGES

L.1 *(Category 2 – Relaxation of Applicability)* CTS 3.9.11 states that the requirements on storage pool water level are applicable "Whenever irradiated fuel assemblies are in the storage pool." CTS 4.9.11 requires the water level in the storage pool to be verified every 7 days when irradiated fuel assemblies are in the storage pool. ITS 3.7.14 is applicable "During movement of irradiated fuel assemblies in the fuel storage pool." ITS SR 3.7.14.1 requires verification of the spent fuel pool water level every 7 days. This changes the CTS by restricting the Applicability of the spent fuel pool water level Specification and performance of the Surveillance to only when there is a potential for a fuel handling accident, i.e., during the movement of irradiated fuel assemblies in the fuel storage pool. In addition, since the Applicability is now limited to when irradiated fuel is being moved, the CTS Action to restore water level to within its limit within 4 hours after movement of fuel has been suspended has also been deleted.

The purpose of CTS 3.9.11 is to ensure that the minimum fuel storage pool water level assumption in the fuel handling accident analysis is met. This change is acceptable because the requirements continue to ensure that the structures, systems, and components are maintained in the MODES and other specified conditions assumed in the safety analyses and licensing basis. The CNP fuel handling accident analysis (outside containment) assumes that a single fuel assembly is damaged. A key assumption in the analysis is that there is ≥ 23 feet of water over the damaged assembly, as this depth is directly related to the clean up of the fission products before release to the spent fuel pool atmosphere. A fuel handling accident is only assumed to occur when an irradiated fuel assembly is being moved. Therefore, the ITS imposes the controls on minimum spent fuel pool water level during the movement of irradiated fuel assemblies in the fuel storage pool. This change is designated as less restrictive because the LCO requirements are applicable in fewer operating conditions than in the CTS.

L.2 *(Category 4 – Relaxation of Required Action)* CTS 3.9.11 Action states that when the spent fuel pool water level is not met, suspend all movement of fuel assemblies and crane operations with loads in the fuel storage areas. ITS 3.7.14 Required Action A.1 states that when fuel storage pool water level is not within limit, immediately suspend movement of irradiated fuel assemblies in the fuel storage pool. This changes the CTS by deleting the requirement to suspend crane operation over the spent fuel storage areas.

The purpose of the CTS 3.9.11 Action is to preclude a fuel handling accident from occurring when the initial conditions for that accident are not met. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to

DISCUSSION OF CHANGES
ITS 3.7.14, FUEL STORAGE POOL WATER LEVEL

repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the operability status of the redundant systems of required features, the capacity and capability of remaining features, a reasonable time for repairs or replacement of required features, and the low probability of a DBA occurring during the repair period. The only initiator to a fuel handling accident assumed in the accident analysis is the damaging of a single irradiated fuel assembly. Damaging a fuel assembly which has not been irradiated has no significant radiological effects and is not assumed in the fuel handling accident analysis. Therefore, stopping the handling of fuel assemblies which have not been irradiated when the spent fuel pool water level is less than the limit is not required. The dropping of loads onto fuel assemblies in the spent fuel pool is not an initiator that is assumed in the fuel handling accident analysis. The movement of heavy loads is addressed by the I&M's response to NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants," and Generic Letter 81-07. In the closeout of Generic Letter 81-07, the NRC concluded that restrictions on heavy loads over the spent fuel storage pool need not be included in the Technical Specifications. Therefore, these activities are not restricted in the Technical Specifications when the spent fuel pool water level is not within limit. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

CTS

3.7 PLANT SYSTEMS

3.7.15 4 Fuel Storage Pool Water Level 1

LCO 3.9.11

LCO 3.7.15 The fuel storage pool water level shall be ≥ 23 ft over the top of irradiated fuel assemblies seated in the storage racks. 1

APPLICABILITY: During movement of irradiated fuel assemblies in the fuel storage pool.

ACTIONS

Action

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Fuel storage pool water level not within limit.	A.1 - NOTE - LCO 3.0.3 is not applicable.	
	Suspend movement of irradiated fuel assemblies in the fuel storage pool.	Immediately

SURVEILLANCE REQUIREMENTS

4.9.11

SURVEILLANCE		FREQUENCY
SR 3.7.15.1 4	Verify the fuel storage pool water level is ≥ 23 ft above the top of the irradiated fuel assemblies seated in the storage racks.	7 days

1

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.14, FUEL STORAGE POOL WATER LEVEL

1. The CNP design does not include the Penetration Room Exhaust Air Cleanup System. Therefore, ISTS 3.7.14 is not included in the ITS and ISTS 3.7.15 is renumbered as ITS 3.7.14.

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Improved Standard Technical Specifications (ISTS) Bases Markup and Justification for Deviations (JFDs)

B 3.7 PLANT SYSTEMS (1)

B 3.7.15 (4) Fuel Storage Pool Water Level

BASES

BACKGROUND	The minimum water level in the fuel storage pool meets the assumptions of iodine decontamination factors following a fuel handling accident. The specified water level shields and minimizes the general area dose when the storage racks are filled to their maximum capacity. The water also provides shielding during the movement of spent fuel. A general description of the fuel storage pool design is given in the (4) FSAR, Section ~~9.1.2~~ 9.7.2 (Ref. 1). A description of the Spent Fuel Pool Cooling ~~and Cleanup~~ System is given in the (4) FSAR, Section ~~9.1.3~~ 9.4 (Ref. 2). The assumptions of the fuel handling accident are given in the (4) FSAR, Section ~~15.7.4~~ 14.2.1 (Ref. 3). (2) (3)
APPLICABLE SAFETY ANALYSES	The minimum water level in the fuel storage pool meets the assumptions of the fuel handling accident described in Regulatory Guide 1.25 (Ref. 4). The resultant 2 hour thyroid dose per person at the exclusion area boundary is a small fraction of the 10 CFR 100 (Ref. 5) limits. According to Reference 4, there is 23 ft of water ~~between~~ above the top of the damaged fuel bundle ~~and the fuel pool surface~~ during a fuel handling accident. With 23 ft of water, the assumptions of Reference 4 can be used directly. In practice, this LCO preserves this assumption for the bulk of the fuel in the storage racks. In the case of a single bundle dropped and lying horizontally on top of the spent fuel racks, however, there may be < 23 ft of water above the top of the fuel bundle ~~and the surface~~, ~~indicated by~~ due to the width of the bundle. To offset this small ~~nonconservatism~~, the analysis assumes that all fuel rods fail, although analysis shows that only the first few rows fail from a hypothetical maximum drop. (5) The fuel storage pool water level satisfies Criteria 2 and 3 of 10 CFR 50.36(c)(2)(ii). (6)
LCO	The fuel storage pool water level is required to be ≥ 23 ft over the top of irradiated fuel assemblies seated in the storage racks. The specified water level preserves the assumptions of the fuel handling accident analysis (Ref. 3). As such, it is the minimum required for ~~fuel storage and~~ movement within the fuel storage pool. (6)

BASES

APPLICABILITY	This LCO applies during movement of irradiated fuel assemblies in the fuel storage pool, since the potential for a release of fission products exists.
ACTIONS	A.1 Required Action A.1 is modified by a Note indicating that LCO 3.0.3 does not apply. 5 When the initial conditions for prevention of an accident cannot be met, steps should be taken to preclude the accident from occurring. When the fuel storage pool water level is lower than the required level, the movement of irradiated fuel assemblies in the fuel storage pool is immediately suspended to a safe position. This action effectively precludes the occurrence of a fuel handling accident. This does not preclude movement of a fuel assembly to a safe position. If moving irradiated fuel assemblies while in MODE 5 or 6, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODES 1, 2, 3, and 4, the fuel movement is independent of reactor operations. Therefore, inability to suspend movement of irradiated fuel assemblies is not sufficient reason to require a reactor shutdown.
SURVEILLANCE REQUIREMENTS	SR 3.7.15.1 4 1 This SR verifies sufficient fuel storage pool water is available in the event of a fuel handling accident. The water level in the fuel storage pool must be checked periodically. The 7 day Frequency is appropriate because the volume in the pool is normally stable. Water level changes are controlled by plant procedures and are acceptable based on operating experience. ~~During refueling operations, the level in the fuel storage pool is in equilibrium with the refueling canal, and the level in the refueling canal is checked daily in accordance with SR 3.9.6.1.~~ 6
REFERENCES	1. U FSAR, Section ~~9.1.2~~ 9.7.2 2 3 2. U FSAR, Section ~~9.1.3~~ 9.4 2 3 3. U FSAR, Section ~~15.7.4~~ 14.2.1 2 3 4. Regulatory Guide 1.25, ~~Rev. 0~~ 4

BASES

REFERENCES (continued)

5. 10 CFR 100.11.

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JUSTIFICATION FOR DEVIATIONS
ITS 3.7.14 BASES, FUEL STORAGE POOL WATER LEVEL

1. Changes are made to reflect consistency with those changes made to the Specification.

2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. The brackets have been removed and the proper plant specific information/value has been provided.

4. The ISTS provides a bracketed reference to a revision number for Regulatory Guide 1.25. Regulatory Guide 1.25 was originally issued as Safety Guide 25 in March 1972 and does not have a revision number. Therefore, the bracketed reference is deleted.

5. Changes are made to be consistent with similar phrases in other Bases.

6. Changes are made to be consistent with the Specification.

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.14, FUEL STORAGE POOL WATER LEVEL

There are no specific NSHC discussions for this Specification.

ATTACHMENT 15

ITS 3.7.15, Fuel Storage Pool Boron Concentration

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

ITS 3.7.15

A.1

ITS

REFUELING OPERATIONS

STORAGE POOL BORON CONCENTRATION*

LIMITING CONDITION FOR OPERATION

LCO 3.7.15 — 3.9.15 A boron concentration of greater than or equal to 2,400 ppm shall be maintained in the fuel storage pool.

APPLICABILITY: ~~At all times~~. — When fuel assemblies are stored in the fuel storage pool and a fuel storage pool verification has not been performed since the last movement of fuel assemblies in the fuel storage pool — L.1

ACTION:

ACTION A — With the requirements of the specification not satisfied, suspend all movement of fuel assemblies in the fuel storage pool and restore the boron concentration to within its limit prior to resuming fuel movement. The provisions of Specification 3.0.3 are not applicable. — Add proposed Required Action A.2.2 — L.1

SURVEILLANCE REQUIREMENTS

SR 3.7.15.1 — 4.9.15 The boron concentration in the fuel storage pool shall be determined to be at least at its minimum required at least once per 7 days.

*Shared system with Cook Nuclear Plant - Unit 2 — LA.1

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ITS

A.1

REFUELING OPERATIONS

STORAGE POOL BORON CONCENTRATION*

LIMITING CONDITION FOR OPERATION

LCO 3.7.15 3.9.15 A boron concentration of greater than or equal to 2,400 ppm shall be maintained in the fuel storage pool.

APPLICABILITY: ~~At all times~~ When fuel assemblies are stored in the fuel storage pool and a fuel storage pool verification has not been performed since the last movement of fuel assemblies in the fuel storage pool L.1

ACTION:

ACTION A With the requirements of the specification not satisfied, suspend all movement of fuel assemblies in the fuel storage pool and restore the boron concentration to within its limit prior to resuming fuel movement. The provisions of Specification 3.0.3 are not applicable.

Add proposed Required Action A.2.2 L.1

SURVEILLANCE REQUIREMENTS

SR 3.7.15.1 4.9.15 The boron concentration in the fuel storage pool shall be determined to be at least at its minimum required at least once per 7 days.

~~*Shared system with Cook Nuclear Plant - Unit 1~~ LA.1

DISCUSSION OF CHANGES
ITS 3.7.15, FUEL STORAGE POOL BORON CONCENTRATION

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3/4.9.15 footnote * states that the fuel storage pool is a shared system. ITS 3.7.15 does not include this detail. This changes the CTS by moving this detail from the CTS to the Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS retains the requirement that the boron concentration be maintained at a concentration greater than or equal to 2400 ppm in the fuel storage pool. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L.1 *(Category 2 – Relaxation of Applicability)* CTS 3.9.15 is applicable at all times. ITS 3.7.15 is applicable when fuel assemblies are stored in the fuel storage pool and a fuel storage pool verification has not been performed since the last movement of fuel assemblies in the fuel storage pool. In addition, ITS 3.7.15 Required Action A.2.2 provides an alternative action to allow exiting the MODE of Applicability in the event the LCO is not met. This changes the CTS by reducing

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DISCUSSION OF CHANGES
ITS 3.7.15, FUEL STORAGE POOL BORON CONCENTRATION

the Applicability of the Fuel Storage Pool Boron Concentration Specification to only the time when fuel assemblies are stored in the fuel storage pool and a fuel storage pool verification has not been performed since the last movement of fuel assemblies in the fuel storage pool, and adding an ACTION that allows exiting the Applicability if the LCO is not met.

The purpose of CTS 3.9.15 is to ensure adequate dissolved boron is in the fuel storage pool water to maintain the required subcriticality margin. This change is acceptable because the requirements continue to ensure that the process variables are maintained in the MODES and other specified conditions assumed in the safety analyses and licensing basis. When the fuel storage pool is unloaded or following performance of a fuel storage pool verification, there is no potential for criticality. Performing a fuel storage pool verification provides assurance that no fuel assemblies have been inadvertently misplaced in the fuel storage pool. This change is designated as less restrictive because the LCO requirements are applicable in fewer operating conditions than in the CTS and because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

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Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

CTS 1

3.7 PLANT SYSTEMS

1 2

3.7.16 15 Fuel Storage Pool Boron Concentration

3.9.15 LCO 3.7.16 15 The fuel storage pool boron concentration shall be ≥ 2300 2400 ppm. 1 2

Doc L.1 APPLICABILITY: When fuel assemblies are stored in the fuel storage pool and a fuel storage pool verification has not been performed since the last movement of fuel assemblies in the fuel storage pool.

ACTIONS

Action

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Fuel storage pool boron concentration not within limit.	- NOTE - LCO 3.0.3 is not applicable.	
	A.1 Suspend movement of fuel assemblies in the fuel storage pool.	Immediately
	AND	
	A.2.1 Initiate action to restore fuel storage pool boron concentration to within limit.	Immediately
	OR	
	A.2.2 Initiate action to perform a fuel storage pool verification.	Immediately

CTS

Fuel Storage Pool Boron Concentration
3.7.16 5 1

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
4.9.15 SR 3.7.16.1 5	Verify the fuel storage pool boron concentration is within limit.	7 days 1

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JUSTIFICATION FOR DEVIATIONS
ITS 3.7.15, FUEL STORAGE POOL BORON CONCENTRATION

1. The CNP design does not include the Penetration Room Exhaust Air Cleanup System. Therefore, ISTS 3.7.14 is not included in the ITS and ISTS 3.7.16 is renumbered as ITS 3.7.15.

2. The brackets have been removed and the proper plant specific information/value has been provided.

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Improved Standard Technical Specifications (ISTS) Bases Markup and Justification for Deviations (JFDs)

B 3.7 PLANT SYSTEMS

B 3.7.16 15 [Fuel Storage Pool Boron Concentration] ①②

BASES

BACKGROUND

INSERT 1

In the Maximum Density Rack (MDR) [(Refs. 1 and 2)] design, the spent fuel storage pool is divided into two separate and distinct regions which, for the purpose of criticality considerations, are considered as separate pools. [Region 1], with [336] storage positions, is designed to accommodate new fuel with a maximum enrichment of [4.65] wt% U-235, or spent fuel regardless of the discharge fuel burnup. [Region 2], with [2670] storage positions, is designed to accommodate fuel of various initial enrichments which have accumulated minimum burnups within the acceptable domain according to Figure [3.7.17-1], in the accompanying LCO. Fuel assemblies not meeting the criteria of Figure [3.7.17-1] shall be stored in accordance with paragraph 4.3.1.1 in Section 4.3, Fuel Storage.

The water in the spent fuel storage pool normally contains soluble boron, which results in large subcriticality margins under actual operating conditions. However, the NRC guidelines, based upon the accident condition in which all soluble poison is assumed to have been lost, specify that the limiting k_{eff} of 0.95 be evaluated in the absence of soluble boron. Hence, the design of both regions is based on the use of unborated water, which maintains each region in a subcritical condition during normal operation with the regions fully loaded. The double contingency principle discussed in ANSI N-16.1-1975 and the April 1978 NRC letter (Ref. 3) allows credit for soluble boron under other abnormal or accident conditions, since only a single accident need be considered at one time. For example, the most severe accident scenario is associated with the movement of fuel from [Region 1 to Region 2], and accidental misloading of a fuel assembly in [Region 2]. This could potentially increase the criticality of [Region 2]. To mitigate these postulated criticality related accidents, boron is dissolved in the pool water. Safe operation of the MDR with no movement of assemblies may therefore be achieved by controlling the location of each assembly in accordance with LCO 3.7.17, "Spent Fuel Assembly Storage." Prior to movement of an assembly, it is necessary to perform SR 3.7.16.1.

would

for Normal storage

all

for the allowed loading patterns

independent

INSERT 2

0

16

Pool

③ ⑤ ② ②

APPLICABLE SAFETY ANALYSES

INSERT 3

Most accident conditions do not result in an increase in the activity of either of the two regions. Examples of these accident conditions are the loss of cooling (reactivity increase with decreasing water density) and the dropping of a fuel assembly on the top of the rack. However, accidents can be postulated that could increase the reactivity. This increase in

③

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3 **INSERT 1**

The fuel storage pool is shared by Unit 1 and Unit 2, and is described in the Bases for LCO 3.7.16, "Spent Fuel Pool Storage."

3 **INSERT 2**

only accident scenario that has a potential for more than negligible positive reactivity effect is an inadvertent misplacement of a new fuel assembly. This accident has the potential for exceeding the limiting reactivity, should there be a concurrent and independent accident condition resulting in the loss of all soluble poison.

3 **INSERT 3**

Although credit for the soluble boron normally present in the spent fuel pool water is permitted under abnormal or accident conditions, most abnormal or accident conditions will not result in exceeding the limiting reactivity even in the absence of soluble boron. The effects on reactivity of credible abnormal and accident conditions due to temperature increase, boiling, assembly dropped on top of a rack, lateral rack module movement and misplacement of a fuel assembly have been analyzed. Of these abnormal or accident conditions, only the inadvertent misplacement of a fresh fuel assembly has the potential for exceeding the limiting reactivity, should there be a concurrent and independent accident condition resulting in the loss of all soluble boron. The largest reactivity increase would occur if a new fuel assembly of 4.95% enrichment were to be positioned in a Region 2 location with the remainder of the fuel rack fully loaded with fuel of the highest permissible reactivity (Ref. 2).

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 (2)

BASES

APPLICABLE SAFETY ANALYSES (continued)

~~reactivity is unacceptable with unborated water in the storage pool. Thus, for these accident occurrences, the presence of soluble boron in the storage pool prevents criticality in both regions. The postulated accidents are basically of two types. A fuel assembly could be incorrectly transferred from [Region 1 to Region 2] (e.g., an unirradiated fuel assembly or an insufficiently depleted fuel assembly). The second type of postulated accidents is associated with a fuel assembly which is dropped adjacent to the fully loaded [Region 2] storage rack. This could have a small positive reactivity effect on [Region 2]. However, the negative reactivity effect of the soluble boron compensates for the increased reactivity caused by either one of the two postulated accident scenarios. The accident analyses is provided in the FSAR, Section [15.7.4] (Ref. 4).~~ (3)

The concentration of dissolved boron in the fuel storage pool satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii).

LCO

The fuel storage pool boron concentration is required to be ≥ ~~[2300]~~ 2400 ppm. (1) The specified concentration of dissolved boron in the fuel storage pool preserves the assumptions used in the analyses of the potential critical (2) ~~accident scenarios as described in Reference 4~~. This concentration of dissolved boron is the minimum required concentration for fuel assembly storage and movement within the fuel storage pool. (3)

APPLICABILITY

This LCO applies whenever fuel assemblies are stored in the spent fuel storage pool, until a complete spent fuel storage pool verification has been performed following the last movement of fuel assemblies in the spent fuel storage pool. This LCO does not apply following the verification, since the verification would confirm that there are no misloaded fuel assemblies. With no further fuel assembly movements in progress, there is no potential for a misloaded fuel assembly or a dropped fuel assembly.

ACTIONS

A.1, A.2.1, and A.2.2

Move to Next page as INSERT A

The Required Actions are modified by a Note indicating that LCO 3.0.3 does not apply. (4)

When the concentration of boron in the fuel storage pool is less than required, immediate action must be taken to preclude the occurrence of an accident or to mitigate the consequences of an accident in progress. This is most efficiently achieved by immediately suspending the

BASES

ACTIONS (continued) initiation of action to restore the

movement of fuel assemblies. The concentration of boron ~~is restored~~ to within limit occurs simultaneously with suspending movement of fuel assemblies. Alternatively, beginning a verification of the fuel storage pool fuel locations, to ensure proper locations of the fuel, can be performed. However, prior to resuming movement of fuel assemblies, the concentration of boron must be restored. This does not preclude movement of a fuel assembly to a safe position. 2

INSERT A, from previous page

If the LCO is not met while moving irradiated fuel assemblies in MODE 5 or 6, LCO 3.0.3 would not be applicable. If moving irradiated fuel assemblies while in MODE 1, 2, 3, or 4, the fuel movement is independent of reactor operation. Therefore, inability to suspend movement of fuel assemblies is not sufficient reason to require a reactor shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.7.~~16~~15.1 2

This SR verifies that the concentration of boron in the fuel storage pool is within the required limit. As long as this SR is met, the analyzed accidents are fully addressed. The 7 day Frequency is appropriate because no major replenishment of pool water is expected to take place over such a short period of time.

REFERENCES

~~[1. Callaway FSAR, Appendix 9.1A, "The Maximum Density Rack (MDR) Design Concept."~~

~~2. Description and Evaluation for Proposed Changes to Facility Operating Licenses DPR-39 and DPR-48 (Zion Power Station).]~~ 3

1 ~~3~~. Double contingency principle of ANSI N16.1-1975, as specified in the April 14, 1978 NRC letter (Section 1.2) and implied in the proposed revision to Regulatory Guide 1.13 (Section 1.4, Appendix A).

2 ~~4~~. ~~U~~FSAR, Section ~~15.7.4~~ 9.7.2. 3 1

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.15 BASES, FUEL STORAGE POOL BORON CONCENTRATION

1. The brackets have been removed and the proper plant specific information/value has been provided.

2. Changes are made to reflect consistency with or those changes made to the ISTS. Subsequent requirements are renumbered or revised, where applicable, to reflect the changes.

3. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

4. Changes are made to be consistent with similar phrases in other Bases.

5. Editorial changes made for enhanced clarity.

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.15, FUEL STORAGE POOL BORON CONCENTRATION

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 16

ITS 3.7.16, Spent Fuel Pool Storage

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

ITS 3.7.16

A.1

ITS

5.0 DESIGN FEATURES

5.4 REACTOR COOLANT SYSTEM

DESIGN PRESSURE AND TEMPERATURE

See ITS Chapter 4.0

5.4.1 The reactor coolant system is designed and shall be maintained:

a. In accordance with the code requirements specified in Section 4.1.6 of the FSAR, with allowance for normal degradation pursuant to the applicable Surveillance Requirements,

b. For a pressure of 2485 psig, and

c. For a temperature of 650°F, except for the pressurizer which is 680°F.

5.5 EMERGENCY CORE COOLING SYSTEMS

5.5.1 The emergency core cooling systems are designed and shall be maintained in accordance with the original design provisions contained in Section 6.2 of the FSAR with allowance for normal degradation pursuant to the applicable Surveillance Requirements, with one exception. This exception is the CVCS boron makeup system and the BIT.

5.6 FUEL STORAGE

CRITICALITY – SPENT FUEL

5.6.1.1 The spent fuel storage racks are designed and shall be maintained with:

A.2

See ITS Chapter 4.0

a. A k_{eff} equivalent to less than 0.95 when flooded with unborated water.

b. A nominal 8.97 inch center-to-center distance between fuel assemblies placed in the storage racks.

LCO 3.7.16

c. The fuel assemblies will be classified as acceptable for Region 1, Region 2, or Region 3 storage based upon their assembly average burnup versus initial nominal enrichment. Cells acceptable for Region 1, Region 2, and Region 3 assembly storage are indicated in Figures 5.6-1 and 5.6-2. Assemblies that are acceptable for storage in Region 1, Region 2, and Region 3 must meet the design criteria that define the regions as follows:

Add proposed LCO 3.7.16 ACTION A — A.2

Add proposed SR 3.7.16.1 — M.1

COOK NUCLEAR PLANT-UNIT 1 Page 5-5 AMENDMENT ~~158, 163, 169, 212, 214~~ 241

ITS 3.7.16

A.1

ITS

5.0 DESIGN FEATURES

5.6 FUEL STORAGE (Continued)

See ITS Chapter 4.0

1. Region 1 is designed to accommodate new fuel with a maximum nominal enrichment of 4.95 wt% U-235, or spent fuel regardless of the discharge fuel burnup.

Table 3.7.16-1

A.2

2. Region 2 is designed to accommodate fuel of 4.95% initial nominal enrichment burned to at least 50,000 MWD/MtU, or fuel of other enrichments with equivalent reactivity.

3. Region 3 is designed to accommodate fuel of 4.95% initial nominal enrichment burned to at least 38,000 MWD/MtU, or fuel of other enrichments with equivalent reactivity.

The equivalent reactivity criteria for Region 2 and Region 3 is defined via the following equations:

For Region 2 Storage

Minimum Assembly Average Burnup in MWD/MTU =

$$-22,670 + 22,220\,E - 2,260\,E^2 + 149\,E^3$$

For Region 3 Storage

Minimum Assembly Average Burnup in MWD/MTU =

$$-26,745 + 18,746\,E - 1,631\,E^2 + 98.4\,E^3$$

Where E = Initial Peak Enrichment

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ITS 3.7.16

A.1

ITS

5.0 DESIGN FEATURES

5.5 METEOROLOGICAL TOWER LOCATION

5.5.1 The meteorological tower shall be located as shown on Figure 5.1-3.

5.6 FUEL STORAGE

CRITICALITY - SPENT FUEL

See ITS Chapter 4.0

5.6.1.1 The spent fuel storage racks are designed and shall be maintained with:

A.2

a. A K_{eff} equivalent to less than 0.95 when flooded with unborated water.

b. A nominal 8.97-inch center-to-center distance between fuel assemblies, placed in the storage racks.

See ITS Chapter 4.0

LCO 3.7.16

c. The fuel assemblies will be classified as acceptable for Region 1, Region 2, or Region 3 storage based upon their assembly burnup versus initial nominal enrichment. Cells acceptable for Region 1, Region 2, and Region 3 assembly storage are indicated in Figures 5.6-1 and 5.6-2. Assemblies that are acceptable for storage in Region 1, Region 2, and Region 3 must meet the design criteria that define the regions as follows:

See ITS Chapter 4.0

1. Region 1 is designed to accommodate new fuel with a maximum nominal enrichment of 4.95 wt% U-235, or spent fuel regardless of the discharge fuel burnup.

2. Region 2 is designed to accommodate fuel of 4.95% initial nominal enrichment burned to at least 50,000 MWD/MTU, or fuel of other enrichments with equivalent reactivity.

3. Region 3 is designed to accommodate fuel of 4.95% initial nominal enrichment burned to at least 38,000 MWD/MTU, or fuel of other enrichments with equivalent reactivity.

A.2

Add proposed LCO 3.7.16 ACTION A

A.2

Add proposed SR 3.7.16.1

M.1

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ITS 3.7.16

A.1

ITS

5.0 DESIGN FEATURES

5.6 FUEL STORAGE (Continued)

CRITICALITY - SPENT FUEL (Continued)

Table 3.7.16-1

The equivalent reactivity criteria for Region 2 and Region 3 is defined via the following equations:

For Region 2 Storage

Minimum Assembly Average Burnup in MWD/MTU =

$$-22{,}670 + 22{,}220\,E - 2{,}260\,E^2 + 149\,E^3$$

For Region 3 Storage

Minimum Assembly Average Burnup in MWD/MTU =

$$-26{,}745 + 18{,}746\,E - 1{,}631\,E^2 + 98.4\,E^3$$

Where E = Initial Peak Enrichment

A.2

COOK NUCLEAR PLANT-UNIT 2 Page 5-6 AMENDMENT 45, 131, 147, 182, 198, 228, 224

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DISCUSSION OF CHANGES
ITS 3.7.16, SPENT FUEL POOL STORAGE

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A.2 CTS 5.6.1.1 provides the criteria for fuel storage in the spent fuel storage pool, based on enrichment and burnup, for Regions 2 and 3. ITS LCO 3.7.16 requires that the initial enrichment and burnup of each fuel assembly stored in Region 2 or 3 meet these criteria as provided in ITS Table 3.7.16-1, "Acceptable Burnup Criteria." Furthermore, the value of E is clarified to state that it is in %. In addition, ITS 3.7.16 provides an explicit ACTION to initiate action to move the noncomplying fuel assembly from Region 2 or 3 if the requirements of the LCO are not met. This changes the CTS by moving the design criteria for spent fuel storage in Regions 2 and 3 to an explicit LCO and adds an explicit ACTION to be taken if the LCO is not met.

The purpose of CTS 5.6.1.1 is to provide the design criteria that define the spent fuel storage pool regions for storage of spent fuel assemblies to preserve assumptions in the spent fuel storage pool criticality analysis. Although the CTS does not provide an explicit Action associated with noncompliance with the design criteria of CTS 5.6.1.1, this condition would result in the spent fuel storage pool being in an unanalyzed condition, and immediate corrective action would be taken to restore compliance. This change is acceptable because the ITS preserves the assumptions of the spent fuel storage pool criticality analysis and provides an appropriate ACTION to restore compliance. This change is designated as an administrative change because it does not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

M.1 The CTS does not provide a Surveillance Requirement for spent fuel storage. ITS SR 3.7.16.1 requires a verification by administrative means that the initial enrichment and burnup of the fuel assembly is in accordance with the criteria of ITS Table 3.7.16-1 prior to storing any fuel assembly in Region 2 or 3 of the spent fuel storage pool. This changes the CTS by incorporating the requirements of ITS SR 3.7.16.1.

The safety related function of the spent fuel storage pool is to assure that k_{eff} is less than or equal to 0.95 with the racks fully loaded with fuel of the highest anticipated reactivity, and flooded with unborated water at the temperature within the operating range corresponding to the highest reactivity. This change is acceptable because the proposed SR provides assurance that fuel assembly storage will be controlled in accordance with the assumptions of the spent fuel

DISCUSSION OF CHANGES
ITS 3.7.16, SPENT FUEL POOL STORAGE

storage pool criticality analysis. This change is designated as more restrictive because it adds a new Surveillance Requirement to the CTS.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

None

LESS RESTRICTIVE CHANGES

None

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Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

CTS

~~Spent Fuel Pool Storage~~ 3.7.~~17~~ 16 ① ②

3.7 PLANT SYSTEMS

3.7.~~17~~ 16 ~~[~~Spent Fuel Pool Storage~~]~~ ①②

5.6.1.1.c

LCO 3.7.~~17~~ 16	The ~~combination of~~ initial enrichment and burnup of each fuel assembly stored in [Region 2] Region 2 or 3 shall be within the Acceptable [Burnup Domain] Burnup Criteria of [Figure] Table 3.7.~~17~~ 16-1 ~~or in accordance with Specification 4.3.1.1~~	② ① ③ ①
APPLICABILITY:	Whenever any fuel assembly is stored in [Region 2] Region 2 or 3 of the spent fuel storage pool.	①

ACTIONS

DOC A.2

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	A.1 - NOTE - LCO 3.0.3 is not applicable.	
	Initiate action to move the noncomplying fuel assembly from [Region 2] Region 2 or 3.	Immediately

①

SURVEILLANCE REQUIREMENTS

DOC M.1

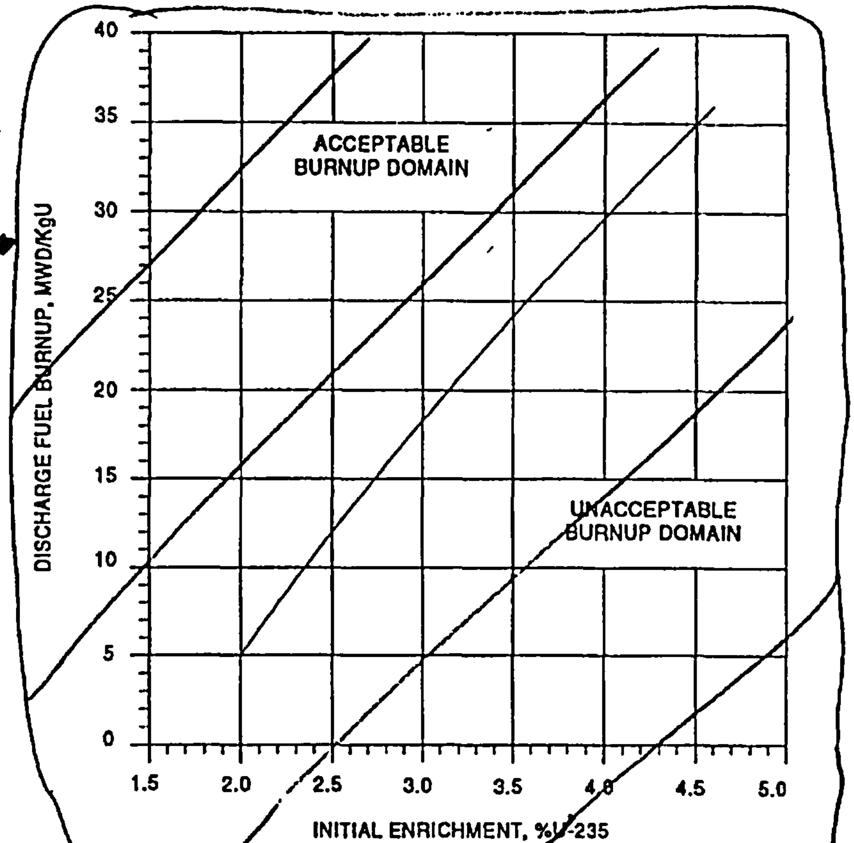
SURVEILLANCE		FREQUENCY
SR 3.7.~~17~~ 16.1	Verify by administrative means the initial enrichment and burnup of the fuel assembly is in accordance with ~~Figure 3.7.17-1 or Specification 4.3.1.1~~ Table 3.7.16-1.	Prior to storing the fuel assembly in [Region 2] Region 2 or 3.

② ① ③

Spent Fuel Pool Storage ①
3.7.17 ②

INSERT 1

③



Not to be used for Operation.
For Illustration purposes only.

Figure 3.7.17-1 (page 1 of 1)
Fuel Assembly Burnup Limits in Region 2

CTS

3 **INSERT 1**

5.6.1.1.c.2,
5.6.1.1.c.3

Table 3.7.16-1 (page 1 of 1)
ACCEPTABLE BURNUP CRITERIA

SPENT FUEL STORAGE POOL REGION	FUEL CRITERIA
Region 2	4.95% initial nominal enrichment burned to ≥ 50,000 MWD/MtU, or fuel of other enrichments with equivalent reactivity[(1)]
Region 3	4.95% initial nominal enrichment burned to ≥ 38,000 MWD/MtU, or fuel of other enrichments with equivalent reactivity[(1)]

(1) The equivalent reactivity criteria for Region 2 and Region 3 is defined via the following equations:

For Region 2 Storage

Minimum Assembly Average Burnup in MWD/MtU = $-22{,}670 + 22{,}220\,E - 2{,}260\,E^2 + 149\,E^3$

For Region 3 Storage

Minimum Assembly Average Burnup in MWD/MtU = $-26{,}745 + 18{,}746\,E - 1{,}631\,E^2 + 98.4\,E^3$

Where E = Initial Peak Enrichment (in %)

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.16, SPENT FUEL POOL STORAGE

1. The brackets have been removed and the proper plant specific information/value has been provided.

2. The CNP design does not include the Penetration Room Exhaust Air Cleanup System. Therefore, ISTS 3.7.14 is not included in the ITS and ISTS 3.7.17 is renumbered as ITS 3.7.16.

3. ISTS Figure 3.7.17-1 has been replaced by a Table (ITS Table 3.7.16-1) which provides the enrichment and burnup criteria for fuel storage in Regions 2 and 3 of the spent fuel storage pool, as was provided in CTS 5.6.1.1.

Improved Standard Technical Specifications (ISTS) Bases Markup and Justification for Deviations (JFDs)

1 2

B 3.7 Plant Systems

B 3.7.17 16 Spent Fuel Pool Storage

BASES

BACKGROUND

INSERT 1

~~In the Maximum Density Rack (MDR) [(Refs. 1 and 2)] design, the spent fuel storage pool is divided into two separate and distinct regions which, for the purpose of criticality considerations, are considered as separate pools. [Region 1], with [336] storage positions, is designed to accommodate new fuel with a maximum enrichment of [4.65] wt% U-235, or spent fuel regardless of the discharge fuel burnup. [Region 2], with [2670] storage positions, is designed to accommodate fuel of various initial enrichments which have accumulated minimum burnups within the acceptable domain according to Figure 3.7.17-1, in the accompanying LCO.~~ Fuel assemblies not meeting the criteria of ~~Figure [3.7.17-1]~~ Table 3.7.16-1 shall be stored in accordance with ~~paragraph~~ Specification 4.3.1.1 in Section 4.3, Fuel Storage.

3

2

2

The water in the spent fuel storage pool normally contains soluble boron, ~~which results~~ would result in large subcriticality margins under actual operating conditions for normal storage. However, the NRC guidelines, based upon the accident condition in which all soluble poison is assumed to have been lost, specify that the limiting k_{eff} of 0.95 all be evaluated in the absence of soluble boron. Hence, the design of ~~both~~ regions is based on the use of unborated water, which maintains each region in a subcritical condition ~~during normal operation with the regions fully loaded~~ for the allowed loading patterns. The double contingency principle discussed in ANSI N-16.1-1975 and the April 1978 NRC letter (Ref. ~~3~~ 1) allows credit for soluble boron under other abnormal or accident conditions, since only a single independent accident need be considered at one time. ~~For example, the most severe accident scenario is associated with the movement of fuel from [Region 1 to Region 2], and accidental misloading of a fuel assembly in [Region 2]. This could potentially increase the criticality of [Region 2].~~ INSERT 2 To mitigate these postulated criticality related accidents, boron is dissolved in the pool water. Safe operation ~~of the MDR~~ with no movement of assemblies may therefore be achieved by controlling the location of each assembly in accordance with the accompanying LCO. Prior to movement of an assembly, it is necessary to perform SR 3.7.16.1.

3

2

APPLICABLE SAFETY ANALYSES

~~The hypothetical accidents can only take place during or as a result of the movement of an assembly (Ref. 4).~~ 2 For these accident occurrences, the presence of soluble boron in the spent fuel storage pool (controlled by LCO 3.7.~~16~~ 15, "Fuel Storage Pool Boron Concentration") prevents criticality in both regions. By closely controlling the movement of each assembly

3

2

3 **INSERT 1**

The spent fuel storage pool is shared by Unit 1 and Unit 2. The high density spent fuel storage racks are divided into three separate and distinct regions. Region 1, with a maximum of 504 storage positions, is designed to accommodate new fuel with a maximum enrichment of 4.95 weight percent U-235, or spent fuel regardless of the discharge fuel burnup. Region 2, with a maximum of 1439 storage positions, is designed to accommodate high burnup fuel. Region 3, with a maximum of 1670 storage positions, is designed to accommodate intermediate burnup fuel.

3 **INSERT 2**

only accident scenario that has a potential for more than negligible positive reactivity effect is an inadvertent misplacement of a new fuel assembly. This accident has the potential for exceeding the limiting reactivity, should there be a concurrent and independent accident condition resulting in the loss of all soluble poison.

 2

BASES

APPLICABLE SAFETY ANALYSES (continued)

and by checking the location of each assembly after movement, the time period for potential accidents may be limited to a small fraction of the total operating time. During the remaining time period with no potential for accidents, the operation may be under the auspices of the accompanying LCO.

The configuration of fuel assemblies in the fuel storage pool satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii).

LCO

Table 3.7.16-1 The restrictions on the placement of fuel assemblies within the spent fuel pool, in accordance with ~~Figure 3.7.17-1~~ in the accompanying LCO, ensures the k_{eff} of the spent fuel storage pool will always remain < 0.95, assuming the pool to be flooded with unborated water. Fuel assemblies not meeting the criteria of ~~Figure 3.7.17-1~~ shall be stored in accordance with Specification 4.3.1.1 ~~in Section 4.3~~. Table 3.7.16-1 2 2 5

APPLICABILITY

This LCO applies whenever any fuel assembly is stored in ~~Region 2~~ of the fuel storage pool. Region 2 or 3 3

ACTIONS

A.1

Required Action A.1 is modified by a Note indicating that LCO 3.0.3 does not apply.

Table 3.7.16-1 Region 2 or 3 of

When the configuration of fuel assemblies stored in ~~Region 2~~ the spent fuel storage pool is not in accordance with ~~Figure 3.7.17-1~~ or paragraph 4.3.1.1, the immediate action is to initiate action to make the necessary fuel assembly movement(s) to bring the configuration into compliance with ~~Figure 3.7.17-1~~ or Specification 4.3.1.1. 3 2 2

Table 3.7.16-1

If unable to move irradiated fuel assemblies while in MODE 5 or 6, LCO 3.0.3 would not be applicable. If unable to move irradiated fuel assemblies while in MODE 1, 2, 3, or 4, the action is independent of reactor operation. Therefore, inability to move fuel assemblies is not sufficient reason to require a reactor shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.7.~~17~~.1 16 2

Table 3.7.16-1

This SR verifies by administrative means that the initial enrichment and burnup of the fuel assembly is in accordance with ~~Figure 3.7.17-1~~ ~~in the accompanying LCO~~. For fuel assemblies ~~in the unacceptable range of~~ 2 5

that do not meet the criteria of

 2

BASES

SURVEILLANCE REQUIREMENTS (continued)

Table 3.7.16-1 ~~Figure 3.7.17-1~~, performance of this SR will ensure compliance with Specification 4.3.1.1. 2

REFERENCES

~~[1. Callaway FSAR, Appendix 9.1A, "The Maximum Density Rack (MDR) Design Concept."~~

~~2. Description and Evaluation for Proposed Changes to Facility Operating Licenses DPR-39 and DPR-48 (Zion Power Station).]~~ 3

1 ~~3~~ Double contingency principle of ANSI N16.1-1975, as specified in the April 14, 1978 NRC letter (Section 1.2) and implied in the proposed revision to Regulatory Guide 1.13 (Section 1.4, Appendix A). 3

2 ~~4~~. (U)FSAR, Section 9.7.2 ~~15.7.4~~ 3 1

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.16 BASES, SPENT FUEL POOL STORAGE

1. The brackets have been removed and the proper plant specific information/value has been provided.

2. Changes are made to reflect consistency with or those changes made to the ISTS. Subsequent requirements are renumbered or revised, where applicable, to reflect the changes.

3. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

4. Editorial change made for enhanced clarity.

5. Changes are made to consistent with similar phrases in this Bases or other Bases.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.16, SPENT FUEL POOL STORAGE

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 17

ITS 3.7.17, Secondary Specific Activity

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

ITS

A.1

PLANT SYSTEMS

ACTIVITY

LIMITING CONDITION FOR OPERATION

LCO 3.7.17

3.7.1.4 The specific activity of the secondary coolant system shall be ≤0.10 µCi/gram DOSE EQUIVALENT I-131.

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

ACTION:

ACTION A

With the specific activity of the secondary coolant system > 0.10 µCi/gram DOSE EQUIVALENT I-131, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

SR 3.7.17.1

4.7.1.4 The specific activity of the secondary coolant system shall be determined to be within the limit ~~by performance of the sampling and analysis program of Table 4.7-2~~. every 31 days

L.1 M.1

ITS 3.7.17

A.1

ITS

TABLE 4.7-2

SECONDARY COOLANT SYSTEM SPECIFIC ACTIVITY
SAMPLE AND ANALYSIS PROGRAM

	TYPE OF MEASUREMENT AND ANALYSIS	MINIMUM FREQUENCY	
	1. ~~Gross Activity Determination~~	~~3 times per 7 days with a maximum time of 72 hours between samples~~	L.1
SR 3.7.17.1	2. ~~Isotopic Analysis~~ for DOSE EQUIVALENT I-131 Concentration	a) 1 per 31 days, ~~whenever the gross activity determination indicates iodine concentrations greater than 10% of the allowable limit.~~ ~~b) 1 per 6 months, whenever the gross activity determination indicates iodine concentrations below 10% of the allowable limit.~~	LA.1 M.1

ITS

A.1

PLANT SYSTEMS

ACTIVITY

LIMITING CONDITION FOR OPERATION

LCO 3.7.17

3.7.1.4 The specific activity of the secondary coolant system shall be $\leq$0.10 µCi/gram DOSE EQUIVALENT I-131.

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

ACTION:

ACTION A

With the specific activity of the secondary coolant system > 0.10 µCi/gram DOSE EQUIVALENT I-131, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

SR 3.7.17.1

4.7.1.4 The specific activity of the secondary coolant system shall be determined to be within the limit by performance of the sampling and analysis program of Table 4.7-2. every 31 days

L.1 M.1

A.1

ITS

TABLE 4.7-2

SECONDARY COOLANT SYSTEM SPECIFIC ACTIVITY
SAMPLE AND ANALYSIS PROGRAM

	TYPE OF MEASUREMENT AND ANALYSIS	SAMPLE AND ANALYSIS FREQUENCY	
	1. ~~Gross Activity Determination~~	At least once per 72 hours.	L.1
SR 3.7.17.1	2. Isotopic Analysis for DOSE EQUIVALENT I-131 Concentration	a) 1 per 31 days, ~~whenever the gross activity determination indicates iodine concentrations greater than 10% of the allowable limit.~~	LA.1
		~~b) 1 per 6 months, whenever the gross activity determination indicates iodine concentrations below 10% of the allowable limit.~~	M.1

DISCUSSION OF CHANGES
ITS 3.7.17, SECONDARY SPECIFIC ACTIVITY

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

M.1 CTS Table 4.7-2 Item 2 requires the DOSE EQUIVALENT I-131 sampling frequency to be once per 31 days whenever the gross activity determination indicates iodine concentration greater than 10% of the allowable limit. CTS Table 4.7-2 Item 2 allows the sampling frequency for the DOSE EQUIVALENT I-131 to be extended to once per 6 months whenever the gross activity determination indicates iodine concentrations below 10% of the allowable limits. ITS SR 3.7.17.1 does not provide this extended time frame for determining the DOSE EQUIVALENT I-131 and requires verification of specific activity of the secondary coolant every 31 days. This changes the CTS by deleting CTS Table 4.7-2 Item 2.b and the qualifying statement of "whenever the gross activity determination indicates iodine concentrations greater than 10% of the allowable limit" in Item 2.a, and keeping the Frequency at 31 days all the time.

This change is acceptable because the 31 day Frequency is appropriate to detect trends in the level of DOSE EQUIVALENT I-131 and allows for appropriate action to be taken to maintain levels below the LCO limit. This change is designated as more restrictive because it requires the DOSE EQUIVALENT I-131 concentration to be determined every 31 days whenever the unit is in MODES 1, 2, 3, and 4 while not allowing a Frequency extension to once every 6 months based on the gross activity determination.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS Table 4.7-2, Item 2 requires an isotopic analysis to determine whether DOSE EQUIVALENT I-131 concentration is within limit. ITS SR 3.7.17.1 requires the verification that specific activity of the secondary coolant is within limit. This changes the CTS by moving the detail that an isotopic analysis must be performed to satisfy the requirements of the Surveillance to the Bases.

DISCUSSION OF CHANGES
ITS 3.7.17, SECONDARY SPECIFIC ACTIVITY

The removal of this detail for performing a Surveillance Requirement from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. ITS SR 3.7.17.1 still retains the requirement to verify secondary coolant DOSE EQUIVALENT I-131 is within limit. Also, this change is acceptable because this type of procedural detail will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L.1 *(Category 5 – Deletion of Surveillance Requirement)* CTS Table 4.7-2 Item 1 requires that the gross activity determination be completed 3 times per 7 days with a maximum time of 72 hours between samples (Unit 1) or once per 72 hours (Unit 2). ITS 3.7.17 does not require any sampling to be performed to determine the gross activity of the secondary coolant. This changes the CTS by deleting the requirement for gross activity determination.

The purpose of CTS Table 4.7-2 Item 1 is to determine the gross activity in order to determine the sampling Frequency for secondary coolant DOSE EQUIVALENT I-131. Based on the gross activity, the sample Frequency for determining DOSE EQUIVALENT I-131 can be extended to once per 6 months from once per 31 days. This change is acceptable because the deleted Surveillance Requirement is not necessary to verify that the values used to meet the LCO are consistent with the safety analysis. Thus, appropriate values continue to be tested in a manner and at a Frequency necessary to give confidence that the assumptions in the safety analyses are protected. ITS SR 3.7.17.1 requires that the DOSE EQUIVALENT I-131 be determined every 31 days without any allowance for an extension of this Frequency. The secondary coolant DOSE EQUIVALENT I-131 is used in the accident analyses. The gross activity of the secondary coolant is not used in any accident analysis. This change is designated as less restrictive because a Surveillance that is required in the CTS will not be required in the ITS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

 (1)

3.7 PLANT SYSTEMS

CTS

3.7.10 (7) Secondary Specific Activity (1)

LCO 3.7.1.4

LCO 3.7.10 The specific activity of the secondary coolant shall be ≤ 0.10 μCi/gm DOSE EQUIVALENT I-131. (2)

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

ACTIONS

Action

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Specific activity not within limit.	A.1 Be in MODE 3. AND A.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

4.7.1.4 Table 4.7-2

SURVEILLANCE		FREQUENCY
SR 3.7.10.1 (7)	Verify the specific activity of the secondary coolant is ≤ 0.10 μCi/gm DOSE EQUIVALENT I-131.	31 days

(2)

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JUSTIFICATION FOR DEVIATIONS
ITS 3.7.17, SECONDARY SPECIFIC ACTIVITY

1. ISTS 3.7.14, Penetration Room Exhaust Air Cleanup System, is not included in the CNP ITS due to design differences. Therefore, ISTS 3.7.18 is renumbered as ITS 3.7.17.

2. The brackets are removed and the proper plant specific information/value is provided and numbering changed to reflect proper ITS sequencing of the LCOs.

Improved Standard Technical Specifications (ISTS) Bases Markup and Justification for Deviations (JFDs)

B 3.7 PLANT SYSTEMS 1

B 3.7.18 7 Secondary Specific Activity

BASES

BACKGROUND

Activity in the secondary coolant results from steam generator tube outleakage from the Reactor Coolant System (RCS). Under steady state conditions, the activity is primarily iodines with relatively short half lives and, thus, indicates current conditions. During transients, I-131 spikes have been observed as well as increased releases of some noble gases. Other fission product isotopes, as well as activated corrosion products in lesser amounts, may also be found in the secondary coolant.

A limit on secondary coolant specific activity during power operation minimizes releases to the environment because of normal operation, anticipated operational ~~occurrences~~ transients, and accidents. 3

This limit is lower than the activity value that might be expected from a ~~1 gpm~~ allowed by tube leak (LCO 3.4.13, "RCS Operational LEAKAGE") of primary coolant at the limit of [1.0] μCi/gm (LCO 3.4.16, "RCS Specific Activity"). The steam line failure is assumed to result in the release of the noble gas and iodine activity contained in the steam generator inventory, the feedwater, and the reactor coolant LEAKAGE. Most of the iodine isotopes have short half lives (i.e., < 20 hours). 3 2

With the specified activity limit, the resultant ~~2 hour~~ 2.2 thyroid dose to a person at the ~~exclusion area~~ site boundary (EAB) would be about ~~0.58~~ rem ~~if the main steam safety valves (MSSVs) open for 2 hours~~ following a trip from full power. INSERT 1 3

Operating a unit at the allowable limits could result in a 2 hour ~~EAB~~ site boundary exposure of a small fraction of the 10 CFR 100 (Ref. 1) limits ~~or the limits established as the NRC staff approved licensing basis.~~ INSERT 2 3

APPLICABLE SAFETY ANALYSES

4 The accident analysis of the main steam line break (MSLB), as discussed in the FSAR, ~~Chapter~~ Section ~~15~~ 14.2.7 (Ref. 2) assumes the initial secondary coolant specific activity to have a radioactive isotope concentration of [0.10] μCi/gm DOSE EQUIVALENT I-131. This assumption is used in the analysis for determining the radiological consequences of the postulated accident. The accident analysis, based on this and other assumptions, shows that the radiological consequences of an MSLB do not exceed a small fraction of the unit ~~EAB~~ site boundary limits (Ref. 1) for whole body and thyroid dose rates. INSERT 3 3 5 2 2 3

3 **INSERT 1**

coincident with a loss of offsite power and venting steam from the intact steam generators for 30 days

3 **INSERT 2**

and a control room dose limit of 5 rem total effective dose equivalent (TEDE).

3 **INSERT 3**

and a control room dose limit of 5 rem TEDE (Ref. 2)

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BASES

APPLICABLE SAFETY ANALYSES (continued)

main steam safety valves (3)

With the loss of offsite power, the remaining steam generators are available for core decay heat dissipation by venting steam to the atmosphere through the MSSVs and steam generator ~~atmospheric dump valves (ADVs)~~. The Auxiliary Feedwater System supplies the necessary makeup to the steam generators. Venting continues until the reactor coolant temperature and pressure have decreased sufficiently for the Residual Heat Removal System to complete the cooldown. (SG) (3)

power operated relief valves (PORVs)

In the evaluation of the radiological consequences of this accident, the activity released from the steam generator connected to the failed steam line is assumed to be released directly to the environment. The unaffected steam generator is assumed to discharge steam and any entrained activity through the MSSVs and ~~ADVs~~ during the event. Since no credit is taken in the analysis for activity plateout or retention, the resultant radiological consequences represent a conservative estimate of the potential integrated dose due to the postulated steam line failure. (are) (5) SG PORVs (5) (5)

Secondary specific activity limits satisfy Criterion 2 of 10 CFR 50.36(c)(2)(ii). (3)

LCO

As indicated in the Applicable Safety Analyses, the specific activity of the secondary coolant is required to be ≤ [0.10] μCi/gm DOSE EQUIVALENT I-131 to limit the radiological consequences of a Design Basis Accident (DBA) to a small fraction of the required limit (Ref. 1). (2) site boundary INSERT 4 (3)

Monitoring the specific activity of the secondary coolant ensures that when secondary specific activity limits are exceeded, appropriate actions are taken in a timely manner to place the unit in an operational MODE that would minimize the radiological consequences of a DBA.

APPLICABILITY

In MODES 1, 2, 3, and 4, the limits on secondary specific activity apply due to the potential for secondary steam releases to the atmosphere.

In MODES 5 and 6, the steam generators are not being used for heat removal. Both the RCS and steam generators are depressurized, and primary to secondary LEAKAGE is minimal. Therefore, monitoring of secondary specific activity is not required.

3

INSERT 4

and a control room dose limit of 5 rem TEDE (Ref. 2)

 1

BASES

ACTIONS

A.1 and A.2 Specific activity

DOSE EQUIVALENT I-131 exceeding the allowable value ~~in~~ of the secondary coolant ~~is an indication of a problem in the RCS and contributes to increased post accident doses.~~ If the secondary specific activity is not ~~cannot be restored to~~ within limits ~~within the associated Completion Time~~, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in 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 unit systems. 4

SURVEILLANCE REQUIREMENTS

SR 3.7.18.1 7 1

This SR verifies that the secondary specific activity is within the limits of the accident analysis. A gamma isotopic analysis of the secondary coolant, which determines DOSE EQUIVALENT I-131, confirms the validity of the safety analysis assumptions as to the source terms in post accident releases. It also serves to identify and trend any unusual isotopic concentrations that might indicate changes in reactor coolant activity or LEAKAGE. The 31 day Frequency is based on the detection of increasing trends of the level of DOSE EQUIVALENT I-131, and allows for appropriate action to be taken to maintain levels below the LCO limit.

REFERENCES

1. 10 CFR 100.11.
3. ~~2.~~ U FSAR, ~~Chapter 15~~ Section 14.2.7 2 3

INSERT 5 3

3 **INSERT 5**

2. 10 CFR 50, Appendix A, GDC 19.

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JUSTIFICATION FOR DEVIATIONS
ITS 3.7.17 BASES, SECONDARY SPECIFIC ACTIVITY

1. Changes are made to the Bases to be consistent with changes made to the Specification.

2. The brackets have been removed and the proper plant specific information/value has been provided.

3. Changes are made (additions, deletions, and/or changes) to the ISTS Bases, which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

4. Changes are made to be consistent with the actual Specification.

5. Typographical/grammatical error corrected.

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.17, SECONDARY SPECIFIC ACTIVITY

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 18

Relocated/Deleted Current Technical Specifications (CTS)

CTS 3/4.7.2, Steam Generator Pressure/Temperature Limitation

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

R.1

PLANT SYSTEMS

3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

LIMITING CONDITION FOR OPERATION

3.7.2.1 The temperatures of both the primary and secondary coolants in the steam generators shall be > 70°F when the pressure of either coolant in the steam generator is > 200 psig.

APPLICABILITY: At all times.

ACTION:

With the requirements of the above specification not satisfied:

a. Reduce the steam generator pressure of the applicable side to ≤ 200 psig within 30 minutes, and

b. Perform an analysis to determine the effect of the overpressurization on the structural integrity of the steam generator. Determine that the steam generator remains acceptable for continued operation prior to increasing its temperatures above 200°F.

SURVEILLANCE REQUIREMENTS

4.7.2.1 The pressure in each side of the steam generator shall be determined to be < 200 psig at least once per hour when the temperature of either the primary or secondary coolant in the steam generator is < 70°F.

CTS 3/4.7.2

R.1

PLANT SYSTEMS

3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

LIMITING CONDITION FOR OPERATION

3.7.2.1 The temperatures of both the primary and secondary coolants in the steam generators shall be > 70°F when the pressure of either coolant in the steam generator is > 200 psig.

APPLICABILITY: At all times.

ACTION:

With the requirements of the above specification not satisfied:

a. Reduce the steam generator pressure of the applicable side to ≤ 200 psig within 30 minutes, and

b. Perform an engineering evaluation to determine the effect of the overpressurization on the structural integrity of the steam generator. Determine that the steam generator remains acceptable for continued operation prior to increasing its temperatures above 200°F.

SURVEILLANCE REQUIREMENTS

4.7.2.1 The pressure in each side of the steam generator shall be determined to be < 200 psig at least once per hour when the temperature of either the primary or secondary coolant is < 70°F.

COOK NUCLEAR PLANT - UNIT 2 3/4 7-11

DISCUSSION OF CHANGES
CTS 3/4.7.2, STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

ADMINISTRATIVE CHANGES

None

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

R.1 CTS 3.7.2.1 states that the temperature of both the primary and secondary coolants in the steam generators shall be greater than 70°F when the pressure of either coolant in the steam generator is greater than 200 psig. The limitation on steam generator pressures and temperatures ensures that pressure-induced stresses on the steam generators do not exceed the maximum allowable fracture toughness limits. These pressure and temperature limits are based on maintaining a steam generator RT_{NDT} sufficient to prevent brittle fracture. As such, the Technical Specification places limits on variables consistent with structural analysis results. However, these limits are not initial condition assumptions of a design basis accident (DBA) or transient. These limits represent operating restrictions and Criterion 2 includes operating restrictions. However, it should be noted that in the Final Policy Statement the Criterion 2 discussion specified only those operating restrictions required to preclude unanalyzed accidents and transients be included in Technical Specifications. This Specification does not meet the criteria for retention in the ITS; therefore, it will be retained in the Technical Requirements Manual (TRM).

This change is acceptable because CTS 3.7.2.1 does not meet the 10 CFR 50.36(c)(2)(ii) criteria for inclusion into the ITS.

10 CFR 50.36(c)(2)(ii) Criteria Evaluation:

1. The Steam Generator Pressure/Temperature Limitation is not installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary. The Steam Generator Pressure/Temperature Limitation Specification does not meet criterion 1.

2. The Steam Generator Pressure/Temperature Limitation is not a process variable, design feature, or operating restriction that is an initial condition of a DBA or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. The Steam Generator Pressure/Temperature Limitation Specification does not meet criterion 2.

3. The Steam Generator Pressure/Temperature Limitation is not a structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a DBA or transient that either assumes

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DISCUSSION OF CHANGES
CTS 3/4.7.2, STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

the failure of or presents a challenge to the integrity of a fission product barrier. The Steam Generator Pressure/Temperature Limitation Specification does not meet criterion 3.

4. The Steam Generator Pressure/Temperature Limitation is not a structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety. As discussed in Section 4.0, (Appendix A, page A-55) and summarized in Table 1 of WCAP-11618, the Steam Generator Pressure/Temperature Limitation was found to be a non-significant risk contributor to core damage frequency and offsite releases. I&M has reviewed this evaluation, considers it applicable to CNP Units 1 and 2, and concurs with this assessment. The Steam Generator Pressure/Temperature Limitation Specification does not meet criterion 4.

Since the 10 CFR 50.36(c)(2)(ii) criteria have not been met, the Steam Generator Pressure/Temperature Limitation LCO and associated Surveillances may be relocated out of the Technical Specifications. The Steam Generator Pressure/Temperature Limitation Specification will be relocated to the TRM. Changes to the TRM will be controlled by the provisions of 10 CFR 50.59. This change is designated as a relocation because the LCO did not meet the criteria in 10 CFR 50.36(c)(2)(ii) and has been relocated to the TRM.

REMOVED DETAIL CHANGES

None

LESS RESTRICTIVE CHANGES

None

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
CTS 3/4.7.2, STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

There are no specific NSHC discussions for this Specification.

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CTS 3/4.7.7 (Unit 1) and CTS 3/4.7.8 (Unit 2), Sealed Source Contamination

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

R.1

3/4.7.7 SEALED SOURCE CONTAMINATION

LIMITING CONDITION FOR OPERATION

3.7.7.1 Each sealed source containing radioactive material either in excess of 100 microcuries of beta and/or gamma emitting material or 5 microcuries of alpha emitting material shall be free of ≥ 0.005 microcuries of removable contamination.

APPLICABILITY: At all times.

ACTION:

a. Each sealed source with removable contamination in excess of the above limits shall be immediately withdrawn from use and:

1. Either decontaminated and repaired, or
2. Disposed of in accordance with Commission Regulations.

b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.7.1.1 Test Requirements - Each sealed source shall be tested for leakage and/or contamination by:

a. The licensee, or
b. Other persons specifically authorized by the Commission or an Agreement State.

The test method shall have a detection sensitivity of at least 0.005 microcuries per test sample.

4.7.7.1.2 Test Frequencies - Each category of sealed sources shall be tested at the frequency described below.

a. Sources in use (excluding startup sources and fission detectors previously subjected to core flux) - At least once per six months for all sealed sources containing radioactive materials.

CTS 3/4.7.7

R.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.7 PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

1. With a half-life greater than 30 days (excluding Hydrogen 3), and

2. In any form other than gas.

b. Stored sources not in use - Each sealed source and fission detector shall be tested prior to use or transfer to another licensee unless tested within the previous six months. Sealed sources and fission detectors transferred without a certificate indicating the last test date shall be tested prior to being placed into use.

c. Startup sources - Each sealed startup source and fission detector shall be tested within 31 days prior to being subjected to core flux and following repair or maintenance to the source.

4.7.7.1.3 Reports - A Special Report shall be prepared and submitted to the Commission on an annual basis if sealed source or fission detector leakage tests reveal the presence of ≥ 0.005 microcuries of removable contamination.

CTS 3/4.7.8

R.1

3/4.7.8 SEALED SOURCE CONTAMINATION

LIMITING CONDITION FOR OPERATION

3.7.8.1 Each sealed source containing radioactive material either in excess of 100 microcuries of beta and/or gamma emitting material or 5 microcuries of alpha emitting material, shall be free of ≥ 0.005 microcuries of removable contamination.

APPLICABILITY: At all times.

ACTION:

a. Each sealed source with removable contamination in excess of the above limits shall be immediately withdrawn from use and:

1. Either decontaminated and repaired, or

2. Disposed of in accordance with Commission Regulations.

b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.8.1.1 Test Requirements - Each sealed source shall be tested for leakage and/or contamination by:

a. The licensee, or

b. Other persons specifically authorized by the Commission or an Agreement State.

The test method shall have a detection sensitivity of at least 0.005 microcuries per test sample.

4.7.8.1.2 Test Frequencies - Each category of sealed sources shall be tested at the frequency described below.

a. Sources in use (excluding startup sources and fission detectors previously subjected to core flux) - At least once per six months for all sealed sources containing radioactive materials.

CTS 3/4.7.8

R.1

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

1. With a half-life greater than 30 days (excluding Hydrogen 3), and

2. In any form other than gas.

b. Stored sources not in use - Each sealed source and fission detector shall be tested prior to use or transfer to another licensee unless tested within the previous six months. Sealed sources and fission detectors transferred without a certificate indicating the last test date shall be tested prior to being placed into use.

c. Startup sources and fission detectors - Each sealed startup source and fission detector shall be tested within 31 days prior to being subjected to core flux or installed in the core and following repair or maintenance to the source.

4.7.8.1.3 Reports - A report shall be prepared and submitted to the Commission on an annual basis if sealed source or fission detector leakage tests reveal the presence of ≥ 0.005 microcuries of removable contamination.

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DISCUSSION OF CHANGES
CTS 3/4.7.7 (UNIT 1) and CTS 3/4.7.8 (UNIT 2), SEALED SOURCE CONTAMINATION

ADMINISTRATIVE CHANGES

None

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

R.1 CTS 3.7.7.1 (Unit 1) and CTS 3.7.8.1 (Unit 2) state that each sealed source containing radioactive material either in excess of 100 microcuries of beta and/or gamma emitting materials or 5 microcuries of alpha emitting material, shall be free of greater than or equal to 0.005 microcuries of removable contamination. The limitations on sealed source contamination are intended to ensure that the total body and individual organ irradiation doses do not exceed allowable limits in the event of ingestion or inhalation. This is done by imposing a maximum limitation of $\leq$ 0.005 microcuries of removable contamination on each sealed source. This requirement and the associated Surveillance Requirements bear no relation to the conditions or limitations that are necessary to ensure safe reactor operation. This Specification does not meet the criteria for retention in the ITS; therefore, it will be retained in the Technical Requirements Manual (TRM).

This change is acceptable because CTS 3.7.7.1 (Unit 1) and CTS 3.7.8.1 (Unit 2) do not meet the 10 CFR 50.36(c)(2)(ii) criteria for inclusion into the ITS.

10 CFR 50.36(c)(2)(ii) Criteria Evaluation:

1. Sealed Source Contamination is not installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary. The Sealed Source Contamination Specification does not meet criterion 1.

2. Sealed Source Contamination is not a process variable, design feature, or operating restriction that is an initial condition of a DBA or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. The Sealed Source Contamination Specification does not meet criterion 2.

3. Sealed Source Contamination is not a structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a DBA or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. The Sealed Source Contamination Specification does not meet criterion 3.

4. Sealed Source Contamination is not a structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety. As discussed in Section 4.0, (Appendix A, page A-59) and summarized in Table 1 of WCAP-11618,

DISCUSSION OF CHANGES
CTS 3/4.7.7 (UNIT 1) and CTS 3/4.7.8 (UNIT 2), SEALED SOURCE CONTAMINATION

the Sealed Source Contamination was found to be a non-significant risk contributor to core damage frequency and offsite releases. I&M has reviewed this evaluation, considers it applicable to CNP Units 1 and 2, and concurs with this assessment. The Sealed Source Contamination Specification does not meet criterion 4.

Since the 10 CFR 50.36(c)(2)(ii) criteria have not been met, the Sealed Source Contamination LCO and associated Surveillances may be relocated out of the Technical Specifications. The Sealed Source Contamination Specification will be relocated to the TRM. Changes to the TRM will be controlled by the provisions of 10 CFR 50.59. This change is designated as relocation because the LCO did not meet the criteria in 10 CFR 50.36(c)(2)(ii) and has been relocated to the TRM.

REMOVED DETAIL CHANGES

None

LESS RESTRICTIVE CHANGES

None

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
CTS 3/4.7.7 (UNIT 1) and CTS 3/4.7.8 (UNIT 2), SEALED SOURCE CONTAMINATION

There are no specific NSHC discussions for this Specification.

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CTS 3/4.7.8 (Unit 1) and CTS 3/4.7.7 (Unit 2), Snubbers

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

LA.1

PLANT SYSTEMS

3/4.7.8 SNUBBERS

LIMITING CONDITION FOR OPERATION

3.7.8.1 All safety-related snubbers shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4. (MODES 5 and 6 for snubbers located on systems required OPERABLE in those MODES).

ACTION:

With one or more snubbers inoperable, within 72 hours replace or restore the inoperable snubber(s) to OPERABLE status and perform an engineering evaluation per Specification 4.7.8.1.c on the supported component or declare the supported system inoperable and follow the appropriate ACTION statement for that system.

SURVEILLANCE REQUIREMENTS

4.7.8.1 Each snubber shall be demonstrated OPERABLE by performance of the following augmented inservice inspection program and the requirements of Specification 4.0.5.

a. Visual Inspections

Snubbers are categorized as inaccessible or accessible during reactor operation. Each of these categories (inaccessible and accessible) may be inspected independently according to the schedule determined by Table 3.7-4. The visual inspection interval for each type of snubber shall be determined based upon the criteria provided in Table 3.7-4 and the first inspection interval determined using this criteria shall be based upon the previous inspection interval as established by the requirements in effect before Amendment No. 173.

b. Visual Inspection Acceptance Criteria

Visual inspections shall verify (1) that there are no visible indications of damage or impaired OPERABILITY, (2) attachments to the foundation or supporting structure are secure, and (3) in those locations where snubber movement can be manually induced without disconnecting the snubber, that the snubber has freedom of movement and is not frozen up. Snubbers which appear inoperable as a result of visual inspections shall be classified as unacceptable and may be reclassified as acceptable for the purpose of establishing the next visual inspection interval, providing that (1) the cause of the rejection is clearly established and remedied for that particular snubber and for other snubbers that may be generically susceptible; and (2) the affected snubber is

CTS 3/4.7.8

LA.1

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

functionally tested in the as found condition and determined OPERABLE per Specification 4.7.8.1.d. All snubbers found connected to an inoperable common hydraulic fluid reservoir shall be counted as unacceptable for determining the next inspection interval. A review and evaluation shall be performed and documented to justify continued operation with an unacceptable snubber. If continued operation cannot be justified, the snubber shall be declared inoperable and the ACTION requirements shall be met.

c. Functional Tests

At least once per 24 months during shutdown, a representative sample (14%) of the total of each type of snubber in use in the plant shall be functionally tested either in place or in a bench test. For each snubber that does not meet the functional test acceptance criteria of Specification 4.7.8.1.d an additional 10% of that type of Snubber shall be functionally tested.

The representative sample selected for functional testing shall include the various configurations, operating environments and the range of size and capacity of snubbers. At least 25% of the snubbers in the representative sample shall include snubbers from the following three categories:

1. The first snubber away from each reactor vessel nozzle

2. Snubbers within 5 feet of heavy equipment (valve, pump, turbine, motor, etc.)

3. Snubbers within 10 feet of the discharge from a safety relief valve

Snubbers that are identified as "Especially Difficult to Remove" or in "High Radiation Zones During Shutdown" shall also be included in the representative sample.*

In addition to the regular sample, snubbers which failed the previous functional test shall be retested during the next test period. If a spare snubber has been installed in place of a failed snubber, then both the failed snubber (if it is repaired and installed in another position) and the spare snubber shall be retested. Test results of these snubbers may not be included for the re-sampling.

* Permanent or other exemptions from functional testing for individual snubbers in these categories may be granted by the Commission only if a justifiable basis for exemption is presented and/or snubber life destructive testing was performed to qualify snubber operability for all design conditions at either the completion of their fabrication or at a subsequent date.

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LA.1

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

If any snubber selected for functional testing either fails to lock or fails to move, i.e., frozen in place, the cause will be evaluated and if caused by manufacturer or design deficiency all snubbers of the same design subject to the same defect shall be functionally tested. This testing requirement shall be independent of the requirements stated above the snubbers not meeting the functional test acceptance criteria.

For the snubber(s) found inoperable, an engineering evaluation shall be performed on the components which are supported by the snubber(s). The purpose of this engineering evaluation shall be to determine if the components supported by the snubber(s) were adversely affected by the inoperability of the snubber(s) in order to ensure that the supported component remains capable of meeting the designed service.

d. Hydraulic Snubbers Functional Test Acceptance Criteria

The hydraulic snubber functional test shall verify that:

1. Activation (restraining action) is achieved within the specified range of velocity or acceleration in both tension and compression.

2. Snubber bleed, or release rate, where required, is within the specified range in compression or tension. For snubbers specifically required to not displace under continuous load, the ability of the snubber to withstand load without displacement shall be verified.

e. Snubber Service Life Monitoring

A record of the service life of each snubber, the date at which the designated service life commences and the installation and maintenance records on which the designated service life is based shall be maintained as required by Specification 6.10.2.

Concurrent with the first inservice visual inspection and at least once per 18 months thereafter, the installation and maintenance records for all safety-related snubbers shall be reviewed to verify that the indicated service life has not been exceeded or will not be exceeded prior to the next scheduled snubber service life review. If the indicated service life will be exceeded prior to the next scheduled snubber service life review, the snubber service life shall be reevaluated or the snubber shall be replaced or reconditioned so as to extend its service life beyond the date of the next scheduled service life review. This reevaluation, replacement or reconditioning shall be indicated in the records.

COOK NUCLEAR PLANT - UNIT 1 3/4 7-30 AMENDMENT NO. ~~104~~ 173

LA.1

TABLE 3.7-4
SNUBBER VISUAL INSPECTION INTERVAL

NUMBER OF UNACCEPTABLE SNUBBERS

Population or Category (Notes 1 and 2)	Column A Extend Interval (Notes 3 and 6)	Column B Repeat Interval (Notes 4 and 6)	Column C Reduce Interval (Notes 5 and 6)
1	0	0	1
80	0	0	2
100	0	1	4
150	0	3	8
200	2	5	13
300	5	12	25
400	8	18	36
500	12	24	48
750	20	40	78
1000 or greater	29	56	109

Note 1: The next visual inspection interval for a snubber population or category size shall be determined based upon the previous inspection interval and the number of unacceptable snubbers found during that interval. Snubbers may be categorized, based upon their accessibility during power operation, as accessible or inaccessible. These categories may be examined separately or jointly. However, the licensee must make and document that decision before any inspection and shall use that decision as the basis upon which to determine the next inspection interval for that category.

Note 2: Interpolation between population or category sizes and the number of unacceptable snubbers is permissible. Use next lower integer for the value of the limit for Columns A, B, or C if that integer includes a fractional value of unacceptable snubbers as determined by interpolation.

CTS 3/4.7.8

LA.1

TABLE 3.7-4 (Continued)

Note 3: If the number of unacceptable snubbers is equal to or less than the number in Column A, the next inspection interval may be twice the previous interval but not greater than 48 months.

Note 4: If the number of unacceptable snubbers is equal to or less than the number in Column B but greater than the number in Column A, the next inspection interval shall be the same as the previous interval.

Note 5: If the number of unacceptable snubbers is equal to or greater than the number in Column C, the next inspection interval shall be two-thirds of the previous interval. However, if the number of unacceptable snubbers is less than the number in Column C but greater than the number in Column B, the next interval shall be reduced proportionally by interpolation, that is, the previous interval shall be reduced by a factor that is one-third of the ratio of the difference between the number of unacceptable snubbers found during the previous interval and the number in Column B to the difference in the numbers in Columns B and C.

Note 6: The provisions of Specifications 4.0.2 are applicable for all inspection intervals up to and including 48 months.

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CTS 3/4.7.7

LA.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.7 PLANT SYSTEMS

3/4.7.7 SNUBBERS

LIMITING CONDITION FOR OPERATION

3.7.7.1 All safety-related snubbers shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4. (MODES 5 and 6 for snubbers located on systems required OPERABLE in those MODES).

ACTION:

With one or more snubbers inoperable, within 72 hours replace or restore the inoperable snubber(s) to OPERABLE status and perform an engineering evaluation per Specification 4.7.7.1.c on the supported component or declare the supported system inoperable and follow the appropriate ACTION statement for that system.

SURVEILLANCE REQUIREMENTS

4.7.7.1 Each snubber shall be demonstrated OPERABLE by performance of the following augmented inservice inspection program and the requirements of Specification 4.0.5.

a. Visual Inspection

Snubbers are categorized as inaccessible or accessible during reactor operation. Each of these categories (inaccessible and accessible) may be inspected independently according to the schedule determined by Table 3.7-9. The visual inspection interval for each type of snubber shall be determined based upon the criteria provided in Table 3.7-9 and the first inspection interval determined using this criteria shall be based upon the previous inspection interval as established by the requirements in effect before Amendment No 156.

b. Visual Inspection Acceptance Criteria

Visual inspections shall verify (1) that there are no visible indications of damage or impaired OPERABILITY, (2) attachments to the foundation or supporting structure are secure, and (3) in those locations where snubber movement can be manually induced without disconnecting the snubber, that the snubber has freedom of movement and is not frozen up. Snubbers which appear inoperable as a result of visual inspections shall be classified as unacceptable and may be reclassified as acceptable for the purpose of establishing the next visual inspection interval, providing that (1) the cause of the rejection is clearly established and remedied for that

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CTS 3/4.7.7

LA.1

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

particular snubber and for other snubbers that may be generically susceptible; and (2) the affected snubber is functionally tested in the as-found condition and determined OPERABLE per Specifications 4.7.7.1.d. All snubbers found connected to an inoperable common hydraulic fluid reservoir shall be counted as unacceptable for determining the next inspection interval. A review and evaluation shall be performed and documented to justify continued operation with an unacceptable snubber. If continued operation cannot be justified, the snubber shall be declared inoperable and the ACTION requirements shall be met.

c. Functional Tests

At least once per 24 months during shutdown, a representative sample (14%) of the total of each type of snubber in use in the plant shall be functionally tested either in place or in a bench test. For each snubber that does not meet the functional test acceptance criteria of Specification 4.7.7.1.d an additional 10% of that type of snubber shall be functionally tested.

The representative sample selected for functional testing shall include the various configurations, operating environments and the range of size and capacity of snubbers. At least 25% of the snubbers in the representative sample shall include snubbers from the following three categories:

1. The first snubber away from each reactor vessel nozzle
2. Snubbers within 5 feet of heavy equipment (valve, pump, turbine, motor, etc.)
3. Snubbers within 10 feet of the discharge from a safety relief valve

Snubbers that are identified as "Especially Difficult to Remove" or in "High Radiation Zones During Shutdown" shall also be included in the representative sample.

In addition to the regular sample, snubbers which failed the previous functional test shall be retested during the next test period. If a spare snubber has been installed in place of a failed snubber, then both the failed snubber (if it is repaired and

* Permanent or other exemptions from functional testing for individual snubbers in these categories may be granted by the Commission only if a justifiable basis for exemption is presented and/or snubber life destructive testing was performed to qualify snubber operability for all design conditions at either the completion of their fabrication or at a subsequent date.

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CTS 3/4.7.7

LA.1

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

installed in another position) and the spare snubber shall be retested. Test results of these snubbers may not be included for the re-sampling.

If any snubber selected for functional testing either fails to lockup or fails to move, i.e., frozen in place, the cause will be evaluated and if caused by manufacturer or design deficiency all snubbers of the same design subject to the same defect shall be functionally tested. This testing requirement shall be independent of the requirements stated above for snubbers not meeting the functional test acceptance criteria.

For the snubber(s) found inoperable, an engineering evaluation shall be performed on the components which are supported by the snubber(s). The purpose of this engineering evaluation shall be to determine if the components supported by the snubber(s) were adversely affected by the inoperability of the snubber(s) in order to ensure that the supported component remains capable of meeting the designed service.

d. Hydraulic Snubbers Functional Test Acceptance Criteria

The hydraulic snubber functional test shall verify that:

1. Activation (restraining action) is achieved within the specified range of velocity or acceleration in both tension and compression.

2. Snubber bleed, or release rate, where required, is within the specified range in compression or tension. For snubbers specifically required to not displace under continuous load, the ability of the snubber to withstand load without displacement shall be verified.

e. Snubber Service Life Monitoring

A record of the service life of each snubber, the date at which the designated service life commences and the installation and maintenance records on which the designated service life is based shall be maintained as required by Specification 6.10.2.

Concurrent with the first inservice visual inspection and at least once per 18 months thereafter, the installation and maintenance records for all safety-related snubbers shall be reviewed to verify that the indicated service life has not been exceeded or will not be exceeded prior to the next scheduled snubber service life review. If the indicated service life will be exceeded prior to the next scheduled snubber service life review, the snubber service life shall be reevaluated or the snubber shall be replaced or reconditioned so as to extend its service life beyond the date of the next scheduled service life review. This reevaluation, replacement or reconditioning shall be indicated in the records.

CTS 3/4.7.7

LA.1

TABLE 3.7-9

SNUBBER VISUAL INSPECTION INTERVAL

NUMBER OF UNACCEPTABLE SNUBBERS

Population or Category (Notes 1 and 2)	Column A Extend Interval (Notes 3 and 6)	Column B Repeat Interval (Notes 4 and 6)	Column C Reduce Interval (Notes 5 and 6)
1	0	0	1
80	0	0	2
100	0	1	4
150	0	3	8
200	2	5	13
300	5	12	25
400	8	18	36
500	12	24	48
750	20	40	78
1000 or greater	29	56	109

Note 1: The next visual inspection interval for a snubber population or category size shall be determined based upon the previous inspection interval and the number of unacceptable snubbers found during that interval. Snubbers may be categorized, based upon their accessibility during power operation, as accessible or inaccessible. These categories may be examined separately or jointly. However, the licensee must make and document that decision before any inspection and shall use that decision as the basis upon which to determine the next inspection interval for that category.

Note 2: Interpolation between population or category sizes and the number of unacceptable snubbers is permissible. Use next lower integer for the value of the limit for Columns A, B, or C if that integer includes a fractional value of unacceptable snubbers as determined by interpolation.

CTS 3/4.7.7

LA.1

Table 3.7-9 (Continued)

Note 3: If the number of unacceptable snubbers is equal to or less than the number in Column A, the next inspection interval may be twice the previous interval but not greater than 48 months.

Note 4: If the number of unacceptable snubbers is equal to or less than the number in Column B but greater than the number in Column A, the next inspection interval shall be the same as the previous interval.

Note 5: If the number of unacceptable snubbers is equal to or greater than the number in Column C, the next inspection shall be two-thirds of the previous interval. However, if the number of unacceptable snubbers is less than the number in Column C but greater than the number in Column B, the next interval shall be reduced proportionally by interpolation, that is, the previous interval shall be reduced by a factor that is one-third of the ratio of the difference between the number of unacceptable snubbers found during the previous interval and the number in Column B to the difference in the numbers in Columns B and C.

Note 6: The provisions of Specification 4.0.2 are applicable for all inspection intervals up to and including 48 months.

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DISCUSSION OF CHANGES
CTS 3/4.7.8 (UNIT 1) AND 3/4.7.7 (UNIT 2), SNUBBERS

ADMINISTRATIVE CHANGES

None

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 6 – Removal of LCO, SR, or other TS requirement to the TRM, UFSAR, ODCM, QAPD, or IIP)* CTS LCO 3.7.8.1 (Unit 1) and CTS 3.7.7.1 (Unit 2) require all safety related snubbers to be OPERABLE. ITS 3.7 does not include the requirements for inspection and testing of safety related snubbers. This changes the CTS by moving the explicit snubber requirements from the Technical Specifications to the Technical Requirements Manual (TRM).

The removal of these details from the Technical Specifications is acceptable because this type of information is not necessary to provide adequate protection of public health and safety. The purpose of CTS LCO 3.7.8.1 (Unit 1) and CTS 3.7.7.1 (Unit 2) is to ensure that the structural integrity of the reactor coolant system and all other safety related systems is maintained during and following a seismic or other event initiating dynamic loads. This change is acceptable because the LCO requirements continue to ensure that the structures, systems, and components are maintained consistent with the safety analyses and licensing basis. The requirement to perform snubber inspections is specified in 10 CFR 50.55a and the requirement to perform snubber inspections and testing is specified in ASME Section XI. Therefore, both CNP Units 1 and 2 commitments and NRC Regulations or generic guidance will contain the necessary programmatic requirements for the inspection and testing of safety related snubbers without repeating them in the ITS. With the removal of OPERABILITY requirements from the Technical Specification, snubber OPERABILITY requirements will be determined in accordance with Technical Specification system OPERABILITY requirements. Also, this change is acceptable because the removed information will be adequately controlled in the TRM. The TRM is incorporated by reference into the UFSAR and any changes to the TRM are made under 10 CFR 50.59, which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because a requirement is being removed from the Technical Specifications.

DISCUSSION OF CHANGES
CTS 3/4.7.8 (UNIT 1) AND 3/4.7.7 (UNIT 2), SNUBBERS

LESS RESTRICTIVE CHANGES

None

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
CTS 3/4.7.8 (UNIT 1) AND 3/4.7.7 (UNIT 2), SNUBBERS

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 19

Improved Standard Technical Specifications (ISTS) not adopted in the CNP ITS

ISTS 3.7.14, Penetration Room Exhaust Air Cleanup System (PREACS)

ISTS 3.7.14 Markup and Justification for Deviations (JFDs)

1

3.7 PLANT SYSTEMS

3.7.14 Penetration Room Exhaust Air Cleanup System (PREACS)

LCO 3.7.14 Two PREACS trains shall be OPERABLE.

- NOTE -
The penetration room boundary may be opened intermittently under administrative control.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One PREACS train inoperable.	A.1	Restore PREACS train to OPERABLE status.	7 days
B. Two PREACS trains inoperable due to inoperable penetration room boundary.	B.1	Restore penetration room boundary to OPERABLE status.	24 hours
C. Required Action and associated Completion Time not met.	C.1	Be in MODE 3.	6 hours
	AND		
	C.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.14.1	Operate each PREACS train for [≥ 10 continuous hours with heaters operating or (for systems without heaters) ≥ 15 minutes].	31 days

(1)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.7.14.2	Perform required PREACS filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)].	In accordance with the [VFTP]
SR 3.7.14.3	[Verify each PREACS train actuates on an actual or simulated actuation signal.	[18] months]
SR 3.7.14.4	[Verify one PREACS train can maintain a pressure ≤ [-0.125] inches water gauge relative to atmospheric pressure during the [post accident] mode of operation at a flow rate of ≤ [3000] cfm.	[18] months on a STAGGERED TEST BASIS]
SR 3.7.14.5	[Verify each PREACS filter bypass damper can be closed.	[18] months]

JUSTIFICATION FOR DEVIATIONS
ISTS 3.7.14, PENETRATION ROOM EXHAUST AIR CLEANUP SYSTEM (PREACS)

1. The CNP design does not include the Penetration Room Exhaust Air Cleanup System. Therefore, ISTS 3.7.14 is not included in the ITS.

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ISTS 3.7.14 Bases Markup and Justification for Deviations (JFDs)

1

B 3.7 PLANT SYSTEMS

B 3.7.14 Penetration Room Exhaust Air Cleanup System (PREACS)

BASES

BACKGROUND

The PREACS filters air from the penetration area between containment and the auxiliary building.

The PREACS consists of two independent and redundant trains. Each train consists of a heater, a prefilter or demister, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), and a fan. Ductwork, valves or dampers, and instrumentation, as well as demisters, functioning to reduce the relative humidity of the air stream, also form part of the system. A second bank of HEPA filters, which follows the adsorber section, collects carbon fines and provides backup in case of failure of the main HEPA filter bank. The downstream HEPA filter, although not credited in the accident analysis, collects charcoal fines and serves as a backup should the upstream HEPA filter develop a leak. The system initiates filtered ventilation following receipt of a safety injection signal.

The PREACS is a standby system, parts of which may also operate during normal unit operations. During emergency operations, the PREACS dampers are realigned and fans are started to initiate filtration. Upon receipt of the actuating signal(s), normal air discharges from the penetration room, the penetration room is isolated, and the stream of ventilation air discharges through the system filter trains. The prefilters remove any large particles in the air, as well as any entrained water droplets, to prevent excessive loading of the HEPA filters and charcoal adsorbers.

The PREACS is discussed in the FSAR, Sections [6.5.1], [9.4.5], and [15.6.5] (Refs. 1, 2, and 3, respectively) since it may be used for normal, as well as post accident, atmospheric cleanup functions. Heaters may be included for moisture removal on systems operating in high humidity conditions. The primary purpose of the heaters is to maintain the relative humidity at an acceptable level consistent with iodine removal efficiencies per Regulatory Guide 1.52 (Ref. 4).

APPLICABLE SAFETY ANALYSES

The PREACS design basis is established by the large break loss of coolant accident (LOCA). The system evaluation assumes a passive failure outside containment, such as valve packing leakage during a Design Basis Accident (DBA). In such a case, the system restricts the radioactive release to within the 10 CFR 100 (Ref. 4) limits, or the NRC

(1)

BASES

APPLICABLE SAFETY ANALYSES (continued)

staff approved licensing basis (e.g., a specified fraction of 10 CFR 100 limits). The analysis of the effects and consequences of a large break LOCA are presented in Reference 3.

Two types of system failures are considered in the accident analysis: a complete loss of function, and excessive LEAKAGE. Either type of failure may result in less efficient removal of any gaseous or particulate material released to the penetration room following a LOCA.

The PREACS satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

Two independent and redundant trains of the PREACS are required to be OPERABLE to ensure that at least one train is available, assuming there is a single failure disabling the other train coincident with a loss of offsite power.

The PREACS is considered OPERABLE when the individual components necessary to control radioactive releases are OPERABLE in both trains. A PREACS train is considered OPERABLE when its associated:

a. Fan is OPERABLE,

b. HEPA filter and charcoal adsorber are not excessively restricting flow, and are capable of performing their filtration functions, and

c. Heater, demister, ductwork, valves, and dampers are OPERABLE and air circulation can be maintained.

The LCO is modified by a Note allowing the penetration room boundary to be opened intermittently under administrative controls. For entry and exit through doors, the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for penetration room isolation is indicated.

APPLICABILITY

In MODES 1, 2, 3, and 4, the PREACS is required to be OPERABLE, consistent with the OPERABILITY requirements of the Emergency Core Cooling System (ECCS).

(1)

BASES

APPLICABILITY (continued)

In MODE 5 or 6, the PREACS is not required to be OPERABLE since the ECCS is not required to be OPERABLE.

ACTIONS

A.1

With one PREACS train inoperable, the action must be taken to restore OPERABLE status within 7 days. During this period, the remaining OPERABLE train is adequate to perform the PREACS function. The 7 day Completion Time is appropriate because the risk contribution of the PREACS is less than that of the ECCS (72 hour Completion Time), and this system is not a direct support system for the ECCS. The 7 day Completion Time is based on the low probability of a DBA occurring during this period, and the remaining train providing the required capability.

B.1

- REVIEWER'S NOTE -
Adoption of Condition B is dependent on a commitment from the licensee to have guidance available describing compensatory measures to be taken in the event of an intentional and unintentional entry into Condition B.

If the penetration room boundary is inoperable, the PREACS trains cannot perform their intended functions. Actions must be taken to restore an OPERABLE penetration room boundary within 24 hours. During the period that the penetration room boundary is inoperable, appropriate compensatory measures [consistent with the intent, as applicable, of GDC 19, 60, 64 and 10 CFR Part 100] should be utilized to protect plant personnel from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature and relative humidity, and physical security. Preplanned measures should be available to address these concerns for intentional and unintentional entry into the condition. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of compensatory measures. The 24 hour Completion Time is a typically reasonable time to diagnose, plan and possibly repair, and test most problems with the penetration room boundary.

1

BASES

ACTIONS (continued)

C.1 and C.2

If the inoperable train or penetration room boundary cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. The 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 unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.14.1

Standby systems should be checked periodically to ensure that they function properly. As the environmental and normal operating conditions on this system are not severe, testing each train once every month provides an adequate check on this system. Monthly heater operation dries out any moisture that may have accumulated in the charcoal as a result of humidity in the ambient air. [Systems with heaters must be operated for ≥ 10 continuous hours with the heaters energized. Systems without heaters need only be operated for ≥ 15 minutes to demonstrate the function of the system.] The 31 day Frequency is based on the known reliability of equipment and the two train redundancy available.

SR 3.7.14.2

This SR verifies that the required PREACS testing is performed in accordance with the [Ventilation Filter Testing Program (VFTP)]. The [VFTP] includes testing HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test frequencies and additional information are discussed in detail in the [VFTP].

[SR 3.7.14.3

This SR verifies that each PREACS starts and operates on an actual or simulated actuation signal. The [18] month Frequency is consistent with that specified in Reference 5.]

1

SURVEILLANCE REQUIREMENTS (continued)

[SR 3.7.14.4

This SR verifies the integrity of the penetration room enclosure. The ability of the penetration room to maintain a negative pressure, with respect to potentially uncontaminated adjacent areas, is periodically tested to verify proper function of PREACS. During the [post accident] mode of operation, the PREACS is designed to maintain a ≤ [-0.125] inches water gauge relative to atmospheric pressure at a flow rate of [3000] cfm in the penetration room, with respect to adjacent areas, to prevent unfiltered LEAKAGE. The Frequency of [18] months is consistent with the guidance provided in NUREG-0800 (Ref. 6).

The minimum system flow rate maintains a slight negative pressure in the penetration room area, and provides sufficient air velocity to transport particulate contaminants, assuming only one filter train is operating. The number of filter elements is selected to limit the flow rate through any individual element to about [3000] cfm. This may vary based on filter housing geometry. The maximum limit ensures that the flow through, and pressure drop across, each filter element are not excessive.

The number and depth of the adsorber elements ensure that, at the maximum flow rate, the residence time of the air stream in the charcoal bed achieves the desired adsorption rate. At least a [0.125] second residence time is necessary for an assumed [99]% efficiency.

The filters have a certain pressure drop at the design flow rate when clean. The magnitude of the pressure drop indicates acceptable performance, and is based on manufacturers' recommendations for the filter and adsorber elements at the design flow rate. An increase in pressure drop or a decrease in flow indicates that the filter is being loaded or that there are other problems with the system.

This test is conducted along with the tests for filter penetration; thus, the [18] month Frequency is consistent with that specified in Reference 5.]

[SR 3.7.14.5

It is necessary to operate the PREACS filter bypass damper to ensure that the system functions properly. The OPERABILITY of the PREACS filter bypass damper is verified if it can be closed. An [18] month Frequency is consistent with that specified in Reference 5.]

(1)

BASES

REFERENCES	1.	FSAR, Section [6.5.1].
	2.	FSAR, Section [9.4.5].
	3.	FSAR, Section [15.6.5].
	4.	10 CFR 100.
	5.	Regulatory Guide 1.52, Rev. [2].
	6.	NUREG-0800, Section 6.5.1, Rev. 2, July 1981.

JUSTIFICATION FOR DEVIATIONS
ISTS 3.7.14 BASES, PENETRATION ROOM EXHAUST AIR CLEANUP SYSTEM (PREACS)

1. Changes are made to be consistent with changes made to the Specification.

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SUMMARY OF CHANGES
ITS SECTION 3.8

Change Description	Affected Pages
The change described in the response to Question 200405211500 for ITS 3.8.1 has not been made, since the changes described in the response to Question 200407301638 for ITS 3.8.1 supersedes Question 200405211500.	None
The change described in the response to Question 200407301638 for ITS 3.8.1 (Beyond Scope Issue 19) has been made. This change revises the Completion Time for Required Actions B.3.1 and B.3.2 from the originally proposed 12 hours to 24 hours consistent with NUREG-1431, Revision 2 Improved Standard Technical Specifications (ISTS).	Pages 5, 6, 15, 16, 52, 53, 57, and 106 of 502.
A self-identified change for ITS 3.8.1 has been made. CTS Amendments 281 (Unit 1) and 265 (Unit 2) have been incorporated into the ITS submittal. This CTS change adopted the allowances of TSTF-359 and affects CTS 3.8.1.1 Action f and CTS 3.0.5 (new CTS page only). The change also affects ITS 3.8.1 (added ACTIONS Note).	Pages 6, 13, 14, 16, 23, 24, 55, 56, 97, and 99 of 502.
A self-identified change for ITS 3.8.1 has been made. This change reverses the order of ITS SRs 3.8.1.6 and 3.8.1.7 to put them in the proper order, based on Frequency.	Pages 7, 17, 31, 32, 35, 42, 52, 63, 64, 85, 123, and 124 of 502.
The change described in the response to Questions 200407301636 and 200409101414 for ITS 3.8.1 and 3.8.2 (Beyond Scope Issue 18) has been made. This change adds a new Surveillance Requirement to verify diesel generator (DG) response to an actual or simulated actuation signal when the DG is operating in the test mode connected to the emergency buses consistent with ISTS SR 3.8.1.17 (as ITS SR 3.8.1.21), and adds a new ITS SR 3.8.1.20 consistent with CTS 4.8.1.1.2.e.10 to verify DG response to an actual of simulated actuation signal when the DG is operating in test mode and connected to its load test resistor bank.	Pages 8, 10, 11, 18, 20, 21, 26, 28, 29, 34, 35, 40, 42, 45, 47, 48, 49, 52, 61, 79, 80, 81, 82, 83, 84, 85, 87, 95, 96, 147, 148, 149, 150, 154, 155, 156, 162, 175, 176, 177, 178, 183, 195, 196, 200, 201, and 202 of 502.
A self-identified change for ITS 3.8.1 has been made. A typographical error has been corrected in ITS 3.8.1 Discussion of Changes (DOC) L.18.	Page 51 of 502.
A self-identified change for ITS 3.8.1 Bases has been made. This change revises the ITS 3.8.1 Bases for ACTIONS D to address that the condition is required to be entered if the emergency bus(es) would not be powered after a unit trip (i.e., if only the unit auxiliary source is available for energizing the emergency buses and the DG and both offsite power sources are unavailable to energize the emergency buses).	Pages 112 and 160 of 502.

Change Description	Affected Pages
The change described in the response to Question 200405261512 for ITS 3.8.3 Bases has been made. This change adds the titles for each of the American Society for Testing and Materials (ASTM) Standards in Reference 5 and 6 of the ITS 3.8.3 Bases.	Pages 242 and 243 of 502.
The change described in the response to Question 200405271754 for ITS 3.8.6 has been made. This change revises ITS 3.8.6 DOC L.2 to provide additional justification for extending the proposed Surveillance Frequency for CTS 4.8.2.3.2.a.3 and CTS 4.8.2.5.2.a.3 from 7 days to 31 days.	Page 342 of 502.
The change described in the response to Question 200405281042 for ITS 3.8.6 Bases has been made. This change revises the ITS SR 3.8.6.6 Bases and ITS 3.8.6 DOC L.7 to clarify that the modified performance test method has been determined by the system designer (Indiana Michigan Power Company (I&M)) and the battery manufacturer to be an acceptable modified performance test procedure, and is consistent with the requirements of IEEE 450-1995.	Pages 344, 345, and 366 of 502.
The change described in the response to Question 200405281336 for ITS 3.8.7 Bases has been made. This change revises the ITS 3.8.7 Bases Reference 3 to Reference 2.	Page 392 of 502.

VOLUME 13

CNP UNITS 1 AND 2
IMPROVED TECHNICAL SPECIFICATIONS CONVERSION

ITS SECTION 3.8
ELECTRICAL POWER SYSTEMS

Revision 1

LIST OF ATTACHMENTS

ATTACHMENT 1

ITS 3.8.1, AC Sources - Operating

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

A.1

ITS 3.8.1

ITS

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

LCO 3.8.1 3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE: LA.1

ACTION

a. Two ~~physically independent~~ circuits between the offsite transmission network and the onsite Class 1E distribution system, and

b. Two ~~separate and independent~~ diesel generators, each with: LA.1

SR 3.8.1.4 1. A ~~separate~~ day fuel tank containing a minimum of ~~70~~ 101.4 gallons of fuel, A.12

2. A separate fuel storage system* containing a minimum indicated volume of 46,000 gallons of fuel, and — See ITS 3.8.3

Add proposed LCO 3.8.1.c and d — A.2

3. ~~A separate fuel transfer pump~~ LA.1

APPLICABILITY: MODES 1, 2, 3 and 4.

Add proposed Applicability Note and ITS ACTIONS A and B for Unit 2 AC Sources — M.2

ACTION:

ACTION A

ACTION F

a. With an offsite circuit of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. offsite source by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; restore at least ~~two~~ one offsite circuit~~s and two diesel generators~~ to OPERABLE status within 72 hours/or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. L.1

Add proposed Required Action A.3 second Completion Time

ACTION B

ACTION F

b. With a diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the A.C. offsite sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and if the diesel generator became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.4 within ~~8~~ 24 hours, unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated; restore diesel generator~~s~~ to OPERABLE status within 72 hours/or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. ~~At the number of failures for the inoperable diesel indicated in Table 4.8-1 perform the Additional Reliability Actions prescribed in Table 4.8-1.~~ L.21 L.1 L.2

Add proposed Required Action B.4 second Completion Time

*Tanks are separate between diesels but shared between Units 1 and 2. — See ITS 3.8.3

A.1

ITS 3.8.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

ACTION (Continued)

Add proposed Required Action D Note — A.3

ACTION D — c. With one offsite circuit and one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. offsite source by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter and if the diesel generator became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours, unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated; restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. With the diesel generator restored to OPERABLE status, follow ACTION Statement a. With the offsite circuit restored to OPERABLE status, follow ACTION Statement b.

Required Action A.1; Required Actions B.3.1 and B.3.2; ACTION D; ACTION F

24 — L.21; L.1

ACTION C — d. With two of the above required offsite A.C. circuits inoperable, restore at least one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours. With only one offsite source restored, follow ACTION Statement a.

ACTION F

and MODE 5 within 36 hours — M.3; L.1

ACTION E — e. With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; restore at least one of the inoperable diesel generators to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. With one diesel generator unit restored, follow ACTION Statement b or c.

Required Action B.1; ACTION E; ACTION F — L.1

ACTIONS Note — f. Specification 3.0.4.b is not applicable to diesel generators.

Add proposed ACTION G — A.4

* The ACTION statement time shall be based upon the time associated with the component inoperability, and is not reset when exiting this ACTION statement. — L.1

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be:

SR 3.8.1.1 — a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments and indicated power availability, and

A.9 — Add proposed Note 1 to SR 3.8.1.9 — L.3 — 24

SR 3.8.1.9 — b. Demonstrated OPERABLE at least once per 18 months by transferring the unit power source automatically from the normal auxiliary source to the preferred reserve source and by transferring manually to the alternate reserve source.

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A.1

ITS 3.8.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE: (L.2) (L.4)

a. ~~In accordance with the frequency specified in Table 4.8-1~~ ~~on a STAGGERED TEST BASIS by~~:

SR 3.8.1.4 — 1. Verifying the fuel level in the day tank. every 31 days (L.5)

2. Verifying the fuel level in the fuel storage tank. See ITS 3.8.3 (LA.1)

SR 3.8.1.7 — 3. Verifying that the fuel transfer ~~pump~~ system can be started, and that it transfers fuel automatically from the storage system to the day tank. every 31 days (L.2) 92 days (M.4) (L.19)

SR 3.8.1.2
SR 3.8.1.8
SR 3.8.1.16 — 4. Verifying that the diesel starts from standby conditions and achieves in less than or equal to 10 seconds, voltage ≥ 3740 V and frequency ≥ 58.8 Hz (L.18); steady state voltage = 4160 ± ~~420~~ V, and frequency = 60 ± ~~1.2~~ Hz.* (M.5)

SR 3.8.1.3 — 5. Verifying the diesel is synchronized and loaded and operates for greater than or equal to 60 minutes at a load of ≥ 3150 kW and ≤ 3500 kw**, and (L.2) every 31 days (L.6)

6. ~~Verifying that the diesel generator is aligned to provide standby power to the associated emergency busses.~~ (LA.2)

b. By removing accumulated water***: See ITS 3.8.3

SR 3.8.1.5 — 1) From the day tank at least once per 31 days ~~and after each occasion when the diesel is operated for greater than 1 hour~~, and (L.7)

2) From the storage tanks at least once per 31 days. See ITS 3.8.3

c. By sampling new fuel oil*** in accordance with the applicable guidelines of ASTM D4057-81 prior to adding new fuel to the storage tanks and

1) By verifying, in accordance with the tests specified in ASTM D975-81 and prior to adding the new fuel to the storage tanks, that the sample has: See ITS 5.5

Add proposed SR 3.8.1.6 (M.6)

Add proposed Note 1 to SR 3.8.1.2, Note to SR 3.8.1.8, and Note 2 to SR 3.8.1.16 (A.5)

SR 3.8.1.8 — * The diesel generator start (10 seconds) from standby conditions shall be performed at least once per 184 days in these surveillance tests. ~~All other engine starts for the purpose of this surveillance testing and compensatory action may be at reduced acceleration rates as recommended by the manufacturer~~ ~~so that mechanical stress and wear on the diesel engine are minimized.~~ (LA.5)

Note 2 to SR 3.8.1.2 — Add proposed Note 1 to SR 3.8.1.3 (A.6)

Note 2 to SR 3.8.1.3 — ** Momentary load transients do not invalidate this test. Add proposed Notes 3 and 4 to SR 3.8.1.3 (M.7)

*** The actions to be taken should any of the properties be found outside of specified limits are defined in the Bases. See ITS 3.8.3

A.1

ITS 3.8.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

a) A kinematic viscosity of greater than or equal to 1.9 centistokes but less than or equal to 4.1 centistokes at 40°C (alternatively, Saybolt viscosity, SUS at 100°F of greater than or equal to 32.6 but less than or equal to 40.1), if gravity was not determined by comparison with supplier's certification.

b) A flash point equal to or greater than 125°F.

2) By verifying, in accordance with the test specified in ASTM D1298-80 and prior to adding the new fuel to the storage tanks, that the sample has either an API gravity of greater than or equal to 30 degrees but less than or equal to 40 degrees at 60°F or an absolute specific gravity at 60/60°F of greater than or equal to 0.82 but less than or equal to 0.88, or an API gravity of within 0.3 degrees at 60°F when compared to the supplier's certificate or a specific gravity of within 0.0016 at 60/60° when compared to the supplier's certificate. — See ITS 5.5

3) By verifying, in accordance with the test specified in ASTM D4176-82 and prior to adding new fuel to the storage tanks, that the sample has a clear and bright appearance with proper color.

4) By verifying within 31 days of obtaining the sample that the other properties specified in Table 1 of ASTM D975-81 are within the appropriate limits when tested in accordance with ASTM D975-81 except that the analysis for sulfur may be performed in accordance with ASTM D2622-82.

d. At least once per 31 days by obtaining a sample of fuel oil from the storage tanks in accordance with ASTM D2276-83, and verifying that total particulate contamination is less than 10 mg/liter when tested in accordance with ASTM D2276-83, Method A*. — See ITS 3.8.3

A.10

L.8

SR 3.8.1.10 through SR 3.8.1.20 e. At least once per ~~18~~ 24 months, ~~during shutdown~~ by: — L.3

~~1. Subjecting the diesel engine to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service.~~ — LA.3

*The actions to be taken should any of the properties be found outside of the specified limits are defined in the Bases. — See ITS 3.8.3

A.1

ITS 3.8.1

ITS

M.8

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

M.5

single largest post-accident load LA.4

SURVEILLANCE REQUIREMENTS (Continued) Add proposed Note 2 to SR 3.8.1.10

L.9

SR 3.8.1.10 — 2. Verifying the generator capability to reject a load greater than or equal to ~~600 kw~~ while maintaining voltage at 4160 ± ~~420~~ volts and frequency at 60 ± ~~1.2~~ Hz. the frequency ≤ 64.4 Hz and within 2 seconds L.6 M.8

Add proposed Note 2 to SR 3.8.1.11 ≥ 3150 kW and ≤

SR 3.8.1.11 — 3. Verifying the generator capability to reject a load of 3500 kw without ~~exceeding 75% of the difference between nominal speed and the overspeed trip setpoint.~~ without tripping the DG L.10 voltage is maintained ≤ 5000 V M.1

SR 3.8.1.12 — 4. Simulating a loss of offsite power by itself, and: actual or Add proposed Note 1 to SR 3.8.1.12 A.5 L.11

a) Verifying de-energization of the emergency busses and load shedding from the emergency busses,

b) Verifying that the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds, energizes the auto-connected shutdown loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the shutdown loads. After load sequencing is completed, the steady state voltage and frequency of the emergency busses shall be maintained at 4160 ± ~~420~~ volts and 60 ± ~~1.2~~ Hz during the test. M.5

A.5
Add proposed Note 1 to SR 3.8.1.13

SR 3.8.1.13 — 5. Verifying that, on a Safety Injection actuation test signal ~~(without loss of offsite power)~~, the diesel generator starts on the auto-start signal ~~and operates on standby for greater than or equal to 5 minutes.~~ actual or L.11 M.9 Add SR 3.8.1.13 parts a, b, d, and e

Add proposed Note 1 to SR 3.8.1.19 A.5

SR 3.8.1.19 — 6. Simulating a loss of offsite power in conjunction with a Safety Injection actuation test signal, and by: actual or L.11

a) Verifying de-energization of the emergency busses and load shedding from the emergency busses,

b) Verifying the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds, energizes the auto-connected emergency (accident) loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the emergency loads. After load sequencing is completed, the steady state voltage and frequency of the emergency busses shall be 4160 ± ~~420~~ volts and 60 ± ~~1.2~~ Hz. The voltage and frequency shall be maintained within these limits for the remainder of this test, and M.5

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A.1

ITS 3.8.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

L.6

SR 3.8.1.14 c) Verifying that all automatic diesel generator trips, except engine overspeed and generator differential, are automatically bypassed upon loss of voltage on the emergency bus ~~and~~/or Safety Injection actuation signal. A.11

L.12

Add proposed Note 3 to SR 3.8.1.15

≥ 3150 kW and ≤

SR 3.8.1.15
SR 3.8.1.16

7. Verifying that the diesel generator operates at a power factor of less than or equal to 0.86 for at least 8 hours.* During this test the diesel generator shall be loaded to 3500 kw. Within 5 minutes after completing this 8-hour test, perform Surveillance Requirement 4.8.1.1.2.a.4 (at existing conditions).** A.5

Add proposed Note 2 to SR 3.8.1.16

8. ~~Determine that the auto-connected loads to each diesel generator do not exceed 3500 kw.~~ L.13

9. Verifying the diesel generator's capability to:

SR 3.8.1.17

a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power.

b) Transfer its loads to the offsite power source, and

c) Be restored to its standby status.

Add proposed Note to SR 3.8.1.20

SR 3.8.1.20 10. Verifying that with the diesel generator operating in a test mode while connected to its test load, a simulated Safety Injection signal overrides the test mode by:

actual or

L.11

A.13

a) Returning the diesel generator to standby operation, and

b) Verifying the emergency loads are serviced by offsite power.

Add proposed SR 3.8.1.21

M.12

SR 3.8.1.18 11. Verifying that the automatic sequence timing relays are OPERABLE with each load sequence time within plus or minus 5% of its required value and that each load is sequenced on within the design allowable time limit.

SR 3.8.1.22 f. At least once per 10 years by:

1. Employing one of the following cleaning methods to clean the fuel oil storage tanks:

a) Drain each fuel oil storage tank, remove the accumulated sediment, and clean the tank, or

See ITS 3.8.3

SR 3.8.1.15 Note 1,
SR 3.8.1.16 Note 1 * *Momentary transients outside the load and power factor range do not invalidate this test.*

SR 3.8.1.16 Note 1 ** If Surveillance Requirement 4.8.1.1.2.a.4 is not satisfactorily completed, it is not necessary to repeat the preceding 8-hour test. Instead, the diesel generator may be operated at 3500 kw for 2 hours ~~or until operating temperature has stabilized~~

≥ 3150 kW and ≤

L.6

A.8

A.1

ITS 3.8.1

ITS

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

b) Agitate the fuel oil in the storage tank while pumping the oil from the bottom of the tank through a 5-micron filter, and back to the opposite end of the tank. Three successive samples shall be taken and analyzed according to ASTM D2276-83. If the contaminant level in any of the samples is greater than 10 mg per liter, the agitation, filtration, and sampling processes shall be repeated. If the contaminant level remains above 10 mg per liter after 3 iterations, the draining and cleaning method described in surveillance requirement 4.8.1.1.2.f.1.a shall be employed.

2) Performing a precision leak detection test to verify that the leakage rate from the fuel oil system is less than or equal to .05 gallons per hour.

See ITS 3.8.3

A.5

Add proposed Note to SR 3.8.1.22

SR 3.8.1.22 3) Starting both diesel generators simultaneously, ~~during shutdown, and verifying that both diesel generators~~ accelerate to at least 514 RPM in less than or equal to 10 seconds.*

L.14

Add proposed voltage limit

M.10

58.8 Hz

L.15

Add proposed SR Notes 1 and 2

Add proposed SR 3.8.1.23

M.11

~~*Shall be performed after any modifications which could affect diesel generator interdependence.~~

L.16

A.1

ITS 3.8.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

TABLE 4.8-1

DIESEL GENERATOR TEST SCHEDULE

Number of Failures in Last 20 Valid Tests*	Test Frequency
Less than or equal to 1	At least once per 31 days
Greater than or equal to 2	At least once per 7 days**

L.2

* Criteria for determining number of failures and valid tests shall be in accordance with Regulatory Position C.2.1 of Regulatory Guide 1.9, Revision 3, where the number of tests and failures is determined on a per diesel generator basis. For the purposes of this test schedule, only valid tests conducted after the OL issuance date shall be included in the computation of the "last 20 valid tests."

** This test frequency shall be maintained until seven consecutive failure free demands have been performed and the number of failures in the last 20 valid demands has been reduced to one or less.

L.2

A.1

ITS 3.8.1

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3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.0 APPLICABILITY

LIMITING CONDITION FOR OPERATION

3.0.1 Limiting Conditions for Operation and ACTION requirements shall be applicable during the OPERATIONAL MODES or other conditions specified for each specification, except as provided in Specification 3.0.6.

3.0.2 Adherence to the requirements of the Limiting Condition for Operation and/or associated ACTION within the specified time interval shall constitute compliance with the specification, except as provided in Specification 3.0.6. In the event the Limiting Condition for Operation is restored prior to expiration of the specified time interval, completion of the ACTION statement is not required.

3.0.3 When a Limiting Condition for Operation is not met, except as provided in the associated ACTION requirements, within one hour action shall be initiated to place the unit in a MODE in which the Specification does not apply by placing it, as applicable, in:

1. At least HOT STANDBY within the next 6 hours,
2. At least HOT SHUTDOWN within the following 6 hours, and
3. At least COLD SHUTDOWN within the subsequent 24 hours.

Where corrective measures are completed that permit operation under the ACTION requirements, the ACTION may be taken in accordance with the specified time limits as measured from the time of failure to meet the Limiting Condition for Operation. Exceptions to these requirements are stated in the individual Specifications.

See ITS Section 3.0

3.0.4 When a Limiting Condition for Operation is not met, entry into an OPERATIONAL MODE or other specified condition in the Applicability shall only be made:

a. When the associated ACTIONs to be entered permit continued operation in the OPERATIONAL MODE or other specified condition in the Applicability for an unlimited period of time;

b. After performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the OPERATIONAL MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate; exceptions to this Specification are stated in the individual Specification, or

c. When an allowance is stated in the individual value, parameter, or other Specification.

This Specification shall not prevent changes in OPERATIONAL MODES or other specified conditions in the Applicability that are required to comply with ACTIONs or that are part of a shutdown of the unit.

Required Actions A.2, B.2, and C.1

3.0.5 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, it may be considered OPERABLE for the purpose of satisfying the requirements of its applicable Limiting Condition for Operation, provided: (1) its corresponding normal or emergency power source is OPERABLE; and (2) all of its redundant system(s), subsystem(s), train(s), component(s) and device(s) are OPERABLE, or likewise satisfy the requirements of this specification. Unless both conditions (1) and (2) are satisfied,

ITS 3.8.1

A.1

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3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.0 APPLICABILITY

L.17

within ~~2 hours~~ ~~action shall be initiated to place the unit in a MODE in which the applicable Limiting Condition for Operation does not apply by placing it as applicable in:~~

24 hours for proposed Required Action A.2
4 hours for proposed Required Action B.2
12 hours for proposed Required Action C.1

1. ~~At least HOT STANDBY within the next 6 hours,~~
2. ~~At least HOT SHUTDOWN within the following 6 hours, and~~
3. ~~At least COLD SHUTDOWN within the subsequent 24 hours.~~

Declare required features inoperable. L.17

~~This Specification is not applicable in MODES 5 or 6.~~ A.7

3.0.6 Equipment removed from service or declared inoperable to comply with ACTION requirements may be returned to service under administrative controls solely to perform testing required to demonstrate its OPERABILITY or the OPERABILITY of other equipment. This is an exception to Specifications 3.0.1 and 3.0.2 for the system returned to service under administrative control to perform the testing required to demonstrate OPERABILITY.

SURVEILLANCE REQUIREMENTS

4.0.1 Surveillance Requirements shall be met during the OPERATIONAL MODES or other specified conditions in the Applicability for individual Limiting Condition for Operations, unless otherwise stated in the Surveillance Requirement. Failure to meet a Surveillance, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the Limiting Condition for Operation. Failure to perform surveillance within the specified frequency shall be failure to meet the Limiting Condition for Operation except as provided in Specification 4.0.3. Surveillances do not have to be performed on inoperable equipment or variables outside specified limits.

4.0.2 Each Surveillance Requirement shall be performed within the specified time interval with a maximum allowable extension not to exceed 25% of the specified surveillance interval.

4.0.3 Performance of a Surveillance Requirement within the specified time interval shall constitute compliance with OPERABILITY requirements for a Limiting Condition for Operation and associated ACTION statements unless otherwise required by the specification.

See ITS Section 3.0

If it is discovered that a surveillance was not performed within its specified surveillance interval, then compliance with the requirement to declare the Limiting Condition for Operation not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified surveillance interval, whichever is less. This delay period is permitted to allow performance of the surveillance.

If the surveillance is not performed within the delay period, the Limiting Condition for Operation must immediately be declared not met, and the applicable ACTION requirements must be met.

When the surveillance is performed within the delay period and the surveillance criteria are not met, the Limiting Condition for Operation must immediately be declared not met, and the applicable ACTION requirements must be met.

Surveillance requirements do not have to be performed on inoperable equipment.

4.0.4 Entry into an OPERATIONAL MODE or other specified condition in the Applicability of a Limited Condition for Operation shall only be made when the Limiting Condition for Operation Surveillances have been met within their specified frequency, except as provided by Specification 4.0.3. When a Limiting Condition for Operation is not met due to Surveillances not having been met, entry into an OPERATIONAL MODE or other specified condition in the Applicability shall only be made in accordance with Specification 3.0.4.

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ITS

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

LCO 3.8.1 3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE: LA.1

a. Two ~~physically independent~~ qualified circuits between the offsite transmission network and the onsite Class 1E distribution system, and

b. Two ~~separate and independent~~ diesel generators, each with: LA.1

SR 3.8.1.4 1. A ~~separate~~ day fuel tank containing a minimum of ~~70~~ 101.4 gallons of fuel, A.12

2. A separate fuel storage system* containing a minimum indicated volume of 46,000 gallons of fuel, and See ITS 3.8.3

3. ~~A separate fuel transfer pump.~~ Add proposed LCO 3.8.1.c and d A.2 LA.1

APPLICABILITY: MODES 1, 2, 3 and 4. Add proposed Applicability Note and ITS ACTIONS A and B for Unit 1 AC Sources M.2

ACTION:

ACTION A
ACTION F

a. With an offsite circuit of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. offsite source by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; restore at least ~~two~~ one offsite circuit~~s~~ and ~~two diesel generators~~ to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. L.1 Add proposed Required Action A.3 second Completion Time

ACTION B
ACTION F

b. With a diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the A.C. offsite sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and if the diesel generator became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.4 within ~~8~~ 24 hours, unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated; restore diesel generator~~s~~ to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. ~~At the number of failures for the inoperable diesel indicated in Table 4.8-1, perform the Additional Reliability Actions prescribed in Table 4.8-1.~~ L.21 L.1 Add proposed Required Action B.4 second Completion Time L.2

*Tanks are separate between diesels but shared between Units 1 and 2. See ITS 3.8.3

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3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

ACTION (Continued)

Add proposed Required Action D Note — A.3

ACTION D; Required Action A.1; Required Actions B.3.1 and B.3.2; ACTION D; ACTION F

c. With one offsite circuit and one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. offsite source by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter and if the diesel generator became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.4 within ~~8~~ 24 hours, unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated; restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. ~~With the diesel generator restored to OPERABLE status, follow ACTION Statement a.* With the offsite circuit restored to OPERABLE status, follow ACTION Statement b.*~~ — L.21, L.1

ACTION C; ACTION F

d. With two of the above required offsite A.C. circuits inoperable, restore at least one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and MODE 5 within 36 hours. ~~With only one offsite source restored, follow ACTION Statement a.*~~ — L.1, M.3

ACTION E; Required Action B.1; ACTION E; ACTION F

e. With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; restore at least one of the inoperable diesel generators to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. ~~With one diesel generator unit restored, follow ACTION Statement b* or c.*~~ — L.1

ACTIONS Note

f. Specification 3.0.4.b is not applicable to diesel generators.

Add proposed ACTION G — A.4

~~* The ACTION statement time shall be based upon the time associated with the component inoperability, and is not reset when exiting this ACTION statement.~~ — L.1

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be:

SR 3.8.1.1

a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments and indicated power availability, and

Add proposed Note 1 to SR 3.8.1.9 — A.9

SR 3.8.1.9

b. Demonstrated OPERABLE at least once per ~~18~~ 24 months by transferring the unit power source automatically from the normal auxiliary source to the preferred reserve source and by transferring manually to the alternate reserve source. — L.3

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE:

a. ~~In accordance with the frequency specified in Table 4.8-1 on a STAGGERED TEST BASIS by:~~ L.2 L.4

SR 3.8.1.4 — 1. Verifying the fuel level in the day tank. every 31 days L.5

2. Verifying the fuel level in the fuel storage tank. See ITS 3.8.3

SR 3.8.1.7 — 3. Verifying that the fuel transfer ~~pump~~ system can be started and that it transfers fuel from the storage system to the day tank. automatically LA.1 M.4

SR 3.8.1.2, SR 3.8.1.8, SR 3.8.1.16 — 4. Verifying that the diesel starts from standby conditions and achieves in less than or equal to 10 seconds, voltage = 4160±420 V, and frequency = 60±1.2 Hz.* L.2 every 31 days steady state 92 days voltage ≥ 3740 V and frequency ≥ 58.8 Hz L.18 L.19 M.5

SR 3.8.1.3 — 5. Verifying the diesel is synchronized and loaded and operates for greater than or equal to 60 minutes at a load of 3500 kw**, and ≥ 3150 kW and ≤ L.6 L.2 every 31 days

6. ~~Verifying that the diesel generator is aligned to provide standby power to the associated emergency busses.~~ LA.2

b. By removing accumulated water***: See ITS 3.8.3

SR 3.8.1.5 — 1) From the day tank at least once per 31 days ~~and after each occasion when the diesel is operated for greater than 1 hour~~, and L.7

2) From the storage tanks at least once per 31 days. See ITS 3.8.3

c. By sampling new fuel oil*** in accordance with the applicable guidelines of ASTM D4057-81 prior to adding new fuel to the storage tanks and See ITS 5.5

1) By verifying, in accordance with the tests specified in ASTM D975-81 and prior to adding the new fuel to the storage tanks, that the sample has:

Add proposed SR 3.8.1.6 M.6

Add proposed Note 1 to SR 3.8.1.2, Note to SR 3.8.1.8, and Note 2 to SR 3.8.1.16 A.5

SR 3.8.1.8 — * The diesel generator start (10 seconds) from standby conditions shall be performed at least once per 184 days in these surveillance tests. ~~All other engine starts for the purpose of this surveillance testing and compensatory action may be at reduced acceleration rates as recommended by the manufacturer~~ ~~so that mechanical stress and wear on the diesel engine are minimized~~. LA.5

Note 2 to SR 3.8.1.2 — Add proposed Note 1 to SR 3.8.1.3 A.6

Note 2 to SR 3.8.1.3 — ** Momentary load transients do not invalidate this test.

Add proposed Notes 3 and 4 to SR 3.8.1.3 M.7

*** The actions to be taken should any of the properties be found outside of specified limits are defined in the Bases. See ITS 3.8.3

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

a) A kinematic viscosity of greater than or equal to 1.9 centistokes but less than or equal to 4.1 centistokes at 40°C (alternatively, Saybolt viscosity, SUS at 100°F of greater than or equal to 32.6 but less than or equal to 40.1), if gravity was not determined by comparison with supplier's certification.*

b) A flash point equal to or greater than 125°F.

2) By verifying, in accordance with the test specified in ASTM D1298-80 and prior to adding the new fuel to the storage tanks, that the sample has either an API gravity of greater than or equal to 30 degrees but less than or equal to 40 degrees at 60°F or an absolute specific gravity at 60/60°F of greater than or equal to 0.82 but less than or equal to 0.88, or an API gravity of within 0.3 degrees at 60°F when compared to the supplier's certificate or a specific gravity of within 0.0016 at 60/60°F when compared to the supplier's certificate. See ITS 5.5

3) By verifying, in accordance with the test specified in ASTM D4176-82 and prior to adding new fuel to the storage tanks, that the sample has a clear and bright appearance with proper color. See ITS 3.8.3

4) By verifying within 31 days of obtaining the sample that the other properties specified in Table 1 of ASTM D975-81 are within the appropriate limits when tested in accordance with ASTM D975-81 except that the analysis for sulfur may be performed in accordance with ASTM D2622-82.

d. At least once per 31 days by obtaining a sample of fuel oil from the storage tanks in accordance with ASTM D2276-83, and verifying that total particulate contamination is less than 10 mg/liter when tested in accordance with ASTM D2276-83, Method A*.

A.10

L.8

SR 3.8.1.10 through SR 3.8.1.20 e. At least once per ~~18~~ 24 months ~~during shutdown~~ by: L.3

1. ~~Subjecting the diesel engine to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service.~~ LA.3

* The actions to be taken should any of the properties be found outside of the specified limits are defined in the Bases. See ITS 3.8.3

ITS

A.1

M.8

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

M.5

single largest post-accident load

LA.4

SURVEILLANCE REQUIREMENTS (Continued)

Add proposed Note 2 to SR 3.8.1.10

L.9

L.6

SR 3.8.1.10 — 2. Verifying the generator capability to reject a load greater than or equal to 600 kw while maintaining voltage at 4160 ± 420 volts and frequency at 60 ± 1.2 Hz.

the frequency ≤ 64.4 Hz and within 2 seconds

M.8

Add proposed Note 2 to SR 3.8.1.11

≥ 3150 kW and ≤

L.10

SR 3.8.1.11 — 3. Verifying the generator capability to reject a load of 3500 kw without exceeding 75% of the difference between nominal speed and the overspeed trip setpoint.

without tripping the DG

voltage is maintained ≤ 5000 V

M.1

SR 3.8.1.12 — 4. Simulating a loss of offsite power by itself, and:

actual or

Add proposed Note 1 to SR 3.8.1.12

A.5

L.11

a) Verifying de-energization of the emergency busses and load shedding from the emergency busses,

b) Verifying that the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds, energizes the auto-connected shutdown loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the shutdown loads. After load sequencing is completed, the steady state voltage and frequency of the emergency busses shall be maintained at 4160 ± 420 volts and 60 ± 1.2 Hz during the test.

M.5

A.5

Add proposed Note 1 to SR 3.8.1.13

SR 3.8.1.13 — 5. Verifying that, on a Safety Injection actuation test signal (without loss of offsite power), the diesel generator starts on the auto-start signal and operates on standby for greater than or equal to 5 minutes.

actual or

L.11

M.9

Add SR 3.8.1.13 parts a, b, d, and e

Add proposed Note 1 to SR 3.8.1.19

A.5

SR 3.8.1.19 — 6. Simulating a loss of offsite power in conjunction with a Safety Injection actuation test signal, and by:

actual or

L.11

a) Verifying de-energization of the emergency busses and load shedding from the emergency busses,

b) Verifying the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds, energizes the auto-connected emergency (accident) loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the emergency loads. After load sequencing is completed, the steady state voltage and frequency of the emergency busses shall be 4160 ± 420 volts and 60 ± 1.2 Hz. The voltage and frequency shall be maintained within these limits for the remainder of this test, and

M.5

ITS 3.8.1

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

L.6

A.11

SR 3.8.1.14 c) Verifying that all automatic diesel generator trips, except engine overspeed and generator differential, are automatically bypassed upon loss of voltage on the emergency bus ~~and~~/or Safety Injection actuation signal.

L.12 Add proposed Note 3 to SR 3.8.1.15

≥ 3150 kW and ≤

SR 3.8.1.15
SR 3.8.1.16

7. Verifying that the diesel generator operates at a power factor of less than or equal to 0.8~~6~~ for at least 8 hours.* During this test the diesel generator shall be loaded to ~~3500~~ kw. Within 5 minutes after completing this 8-hour test perform Surveillance Requirement 4.8.1.1.2.a.4 (at existing conditions).**

A.5 Add proposed Note 2 to SR 3.8.1.16

8. ~~Determine that the auto-connected loads to each diesel generator do not exceed 3500 kw.~~ L.13

SR 3.8.1.17

9. Verifying the diesel generator's capability to:

a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power.

b) Transfer its loads to the offsite power source, and

c) Be restored to its standby status.

Add proposed Note to SR 3.8.1.20 A.13

SR 3.8.1.20

10. Verifying that with the diesel generator operating in a test mode while connected to its test load, a simulated Safety Injection signal overrides the test mode by:

or actual

L.11

a) Returning the diesel generator to standby operation, and

b) Verifying the emergency loads are serviced by offsite power.

Add proposed SR 3.8.1.21 M.12

SR 3.8.1.18

11. Verifying that the automatic sequence timing relays are OPERABLE with each load sequence time within plus or minus 5% of its required value and that each load is sequenced on within the design allowable time limit.

SR 3.8.1.22

f. At least once per 10 years by:

1) Employing one of the following cleaning methods to clean the fuel oil storage tanks:

a) Drain each fuel oil storage tank, remove the accumulated sediment, and clean the tank, or

See ITS 3.8.3

SR 3.8.1.15 Note 1, SR 3.8.1.16 Note 1 * Momentary transients outside the load and power factor range do not invalidate this test.

SR 3.8.1.16 Note 1 ** If Surveillance Requirement 4.8.1.1.2.a.4 is not satisfactorily completed, it is not necessary to repeat the preceding 8-hour test. Instead, the diesel generator may be operated at ~~3500~~ kw for 2 hours ~~or until operating temperature has stabilized~~.

≥ 3150 kW and ≤ L.6

A.8

ITS

A.1

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

b) Agitate the fuel oil in the storage tank while pumping the oil from the bottom of the tank through a 5-micron filter, and back to the opposite end of the tank. Three successive samples shall be taken and analyzed according to ASTM D2276-83. If the contaminant level in any of the samples is greater than 10 mg per liter, the agitation, filtration, and sampling processes shall be repeated. If the contaminant level remains above 10 mg per liter after 3 iterations, the draining and cleaning method described in surveillance requirement 4.8.1.1.2.f.1.a shall be employed.

2) Performing a precision leak detection test to verify that the leakage rate from the fuel oil system is less than or equal to .05 gallons per hour.

See ITS 3.8.3

A.5 Add proposed Note to SR 3.8.1.22

SR 3.8.1.22 3) Starting both diesel generators simultaneously, ~~during shutdown, and verifying that both diesel generators~~ accelerate to at least ~~514 RPM~~ in less than or equal to 10 seconds.*

L.14

M.10 Add proposed voltage limit

L.15 58.8 Hz

M.11 Add proposed SR Notes 1 and 2

M.11 Add proposed SR 3.8.1.23

~~*Shall be performed after any modifications which could affect diesel generator interdependence.~~ L.16

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

TABLE 4.8-1

DIESEL GENERATOR TEST SCHEDULE

Number of Failures in Last 20 Valid Tests*	Test Frequency
Less than or equal to 1	At least once per 31 days
Greater than or equal to 2	At least once per 7 days**

L.2

* Criteria for determining number of failures and valid tests shall be in accordance with Regulatory Position C.2.1 of Regulatory Guide 1.9, Revision 3, where the number of tests and failures is determined on a per diesel generator basis. For the purposes of this test schedule, only valid tests conducted after the OL issuance date shall be included in the computation of the "last 20 valid tests."

** This test frequency shall be maintained until seven consecutive failure free demands have been performed and the number of failures in the last 20 valid demands has been reduced to one or less.

L.2

ITS 3.8.1

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A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.0 APPLICABILITY

LIMITING CONDITION FOR OPERATION

3.0.1 Limiting Conditions for Operation and ACTION requirements shall be applicable during the OPERATIONAL MODES or other conditions specified for each specification, except as proviced in Specification 3.0.6.

3.0.2 Adherence to the requirements of the Limiting Condition for Operation and/or associated ACTION within the specified time interval shall constitute compliance with the specification, except as provided in Specification 3.0.6. In the event the Limiting Condition for Operation is restored prior to expiration of the specified time interval, completion of the ACTION statement is not required.

3.0.3 When a Limiting Condition for Operation is not met, except as provided in the associated ACTION requirements, within one hour action shall be initiated to place the unit in a MODE in which the Specification does not apply by placing it, as applicable, in: See ITS Section 3.0

1. At least HOT STANDBY within the next 6 hours,
2. At least HOT SHUTDOWN within the following 6 hours, and
3. At least COLD SHUTDOWN within the subsequent 24 hours.

Where corrective measures are completed that permit operation under the ACTION requirements, the ACTION may be taken in accordance with the specified time limits as measured from the time of failure to meet the Limiting Condition for Operation. Exceptions to these requirements are stated in the individual Specifications.

3.0.4 When a Limiting Condition for Operation is not met, entry into an OPERATIONAL MODE or other specified condition in the Applicability shall only be made:

a. When the associated ACTIONs to be entered permit continued operation in the OPERATIONAL MODE or other specified condition in the Applicability for an unlimited period of time;

b. After performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the OPERATIONAL MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate; exceptions to this Specification are stated in the individual Specifications, or

c. When an allowance is stated in the individual value, parameter, or other Specification.

This Specification shall not prevent changes in OPERATIONAL MODES or other specified conditions in the Applicability that are required to comply with ACTIONs or that are part of a shutdown of the unit.

Required Actions A.2, B.2, and C.1

3.0.5 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, it may be considered OPERABLE for the purpose of satisfying the requirements of its applicable Limiting Condition for Operation, provided: (1) its corresponding normal or emergency power source is OPERABLE; and (2) all of its redundant system(s), subsystem(s), train(s), component(s) and device(s) are OPERABLE, or likewise satisfy the requirements of this specification. Unless both conditions (1) and (2) are satisfied,

ITS 3.8.1

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.0 APPLICABILITY

L.17

within ~~2 hours action shall be initiated to place the unit in a MODE in which the applicable Limiting Condition for Operation does not apply by placing it as applicable in:~~

24 hours for proposed Required Action A.2
4 hours for proposed Required Action B.2
12 hours for proposed Required Action C.1

~~1. At least HOT STANDBY within the next 6 hours,~~
~~2. At least HOT SHUTDOWN within the following 6 hours, and~~
~~3. At least COLD SHUTDOWN within the subsequent 24 hours.~~

Declare required features inoperable. L.17

~~This Specification is not applicable in MODES 5 or 6.~~ A.7

3.0.6 Equipment removed from service or declared inoperable to comply with ACTION requirements may be returned to service under administrative controls solely to perform testing required to demonstrate its OPERABILITY or the OPERABILITY of other equipment. This is an exception to Specifications 3.0.1 and 3.0.2 for the system returned to service under administrative control to perform the testing required to demonstrate OPERABILITY.

SURVEILLANCE REQUIREMENTS

4.0.1 Surveillance Requirements shall be met during the OPERATIONAL MODES or other specified conditions in the Applicability for individual Limiting Condition for Operations, unless otherwise stated in the Surveillance Requirement. Failure to meet a Surveillance, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the Limiting Condition for Operation. Failure to perform a Surveillance within the specified frequency shall be failure to meet the Limiting Condition for Operation except as provided in Specification 4.0.3. Surveillances do not have to be performed on inoperable equipment or variables outside specified limits.

4.0.2 Each Surveillance Requirement shall be performed within the specified time interval with a maximum allowable extension not to exceed 25% of the specified surveillance interval.

See ITS Section 3.0

4.0.3 Performance of a Surveillance Requirement within the specified time interval shall constitute compliance with OPERABILITY requirements for a Limiting Condition for Operation and associated ACTION statements unless otherwise required by the specification.

If it is discovered that a surveillance was not performed within its specified surveillance interval, then compliance with the requirement to declare the Limiting Condition for Operation not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified surveillance interval, whichever is less. This delay period is permitted to allow performance of the surveillance.

If the surveillance is not performed within the delay period, the Limiting Condition for Operation must immediately be declared not met, and the applicable ACTION requirements must be met.

When the surveillance is performed within the delay period and the surveillance criteria are not met, the Limiting Condition for Operation must immediately be declared not met, and the applicable ACTION requirements must be met.

Surveillance requirements do not have to be performed on inoperable equipment.

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DISCUSSION OF CHANGES
ITS 3.8.1, AC SOURCES - OPERATING

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A.2 CTS LCO 3.8.1.1 does not contain the OPERABILITY requirements for the opposite unit qualified offsite circuit and diesel generators (DGs). However, the CTS definition of "OPERABLE - OPERABILITY" requires that, for all equipment required to be OPERABLE, all attendant equipment (this includes normal and emergency electrical sources) are also capable of performing their related support functions. New requirements were added as ITS LCO 3.8.1.c and ITS LCO 3.8.1.d. ITS LCO 3.8.1.c will require one opposite unit qualified circuit between the offsite transmission network and the opposite unit onsite Class 1E AC electrical power distribution system capable of supporting the equipment required to be OPERABLE by LCO 3.7.8, "Essential Service Water (ESW) System," and LCO 3.8.1.d will require the opposite unit DG(s) capable of supporting the equipment required to be OPERABLE by LCO 3.7.8. This changes the CTS by adding explicit AC Source requirements for the opposite unit to the LCO.

The purpose of ITS LCO 3.8.1.c and ITS LCO 3.8.1.d is to ensure the appropriate AC Sources are available to support the ESW System.
CTS LCO 3.7.4.1 requires two independent ESW loops to be OPERABLE. The CTS 3/4.7.4 Bases state that the LCO also ensures that an inoperable opposite unit ESW pump does not result in flow being diverted from an OPERABLE unit ESW pump sharing the same header. Therefore, if the header between the two units is not isolated, both ESW pumps on the same header support both units. Since the ESW pumps of the opposite unit are supported by the offsite circuits and DG(s) of the opposite unit, per the definition of OPERABILITY, these AC Sources are currently required to be OPERABLE when the associated ESW pump is not isolated from the other unit. This change is designated as administrative because it does not result in a technical change to the CTS.

A.3 CTS 3.8.1.1 Action c applies when one offsite circuit and one DG are inoperable. In this condition, an emergency bus may be de-energized. CTS LCO 3.8.2.1 provides an Action for an emergency bus that is de-energized. A Note to ITS 3.8.1 ACTION D in the Required Actions column states, "Enter applicable Conditions and Required Action of LCO 3.8.9, "Distribution System - Operating," when Condition D is entered with no AC power source to any train." This changes the CTS by requiring the compensatory actions for Distribution System - Operating to be taken if a distribution train is made inoperable by inoperable AC Sources.

This change is acceptable because no changes are made to CTS requirements. The change in format from the CTS to the ITS maintains all technical

DISCUSSION OF CHANGES
ITS 3.8.1, AC SOURCES - OPERATING

requirements. The addition of the Note only acts as a reminder to enter all appropriate ACTIONS if any emergency bus becomes de-energized. In the event AC Sources are inoperable such that a distribution subsystem were inoperable, ITS LCO 3.0.6 would allow taking only the AC Sources ACTIONS; taking exception to complying with the Distribution System ACTIONS. Since the AC Sources ACTIONS may not be sufficiently conservative in this event (an entire train may be without power), specific direction to take appropriate ACTIONS for the Distribution System is added (ITS 3.8.1, Note to ACTION D) when there is no power for a train. This format and construction implements the existing treatment of this condition within the framework of the CNP Units 1 and 2 ITS methods. This change is designated as administrative because it does not result in a technical change to the CTS.

A.4 CTS LCO 3.8.1.1 does not contain an Action for more than two sources of either offsite circuits or DGs inoperable. Having more than two sources inoperable requires entering CTS LCO 3.0.3. ITS 3.8.1 ACTION G requires entering LCO 3.0.3 immediately if three or more AC Sources are inoperable. This changes the CTS by adding a specific ACTION requiring entry into LCO 3.0.3.

The change is acceptable because the CTS Actions for more than two sources inoperable are the same as the ITS ACTIONS. The change is necessary due to the format of the ITS. This change is designated as administrative because it does not result in a technical change to the CTS.

A.5 CTS 4.8.1.1.2.a.4, CTS 4.8.1.1.2.e.4, CTS 4.8.1.1.2.e.5, CTS 4.8.1.1.2.e.6, CTS 4.8.1.1.2.e.7, and CTS 4.8.1.1.2.f.3) require the DGs to be started. ITS SR 3.8.1.2, SR 3.8.1.8, SR 3.8.1.12, SR 3.8.1.13, SR 3.8.1.19, and SR 3.8.1.22 also require the DGs to be started. However, each of the ITS Surveillances include a Note concerning a prelube. ITS SR 3.8.1.2 Note 1 states that all DG starts may be preceded by an engine prelube period and followed by a warmup period prior to loading. The Note to SR 3.8.1.8 and SR 3.8.1.22, Note 1 to SR 3.8.1.12, SR 3.8.1.13, and SR 3.8.1.19, and Note 2 to SR 3.8.1.16 state that all DG starts may be preceded by an engine prelube period. This changes the CTS by adding the Notes to the applicable Surveillance Requirements.

A Note has been added to various Surveillances which allows all DG starts to be preceded by an engine prelube period to minimize wear and tear on the DGs during testing. The addition of the Note is considered administrative since the DGs at CNP Units 1 and 2 run in a continuous prelube mode of operation. In addition, the Note to ITS SR 3.8.1.2 allows a warmup period prior to loading. The addition of this part of the Note is considered administrative because the DGs are not immediately loaded upon startup, but are allowed to warmup for a short time after startup while the operations staff performs post startup DG checks. This change is designated as administrative because it does not result in a technical change to the CTS.

A.6 CTS 4.8.1.1.2.a.5 requires the DG to be synchronized and loaded for $\geq$ 60 minutes. Footnote ** allows for momentary load transients to not invalidate this test. In addition, the CTS does not place a time limit on loading the DG for this test. ITS SR 3.8.1.3 requires this same test and Footnote ** is incorporated as Note 2 to SR 3.8.1.3. However, SR 3.8.1.3 Note 1 has been added, which

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states that DG loadings may include gradual loading as recommended by the manufacturer. This changes the CTS by adding an explicit Note that states that DG loadings may include gradual loading as recommended by the manufacturer.

CTS 4.8.1.1.2.a.5 requires the load to be at a specific value for ≥ 60 minutes. The added allowances simply state that prior to entering the load range of the test the DG can be gradually loaded. This is currently allowed by the CTS since there is no explicit requirement precluding this operation. This change is acceptable because Note 1 to SR 3.8.1.3 simply clarifies how the DG can be loaded prior to entering the load range for the test. This change is designated as administrative because it does not result in a technical change to the CTS.

A.7 CTS 3.0.5 states that it is not applicable in MODE 5 or 6. CTS 3.0.5 has been incorporated into the ACTIONS of ITS 3.8.1. This changes the CTS by incorporating the allowances of CTS 3.0.5 in ITS 3.8.1.

This change is acceptable because ITS 3.8.1 is only applicable in MODES 1, 2, 3, and 4. Therefore, the statement in CTS 3.0.5, which states that the Specification is not applicable in MODE 5 or 6, is no longer necessary and is deleted. This change is designated as administrative because it does not result in technical changes to the CTS.

A.8 CTS 4.8.1.1.2.e.7 requires verification that the DG operates at a power factor of less than or equal to 0.86 for at least 8 hours. Within 5 minutes after completing this test, CTS 4.8.1.1.2.a.4, the normal DG start test, must be performed. CTS 4.8.1.1.2.e.7 footnote ** states that if CTS 4.8.1.1.2.a.4 is not completed satisfactorily, it is not necessary to repeat the 8 hour test. Instead, the DG may be operated at the load required in CTS 4.8.1.1.2.e.7 for 2 hours "or until operating temperature has stabilized." The criteria for performing the normal DG start test within 5 minutes after completing the 8 hour test has been incorporated into ITS SR 3.8.1.16 Note 1. This Note states that the SR must be performed within 5 minutes of shutting down the DG after the DG has operated for ≥ 2 hours within a specified load range. This changes the CTS by deleting the allowance to allow the DG to operate until temperature has stabilized.

The purpose of CTS 4.8.1.1.2.e.7 and associated footnote is to verify the ability of the DG to start at hot conditions. If CTS 4.8.1.1.2.a.4 (the DG restart test portion) fails after the performance of the 8 hour DG load test, the ** footnote to CTS 4.8.1.1.2.e.7 allows the DG to be operated at the specified load for 2 hours or until operating temperature has stabilized. ITS SR 3.8.1.16 Note 1 only includes a requirement that load must be within the load range for ≥ 2 hours within 5 minutes of starting the SR. Operation for at least 2 hours has been demonstrated to be the time to achieve hot conditions (i.e., a stabilized operating temperature). Since the prerequisite for the SR is effectively unchanged, this change is considered administrative. This change is designated as administrative because it does not result in technical changes to the CTS.

A.9 CTS 4.8.1.1.1.b requires the demonstration of the offsite circuits by transferring the unit power source automatically from the normal auxiliary source to the preferred reserve source and by transferring manually to the alternate reserve source. ITS SR 3.8.1.9 requires the same Surveillance, however a Note is

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added which states that the automatic transfer is only required to be met when the auxiliary source is supplying the onsite electrical power distribution subsystem. This changes the CTS by adding a clarification Note to the Surveillance (Note to ITS SR 3.8.1.9).

This change is acceptable since the preferred offsite circuit would be in a configuration to perform its safety function, and the auxiliary source (main generator) is not required for OPERABILITY. This change is designated as administrative because it does not result in technical changes to the CTS.

A.10 CTS 4.8.1.1.2.e contains a requirement to perform various tests "during shutdown." These tests have been incorporated in ITS SR 3.8.1.10 through SR 3.8.1.15 and SR 3.8.1.17 through SR 3.8.1.20. These Surveillances include a Note which state that the Surveillance shall not normally be performed in MODE 1 or 2 or MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. In addition, the Note states that credit may be taken for unplanned events that satisfy the SR. This changes the CTS by adding the allowance that credit may be taken for unplanned events that satisfy the associated SR. Additional changes to CTS 4.8.1.1.2.e are discussed in DOC L.8.

The ITS Notes clearly presents the allowance of the current practice of taking credit for unplanned events, provided the necessary data is obtained. This change is designated as administrative because it does not result in technical changes to the CTS.

A.11 CTS 4.8.1.1.2.e.6.c) requires the verification that all automatic DG trips, except engine overspeed and generator differential, are automatically bypassed upon loss of voltage on the emergency bus "and/or" Safety Injection actuation signal. ITS SR 3.8.1.14 requires the verification that each DG's automatic trips are bypassed on an actual or simulated loss of voltage signal on the emergency bus "or" an actual or simulated ESF signal. This changes the CTS by clarifying the automatic trips are bypassed either upon loss of voltage on the emergency bus "or" an ESF signal, not both of them concurrently as could be interpreted by use of the "and/or" term.

This change is acceptable since it reflects the actual design of the system and the manner in which the current testing is being performed. The automatic trips other than the engine overpseed and generator differential are automatically bypassed when either the ESF signal or the loss of voltage signal are present. This change is designated as administrative because it does not result in technical changes to the CTS.

A.12 CTS LCO 3.8.1.1.b.1 requires each DG fuel day tank to contain a minimum volume of 70 gallons of fuel. ITS SR 3.8.1.4 requires each DG fuel day tank to contain $\geq$ 101.4 gallons of fuel oil. This changes the CTS by clarifying that the amount of fuel oil required to be stored in the DG day tank includes both the usable and unusable volumes.

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The purpose of CTS LCO 3.8.1.1.b.1 is to ensure the DG has sufficient fuel oil supply to allow the DG to run at full load before one of the fuel oil transfer pumps must be started to replenish the fuel oil supply and ensure uninterrupted DG service. As stated in the CTS Bases, the 70 gallons of fuel required by CTS LCO 3.8.1.1.b.1 is the usable volume. For clarity and for consistency with the fuel oil storage tank volume requirement, the contained volume is provided. Each fuel oil day tank has 31.4 gallons of unusable volume (taking into account the geometry of the tank and a minimum submergence to suppress vortexing). Therefore, the proposed value of 101.4 gallons ensures 70 gallons of usable fuel oil in the day tank. The change is acceptable since the proposed DG fuel oil volume in each day tank will ensure at least 15 minutes of DG operation. This change is designated as administrative because the day tank volume requirements are now explicit in stating the required volume of 101.4 gallons is a contained volume.

A.13 CTS 4.8.1.1.2.e.10 requires verifying that with the DG operating in a test mode while connected to its test load, a simulated Safety Injection (SI) signal overrides the test mode by returning the DG to standby operation and ensuring the emergency loads remain powered by offsite power. ITS SR 3.8.1.20 requires a similar test, however a Note (Note 1) is included that states that the Surveillance is only required to be met when the DG is connected to its load test resistor bank. This changes the CTS by adding a specific statement concerning when the Surveillance is required to be met.

The purpose of CTS 4.8.1.1.2.e.10 is to verify the design of the DG logic when the DG is connected to the load test resistor bank. The CNP design includes the capability of paralleling the DG with the load test resistor bank instead of actually paralleling the DG with offsite power (i.e., via the emergency buses). However, under normal conditions, the DGs are not connected to their associated test bank. Therefore, if the design feature is not functioning properly, the associated DG is only required to declared inoperable if it is actually connected to its associated load test resistor bank. The added Note simply clarifies this current allowance and is therefore acceptable. This change is designated as administrative because it does not result in a technical change to the CTS.

MORE RESTRICTIVE CHANGES

M.1 CTS 4.8.1.1.2.e.3 requires a verification that the DG is capable of rejecting a load of 3500 kW without exceeding 75% of the difference between nominal speed and the overspeed trip setpoint. ITS SR 3.8.1.11 requires verification that each DG does not trip and voltage is maintained $\leq$ 5000 V during and following a load rejection of $\geq$ 3150 kW and $\leq$ 3500 kW. This changes the CTS by adding a DG voltage limitation to the full load reject test. The change to the load range is discussed in DOC L.6 and the change to the speed limitation is discussed in DOC L.10.

The purpose of CTS 4.8.1.1.2.e.3 is to verify the proper operation of the DG governor and load control circuits. This change adds a DG voltage limitation to the acceptance criteria for the full load reject test. This Surveillance ensures proper engine generator load response under the simulated test conditions. This test simulates the loss of the total connected load that the DG experiences following a full load rejection and verifies that the DG does not trip upon loss of the load. This new acceptance criterion ensures that the DG is protected from damage upon loss of load. While the DG is not expected to experience this transient during an event, and is expected to continue to be available, verifying this response ensures that the DG is not degraded for future application, including reconnection to the bus if the trip initiator can be corrected or isolated. This change is acceptable since it is consistent with Regulatory Guide 1.9, Rev. 3, paragraph C.2.2.8. This Surveillance demonstrates the DG capability to reject a full load without overspeed tripping or exceeding the predetermined voltage limits. This change is designated as more restrictive because a new acceptance criterion has been added to the DG full load reject test.

M.2 CTS 3.8.1.1 does not contain any explicit Action requirements for the opposite unit qualified circuits and DGs when these AC Sources are inoperable but are required to support the ESW System. CTS LCO 3.0.5 would allow the ESW System not to be declared inoperable as long as its normal or emergency power source is OPERABLE and all of its redundant support equipment are OPERABLE. ITS 3.8.1 ACTIONS A and B have been added to cover the situation when the opposite unit qualified offsite circuit or DG is inoperable, respectively. ITS 3.8.1 Required Action A.3 will require the offsite circuit to be restored to OPERABLE status within 72 hours while ITS 3.8.1 Required Action B.4 will require the inoperable DG to be restored to OPERABLE status within 72 hours. ITS 3.8.1 Required Actions B.3.1 and B.3.2 require a determination that the OPERABLE DG(s) is not inoperable due to common cause failure or to perform a DG start for each OPERABLE DG. In addition, a Note has been added to the Applicability which allows the opposite unit AC electrical power sources required by LCO 3.8.1.c and LCO 3.8.1.d to not be required to be OPERABLE when the associated equipment is inoperable. This change adds additional compensatory actions for the inoperable opposite unit AC Sources.

The purpose of ITS 3.8.1 ACTIONS A and B are to limit the time the unit can operate with inoperable AC Sources and to perform other compensatory measures. When an ESW header is cross-tied, the opposite unit ESW pump is required to be OPERABLE to support the associated ESW train. CTS 3.0.5 would allow continuous operation as long as the opposite unit ESW pump has at least one offsite circuit or DG to support its operation and there is no redundant equipment inoperable. This time has been limited to 72 hours. The proposed change is acceptable since the proposed Completion Times are consistent with the 72 hour Completion Time currently allowed for the unit AC Sources. The added Applicability Note will allow the associated ESW equipment to be declared inoperable. This exception is intended to allow declaring the opposite unit supported equipment inoperable either in lieu of declaring the opposite unit power source inoperable, or at any time subsequent to entering ACTIONS for an inoperable opposite unit power source. This exception is acceptable since it is consistent with CTS 3.0.5, which allows an exception to the definition of OPERABLE - OPERABILITY (i.e., the component can always be declared inoperable). This change is designated as more restrictive since the Completion Time for restoring inoperable opposite unit AC Sources has been reduced consistent with the current Completion Times for the unit AC Sources.

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M.3 CTS 3.8.1.1 Action d specifies the compensatory actions for two inoperable offsite circuits. The action requires restoration of at least one of these sources, and if not restored within the allowed time, the unit is required to be in at least HOT STANDBY within the next 6 hours. In the ITS, if at least one offsite circuit is not restored to OPERABLE status within the allowed time, then ITS 3.8.1 ACTION F requires the unit to be in MODE 3 within 6 hours and MODE 5 within 36 hours. This changes the CTS by adding the requirement to be in MODE 5 within 36 hours.

The purpose of CTS 3.8.1.1 Action d is to provide the appropriate compensatory actions for two inoperable offsite circuits. The current action does not place the unit outside of the Applicability of the Specification. All other CTS 3.8.1.1 Actions require the unit to be placed outside of the Applicability of the Specification (i.e., MODE 5). This action is also considered appropriate for two inoperable offsite circuits. This change is designated as more restrictive because the unit must be placed outside of the Applicability of the Specification (i.e., MODE 5) instead of just to MODE 3.

M.4 CTS 4.8.1.1.2.a.3 requires the verification that the fuel transfer pump can be started and that it transfers fuel from the storage system to the day tank. ITS SR 3.8.1.7 requires verification that each fuel oil transfer system operates to "automatically" transfer fuel oil from the storage tank to the day tank. This changes the CTS by adding a requirement that the fuel oil transfer system must operate automatically.

The purpose of CTS 4.8.1.1.2.a.3 is to ensure the fuel transfer system is OPERABLE. This change will require a verification that a transfer pump starts automatically to transfer fuel on low level in the day tank. This change is necessary since it ensures a continuous fuel supply for the DG so that the DG can supply power to safety related equipment. This change is designated as more restrictive since the transfer pump will be required to start automatically.

M.5 CTS 4.8.1.1.2.a.4, the normal DG start test, requires a verification that each DG starts from standby conditions and achieves in less than or equal to 10 seconds, a voltage of 4160 $\pm$ 420 V and a frequency of 60 $\pm$ 1.2 Hz. CTS 4.8.1.1.2.a.4 footnote * clarifies that the DG start (10 seconds) from standby conditions shall be performed at least once per 184 days in these surveillance tests. All other engine starts for the purpose of this Surveillance testing and compensatory action may be at reduced acceleration rates as recommended by the manufacturer so that mechanical stress and wear on the DG are minimized. CTS 4.8.1.1.2.e.2, the single largest load reject test, requires the verification of the generator capability to reject a load greater than or equal to the specified value while maintaining voltage at 4160 $\pm$ 420 V and frequency of 60 $\pm$ 1.2 Hz. CTS 4.8.1.1.2.e.4, the simulated loss of offsite power test, and CTS 4.8.1.1.2.e.6, the simulated loss of offsite power test in conjunction with a Safety Injection signal test, also specify a steady state voltage of 4160 $\pm$ 420 V and frequency of 60 $\pm$ 1.2 Hz. CTS 4.8.1.1.2.e.7 requires the performance of CTS 4.8.1.1.2.a.4 within 5 minutes after performing the 8 hour test (commonly called a hot restart test). CTS 4.8.1.1.2.a.4 is divided into three Surveillances in the ITS. ITS SR 3.8.1.2 requires the verification that each DG starts from standby conditions and achieves steady state voltage of $\geq$ 3910 V and $\leq$ 4400 V and frequency of

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≥ 59.4 Hz and ≤ 61.2 Hz. ITS SR 3.8.1.2 Note 2 specifies that the modified DG start involving gradual acceleration to synchronous speed may be used for this SR as recommended by the manufacturer. ITS SR 3.8.1.8, the 184 day quickstart test, and SR 3.8.1.16, the 24 month hot restart test, require a steady state voltage of ≥ 3910 V and ≤ 4400 V and a steady state frequency of ≥ 59.4 Hz and ≤ 61.2 Hz. ITS SR 3.8.1.10, the single largest load reject test, requires the verification that within 2 seconds following load rejection voltage is ≥ 3910 V and ≤ 4400 V and frequency is ≥ 59.4 Hz and ≤ 61.2 Hz. ITS SR 3.8.1.12, the loss of offsite power test, and SR 3.8.1.19 the loss of offsite power test in conjunction with an ESF signal, also require verification of the same limitations for steady state voltage and frequency. This changes the CTS in that the steady state voltage range has been reduced from 4160 ± 420 V to 4160 +240 V, -250 V and the steady state frequency range has been reduced from 60 ± 1.2 Hz to 60 + 1.2 Hz, -0.6 Hz. The deletion of the maximum voltage and frequency limit for the quick start tests are described in DOC L.18.

The purpose of the CTS 3.8.1.1 Surveillances is to provide the appropriate limitations for DG voltage and frequency. This change reduces the steady state voltage and frequency range. The more restrictive steady state voltage and frequency limits provide assurance that the emergency safety features (ESF) pumps have the appropriate level of voltage and frequency available so that they are assured of achieving adequate fluid flow to meet their safety and accident mitigation functions. The maximum voltage limit also provides a 10% voltage allowance for the 4000 V rated motors. This change is designated as more restrictive because the proposed limits for voltage and frequency have been reduced.

M.6 CTS 3/4.8.1.1 does not specify any requirements for the DG air start receiver pressure. ITS SR 3.8.1.6 requires verification that each required DG air start receiver pressure is ≥ 190 psig every 31 days. This changes the CTS by adding a new Surveillance to the Technical Specifications that is not currently required.

The purpose of ITS SR 3.8.1.6 is to ensure sufficient air is available to start the DG. This Surveillance ensures that, without the aid of the refill compressor, sufficient air start capacity in the air start receiver for each DG is available. The pressure specified in this SR is intended to reflect the lowest value at which one start can be accomplished with one air start receiver. 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. This change is designated as more restrictive because a new requirement concerning DG air start receiver pressure has been added to the Technical Specifications.

M.7 CTS 4.8.1.1.2.a.5 requires each DG to be synchronized and loaded for ≥ 60 minutes. ITS SR 3.8.1.3 requires the same test, however two additional Notes have been added which place restrictions on the test. Notes 3 and 4 modify the CTS requirements by stating that the SR shall be conducted on only one DG at a time, and the SR shall be preceded by and immediately follow, without a shutdown of the DG, a successful performance of ITS SR 3.8.1.2 or ITS SR 3.8.1.8. This changes the CTS by adding restrictions when performing this test.

This change is acceptable because CTS 4.8.1.1.2.a.5 is normally conducted on one DG at a time. In addition, the loading of a DG is usually conducted without shutdown after a successful start during performance of CTS 4.8.1.1.2.a.4. This change is designated as more restrictive because explicit restrictions are added to the DG load test.

M.8 CTS 4.8.1.1.2.e.2 requires the testing of a DG with the loss of a load ≥ 600 kW while CTS 4.8.1.1.2.e.3 requires the testing of DG with a loss of load of 3500 kW. These Surveillances do not specify that a DG shall be tested at a specific power factor. ITS SR 3.8.1.10 requires the verification that each DG can reject a load equal to or greater than its associated single largest post-accident load. ITS SR 3.8.1.11 requires the verification that each DG can reject a load of ≥ 3150 kW and ≤ 3500 kW. The SRs additionally state in a Note "If performed with DG synchronized with offsite power, it shall be performed at a power factor ≤ 0.86. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable." This changes the CTS requirement by specifying a power factor of ≤ 0.86 if the testing is conducted by synchronizing with the offsite sources. Other changes to CTS 4.8.1.1.2.e.2 (ITS SR 3.8.1.10) are discussed in DOCs M.5, LA.4, and L.9, while other changes to CTS 4.8.1.1.2.e.3 (ITS SR 3.8.1.1.11) are discussed in DOCs L.6 and L.10.

This change is acceptable because the testing should be conducted as close as possible to the conditions that would be experienced by a DG following an accident. Loading the DG solely with the inductive characteristics of a large motor will create a power factor less than unity. The design of the DG is set for full power operation with a power factor of ≥ 0.8. Therefore, testing of the DG for a loss of the single largest load and at full load is acceptable with a power factor ≤ 0.86. This change is designated as more restrictive because the testing required by the CTS does not currently contain this limitation.

M.9 CTS 4.8.1.1.2.e.5, the Safety Injection actuation test (without a loss of power) requires the DG to start and operate for greater than or equal to 5 minutes. ITS SR 3.8.1.13 requires the verification that each DG auto-start from standby condition and; a) in ≤ 10 seconds the DG achieves voltage ≥ 3740 V and frequency ≥ 58.8 Hz; b) achieves steady state voltage ≥ 3910 V and ≤ 4400 V and frequency ≥ 59.4 Hz and ≤ 61.2 Hz; c) operates for ≥ 5 minutes; d) permanently connected loads remain energized from the offsite power system; and e) emergency loads are auto-connected through the time delay relays, where applicable, from the offsite power system. This changes the CTS by adding additional performance requirements for the Safety Injection actuation test (without a loss of power).

The purpose of the CTS 4.8.1.1.2.e.5 is to test the performance of each DG when a Safety Injection actuation test (without a loss of power) signal is simulated. The proposed change adds explicit minimum voltage and frequency limits to achieve within 10 seconds of a start signal and adds explicit steady state voltage and frequency limits. In addition, the Surveillance verifies that the appropriate loads are connected to the offsite circuit. The change is acceptable because the acceptance criteria are consistent with the design requirements of

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the DGs and with other similar SRs where the DG starts but does not tie to the emergency buses. This change is designated as more restrictive because additional acceptance criteria have been added to the CTS.

M.10 CTS 4.8.1.1.2.f.3) requires, at least every 10 years, that both DGs are started simultaneously with a verification that both DGs start and accelerate to at least 514 RPM in less than or equal to 10 seconds. ITS SR 3.8.1.22 requires verification when started simultaneously from standby condition that each DG achieves, in ≤ 10 seconds, voltage ≥ 3740 V and frequency ≥ 58.8 Hz. This changes the CTS by placing a minimum voltage limit for the DGs during this test. The change to the speed limit is discussed in DOC L.15.

The purpose of CTS 4.8.1.1.2.f.3) is to test the interdependence of the DGs. The new voltage limit ensures that components powered by the associated bus will have sufficient voltage to perform their required function. This change is acceptable since the acceptance criteria is consistent with all other DG start acceptance criteria. This change is designated as more restrictive because a DG voltage limit is added to the CTS for the DG interdependence test.

M.11 CTS LCO 3.8.1.1 does not contain any explicit LCO or Surveillance Requirements for the opposite unit qualified circuits and DGs when these AC Sources are required to support the ESW System. The opposite unit LCO requirements have been added as discussed in DOC A.2. ITS SR 3.8.1.23 has been added, and states which SRs of the opposite unit Specification 3.8.1 apply for the required opposite unit AC Sources. In addition, SR Table Notes 1 and 2 have been added to clarify which Surveillances are applicable to the given unit and which Surveillances are applicable to the opposite unit. SR Note 1 states that SR 3.8.1.1 through SR 3.8.1.22 apply to the given unit and SR Note 2 states that SR 3.8.1.23 is applicable to the opposite unit AC Sources. This changes the CTS by adding explicit Surveillances for the opposite unit required equipment.

The purpose of ITS SR 3.8.1.23 is to ensure the opposite unit AC Sources are OPERABLE. The proposed Surveillances are consistent with the current requirements that apply to the opposite unit. The change is acceptable since the Surveillances along with the Frequencies are consistent with the CTS as modified by other Discussion of Changes. This change is designated as more restrictive since the opposite unit Surveillances have been made applicable to the given unit.

M.12 CTS LCO 3.8.1 does not contain any explicit LCO or Surveillance requirements for verifying, when the DG is operating in test mode and connected to it emergency buses, that an actual or simulated Safety Injection Signal will override the test mode. ITS SR 3.8.1.21 has been added to perform this Surveillance requirement. Additionally, a note has been added stating that the Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. It also states that portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the unit is maintained or enhanced. Furthermore, it allows credit to be taken for unplanned events that this satisfy the SR.

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The purpose of ITS SR 3.8.1.21 is to verify the design of the DG logic when the DG is connected to the emergency bus. The proposed Surveillance is consistent with the commitment (CMS 7844) made to the NRC to test the ESF Actuation when connected to the emergency buses. This change is designated as more restrictive because a new Surveillance is being added.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.8.1.1.a requires two "physically independent" circuits between the offsite transmission network and the onsite Class 1E distribution system to be OPERABLE. CTS LCO 3.8.1.1.b requires two "separate and independent" DGs to be OPERABLE, each with a "separate" day fuel tank and a "separate fuel transfer pump." CTS 4.8.1.1.2.a.3 requires the verification that the fuel transfer "pump" can be started and that it transfers fuel from the storage system to the day tank. ITS LCO 3.8.1 requires two qualified circuits between the offsite transmission network and the onsite Class 1E distribution system and two DGs capable of supplying the onsite Class 1E power distribution subsystem(s) to be OPERABLE. ITS SR 3.8.1.4 requires verification that each day tank contains $\geq$ 101.4 gallons of fuel oil. ITS SR 3.8.1.7 requires verification that the fuel oil transfer system operates automatically to transfer fuel oil from the storage tank to the day tank. This changes the CTS by moving the details that the offsite circuits are "physically independent," that the DGs are "separate and independent," that the day tanks are "separate," and that each OPERABLE DG has "a separate fuel transfer pump" from the CTS to the Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirements for OPERABLE offsite sources and DGs and that the fuel oil transfer system operates automatically to transfer fuel oil from the storage tank to the day tank. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.2 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 4.8.1.1.2.a.6 requires the verification that each DG is aligned to provide standby power to the associated emergency buses. ITS 3.8.1 SRs do not contain this requirement. This changes the CTS by moving the detail

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that each DG is aligned to provide standby power to the associated emergency buses from the CTS to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still requires the DGs to be OPERABLE. An OPERABLE DG must be capable of providing power to the associated emergency buses as indicated in the Bases. The details of what an OPERABLE DG must be capable of performing does not need to appear in the Specification in order for the requirement to apply. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.3 *(Type 6 – Relocation of LCO, SR, or other TS requirement to the TRM, UFSAR, ODCM, QAPD, or IIP)* CTS 4.8.1.1.2.e.1 requires each DG to be subjected to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service. The ITS does not include this DG inspection requirement. This changes the CTS by moving the explicit DG inspection Surveillance from the Technical Specifications to the Technical Requirements Manual (TRM).

The removal of these details from the Technical Specifications is acceptable because this type of information is not necessary to provide adequate protection of public health and safety. The purpose of CTS 4.8.1.1.2.e.1 is to ensure that each DG is inspected in accordance with procedures performed in conjunction with the manufacturer's recommendations. The other DG Surveillances will ensure the DG is capable of performing its safety function. This requirement is proposed to be relocated to the TRM since the requirement is not needed to ensure that the DG remains OPERABLE. This change is acceptable because the removed information will be adequately controlled in the TRM. The TRM is incorporated by reference into the UFSAR and any changes to the TRM are made under 10 CFR 50.59, which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because a requirement is being removed from the Technical Specifications.

LA.4 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 4.8.1.1.2.e.2 requires verification of the DG performance during a load rejection of greater than or equal to 600 kW. ITS SR 3.8.1.10 requires verification of the DG performance during a load rejection greater than or equal to the single largest post-accident load. This changes the CTS by moving the detail of the actual load value (600 kW) from the CTS to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate

protection of public health and safety. The ITS still retains the requirement to test the DG for the rejection of the single largest post accident load. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.5 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 4.8.1.1.2.a.4 footnote * states that all engine starts for the purpose of this surveillance testing and compensatory action may be at reduced acceleration rates as recommended by the manufacturer "so that mechanical stress and wear on the DG are minimized." Note 2 to ITS SR 3.8.1.2 states that a modified DG start involving gradual acceleration to synchronous speed may be used for this SR as recommended by the manufacturer. This changes the CTS by moving the detail that mechanical stress and wear on the DG are minimized from the CTS to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the Note that a modified DG start involving gradual acceleration to synchronous speed may be used as recommended by the manufacturer. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L.1 *(Category 3 – Relaxation of Completion Time)* CTS 3.8.1.1 Action a specifies the compensatory actions for one inoperable offsite source. The action requires restoration of the two offsite circuits and two DGs to OPERABLE status within 72 hours. CTS 3.8.1.1 Action b specifies the compensatory actions for one inoperable DG. The action requires restoration of the DGs to OPERABLE status within 72 hours. CTS 3.8.1.1 Action c specifies the compensatory actions for one inoperable offsite circuit and one inoperable DG. The action requires restoration of at least one of these sources within 12 hours, and if the DG is restored to OPERABLE status to follow Action a and if the offsite circuit is restored to OPERABLE status to follow Action b. CTS 3.8.1.1 Action c also includes a footnote * that states that the Action time shall be based upon the time associated with the component inoperability, and is not reset when exiting this Action statement. CTS 3.8.1.1 Action d specifies the compensatory actions for two inoperable offsite circuits. The action requires restoration of at least one of these sources within 24 hours, and with only one offsite circuit restored to

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OPERABLE status to follow Action a. CTS 3.8.1.1 Action d also includes the same footnote mentioned above. CTS 3.8.1.1 Action e specifies the compensatory actions for two inoperable DGs. The action requires restoration of at least one of these sources within 2 hours, and with one DG restored to OPERABLE status to follow Action b or c. CTS 3.8.1.1 Action e also includes the same footnote mentioned above. ITS 3.8.1 Required Actions A.3, B.4, D.1 and D.2, C.2, and E.1, respectively include the same Completion Times as in the CTS. However, ITS 3.8.1 Required Actions A.3 (for an inoperable offsite circuit) and B.4 (for an inoperable DG) both include an additional requirement that restoration is required within 6 days from discovery of failure to meet LCO 3.8.1.a or b. This changes the CTS by extending the Completion Times for multiple concurrent AC Source inoperabilities from 72 hours to 6 days.

The purpose of the CTS 3.8.1.1 Actions are to limit the time the AC Sources can be inoperable prior to requiring a shutdown of the unit. This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, the capacity and capability of remaining features, a reasonable time for repairs or replacement of required features, and the low probability of a DBA occurring during the allowed Completion Time. In the event of multiple concurrent AC Source inoperabilities (i.e., one Train A or B DG and one offsite circuit), CTS 3.8.1.1 Action a limits restoration time to 72 hours from the time of initial loss of the first AC Source since CTS 3.8.1.1 Action a requires restoration of at least two offsite circuits and two DGs within 72 hours. When a second inoperability occurs just prior to restoration of the initial inoperability and close to the expiration of the initial 72 hours, this limitation can provide little or no time to effect repair. The result would be a forced shutdown of the unit. While these simultaneous inoperabilities are expected to be rare, it is also expected that any AC source inoperability would be repaired in a reasonable time (72 hours). Given the minimal risk of an event during the repair of the subsequent inoperability, the likelihood of a satisfactory return to OPERABLE status, and the risks involved with introducing plant transients associated with a forced shutdown, it is proposed to allow a separate time period for this subsequent repair. Since this rationale can be taken to extreme with continuous multiple overlapping inoperabilities, a maximum restoration time limit is imposed. The ITS format presents this as an additional Completion Time of "6 days from discovery of failure to meet LCO 3.8.1.a or b" in ITS 3.8.1 Required Actions A.3 and B.4. This change is designated as less restrictive because additional time is allowed to restore the components to within the LCO limits than is allowed in the CTS.

L.2 *(Category 7 – Relaxation of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.8.1.1.2.a requires that each DG be demonstrated OPERABLE in accordance with the frequency specified in Table 4.8-1 on a STAGGERED TEST BASIS. CTS Table 4.8-1 specifies the test frequency based on the number of failures that have occurred in testing each DG during the previous 20 tests. If the number of failures do not exceed the specified limit, testing is to be performed every 31 days on a STAGGERED TEST BASIS. If failures occur above the specified limits, then testing is conducted every 7 days on a STAGGERED TEST BASIS. In addition, CTS 3.8.1.1 Action b which covers inoperabilities associated with a DG includes a cross reference to the Table that states "At the number of failures for the inoperable diesel indicated in Table 4.8-1 perform the Additional

Reliability Actions prescribed in Table 4.8-1." ITS 3.8.1 does not include the requirements to test at an accelerated testing Frequency based on DG failures. ITS SR 3.8.1.2 requires each DG to be started at a fixed frequency of 31 days. ITS SR 3.8.1.3 requires each DG be synchronized and loaded and operated for ≥ 60 minutes at a fixed frequency of 31 days. This changes the CTS by eliminating the requirement to test the DGs at an increased frequency based on the number of test failures. The change to the STAGGERED TEST BASIS requirements is discussed in DOC L.4 and the changes to the test frequency of CTS 4.8.1.1.2.a.1 and 3 are discussed in DOCs L.5 and L.19, respectively.

The purpose of CTS Table 4.8-1 is to test the DG in accordance with Regulatory Guide 1.9, Rev. 3. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. This change deletes the requirement to test the DG at an increasing frequency based on the number of test failures. A plant procedure implements requirements and responsibilities for tracking DG failures for the determination of reaching trigger values specified in NUMARC 87-00. In addition, Generic Letter 94-01, "Removal of Accelerated Testing and Special Reporting Requirements for Diesel Generators," allows Licensees to request removal from the Technical Specifications of provisions for accelerated testing. CNP also proposes to make the changes allowed by Generic Letter 94-01. The basis for removing the accelerated testing requirements from the Technical Specifications and modifying the Surveillance Frequency of CTS 4.8.1.1.2.a.4 and CTS 4.8.1.1.2.a.5 (these Surveillances are tested in accordance with Table 4.8-1 in accordance with CTS 4.8.1.1.2.a), as stated in the Generic Letter, is for the licensee to commit to implement a maintenance program for monitoring and maintaining emergency DG performance in accordance with the provisions of the 10 CFR 50.65 (Maintenance Rule) and consistent with the guidance of Regulatory Guide 1.160. This commitment must be implemented within 90 days of issuance of the license amendment that removes the accelerated testing and special reporting requirements for emergency DGs from the Technical Specifications. CNP has already implemented a maintenance program for monitoring and maintaining emergency DG performance in accordance with the provisions of the Maintenance Rule and consistent with the guidance in Regulatory Guide 1.160. Therefore, since the commitment has already been met, the requirements are not required to be in the ITS to provide adequate protection of the public health and safety and the allowances in Generic Letter 94-01 are acceptable. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.3 *(Category 10 – 18 to 24 Month Surveillance Frequency Change, Non-Channel Calibration Type)* CTS 4.8.1.1.1.b requires a demonstration that the offsite circuits are OPERABLE by transferring the unit power source automatically from the normal auxiliary source to the preferred reserve source and by transferring manually to the alternate reserve source. CTS 4.8.1.1.2.e.2 requires a verification that the DG is capable of rejecting a load ≥ 600 kW. CTS 4.8.1.1.2.e.3 requires a verification that the DG is capable of rejecting a load of 3500 kW. CTS 4.8.1.1.2.e.4 requires a verification of the DG performance during a simulated loss of offsite power. CTS 4.8.1.1.2.e.5 requires a verification of the DG performance during a simulated Safety Injection actuation.

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CTS 4.8.1.1.2.e.6 requires a verification of the DG performance during a simulated Safety Injection actuation test signal with a loss of offsite power. CTS 4.8.1.1.2.e.7 requires a verification of the DG performance during an 8 hour run at the continuous load rating. CTS 4.8.1.1.2.e.9 requires a verification of the DG performance during a simulated restoration of offsite power. CTS 4.8.1.1.2.e.10 requires verifying that with the DG operating in a test mode while connected to its test load, a simulated Safety Injection signal overrides the test mode by returning the DG to standby operation and ensuring the emergency loads remain powered by offsite power. CTS 4.8.1.1.2.e.11 requires a verification of the automatic sequence timing relays. These Surveillances are performed on an 18 month Frequency. ITS SR 3.8.1.9 through SR 3.8.1.20 require the same testing (as modified by specific DOCs) at a 24 month Frequency. This changes the CTS by extending the Frequency of the Surveillance from 18 months (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2) to 24 months (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2).

The purpose of the CTS 3.8.1.1 Surveillances are to ensure the offsite circuits and the DGs are OPERABLE.

SR 3.8.1.9 requires automatic transfer from the auxiliary source to the preferred offsite circuit and manual alignment to the alternate offsite circuit to demonstrate the OPERABILITY of the required offsite circuits.

SR 3.8.1.10 verifies each DG rejects a load greater than or equal to its associated single largest post-accident load and following load rejection, the specified frequency limit is not exceeded and the specified frequency and voltage are achieved within the specified time. This SR verifies the proper operation of the DG governor and load control circuits.

SR 3.8.1.11 verifies each DG does not trip and the specified voltage is maintained during and following a load rejection of the specified load. This SR verifies the proper operation of the DG governor and load control circuits.

SR 3.8.1.12 verifies on an actual or simulated loss of offsite power 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 the specified time, 2) energizes auto-connected shutdown loads, 3) maintains the specified steady state voltage, 4) maintains the specified steady state frequency, and 5) supplies permanently connected and auto-connected shutdown loads for greater than the specified time. This Surveillance demonstrates the as-designed operation of the standby power sources during loss of the offsite source. 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 DG. It further demonstrates the capability of the DG to automatically achieve the required voltage and frequency within the specified time.

SR 3.8.1.13 verifies on actual or simulated Engineered Safety Feature (ESF) actuation signal each DG auto-starts from standby condition and: a) within the specified time after auto-start, achieves the specified voltage and frequency; b) achieves the specified steady state voltage and frequency; c) operates for the specified minimum time; d) permanently connected loads remain energized from the offsite power system; and e) emergency loads are auto-connected through the time delay relays from the offsite power system. This Surveillance demonstrates that the DG automatically starts and achieves the required voltage and frequency within the specified time from the design basis actuation signal (ESF signal) and operates for greater than the specified time period which provides sufficient time to demonstrate stability. In addition, it verifies the OPERABIITY of the offsite power system.

SR 3.8.1.14 verifies each DG's automatic trips are bypassed on an actual or simulated loss of offsite power signal on the emergency bus or an actual or simulated ESF actuation signal except: a) engine overspeed; and b) generator differential current. This SR is essentially a verification of logic since the normal operation of the DG has all automatic trips active, and the trips are only bypassed with an ESF actuation signal or a loss of power signal.

SR 3.8.1.15 verifies each DG operates $\geq$ 8 hours at the specified load range. This Surveillance demonstrates that the DG can operate at or above the maximum load during an accident and within the continuous rating of the diesel.

SR 3.8.1.16 verifies each DG starts and achieves: a) in the specified time the required voltage and frequency; and b) specified steady state voltage and frequency. This Surveillance demonstrates that the diesel engine can restart from a hot condition, such as subsequent to shutdown from normal Surveillances, and achieve the required voltage and frequency within the required time.

SR 3.8.1.17 verifies each DG: 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. This Surveillance ensures that the manual synchronization and load transfer from the DG to a required offsite power source can be made and that the DG can be returned to ready-to-load status when offsite power is restored. It also ensures that the undervoltage logic is reset to allow the DG to reload if a subsequent loss of offsite power occurs.

SR 3.8.1.18 verifies the interval between each sequenced load block is within the specified design interval for each time delay relay. Under accident conditions, loads are sequentially connected to the bus by the time delay relays. The time delay relays control the permissive and starting signals to motor breakers to prevent overloading of the bus power supply due to high motor starting currents. The load sequence time tolerance ensures that sufficient time exists for the bus power supply to restore frequency and voltage prior to applying the next load and that safety analysis assumptions regarding emergency equipment time delays are not violated.

SR 3.8.1.19 verifies 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-

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starts from standby condition and, 1) energizes permanently connected loads in less than the specified time, 2) energizes auto-connected emergency loads, 3) achieves steady state voltage specified, 4) achieves steady state frequency specified, and 5) supplies permanently connected and auto-connected emergency loads for greater than or equal to the specified time. This Surveillance demonstrates the DG operation, as discussed in the Bases for SR 3.8.1.12, during a loss of offsite power actuation test signal in conjunction with an ESF actuation signal. In lieu of actual demonstration of connection and energization of loads, testing that adequately shows the capability of the DG system to perform these functions is acceptable.

SR 3.8.1.20 requires verifying that, with a DG operating in a test mode and connected to its load test resistor bank, an actual or simulated ESF actuation signal overrides the test mode by returning DG to ready-to-load operation and verifying the emergency loads are serviced by offsite power. This test feature is only active when the DG is connected through the associated test breaker to the load test resistor bank, and has no function when the DG is operating in any other configuration, including when parallel with the offsite power system. Therefore, the Surveillance is only required when the DG is connected through the associated test breaker to the load test resistor bank.

This change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical surveillance data and maintenance data sufficient to determine failure modes have shown that these tests normally pass their Surveillances at the current Frequency. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. Extending the Surveillance test interval for the offsite circuits and DG SRs is acceptable because the DGs are verified to be operating properly throughout the operating cycle by other Technical Specification Surveillances. This testing ensures that a significant portion of the DG and offsite circuits are operating properly and will detect significant failures of the AC Sources. Additional justification for extending the Surveillance test interval is that the design provides substantial redundancy in AC sources. Based on system redundancy, component reliability, and the testing performed during the operating cycle, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 24 month Surveillance Frequency, if performed at the maximum interval allowed by ITS SR 3.0.2 (30 months) does not invalidate any assumptions in the plant licensing basis. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.4 *(Category 7 – Relaxation Of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.8.1.1.2.a states that each DG shall be demonstrate OPERABLE in accordance with the frequency specified in Table 4.8-1 "on a STAGGERED TEST BASIS." The Surveillance Frequency for ITS SR 3.8.1.2, SR 3.8.1.3, and SR 3.8.1.4 is every 31 days, but does not include the "STAGGERED TEST BASIS" requirement. The ITS SR 3.8.1.7 Surveillance Frequency is every

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92 days as discussed in DOC L.19, and also does not include the "STAGGERED TEST BASIS" requirement. This changes the CTS by deleting the requirement to test on a STAGGERED TEST BASIS.

The purpose of CTS 4.8.1.1.2.a is to demonstrate the OPERABILITY of the DG(s) and the associated support equipment (fuel oil day tank and fuel oil transfer system). This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. This change deletes the requirement to perform the Surveillances of CTS 4.8.1.1.2.a on a STAGGERED TEST BASIS. The intent of a requirement for staggered testing is to increase reliability of the component/system being tested. A number of studies have been performed that demonstrate that staggered testing has negligible impact on component reliability. These analytical and subjective analyses have determined that staggered testing 1) is operationally difficult, 2) has negligible impact on component reliability, 3) is not as significant as initially thought, 4) has no impact on failure frequency, 5) introduces additional stress on components such as DGs potentially causing increased component failures rates and component wearout, 6) results in reduced redundancy testing, and 7) increases likelihood of human error by increasing testing intervals. Therefore, the DG System staggered testing requirements have been deleted. This change is designated as less restrictive because the intervals between performances of the Surveillances for the two trains can be larger or smaller under the ITS than under the CTS.

L.5 *(Category 7 – Relaxation Of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.8.1.1.2.a.1 requires the verification of the fuel level in the day tank. The test Frequency for this Surveillance is in accordance with the frequency specified in Table 4.8-1 (the DG Test Schedule Table) on a STAGGERED TEST BASIS. ITS SR 3.8.1.4 requires verification that each day tank contains the required volume of fuel oil every 31 days. This changes the CTS by deleting the requirement to perform this Surveillance in accordance with the DG Test Schedule Table. The change to the STAGGERED TEST BASIS requirement is discussed in DOC L.4.

The purpose of CTS 4.8.1.1.2.a.1 is to ensure there is sufficient fuel oil in the day tank. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. The CTS test frequency has been changed by deleting the requirement to perform this Surveillance in accordance with the DG Test Schedule Table and includes a Frequency of 31 days. This change is acceptable because the DG failures that result in a more frequent DG test frequency have no impact on the day tank's ability to perform the intended function since the day tanks are normally maintained well above the minimum level. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.6 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* CTS 4.8.1.1.2.a.5 specifies that the DG must be loaded to 3500 kW during the 60 minute run test. CTS 4.8.1.1.2.e.3 specifies that the load rejection test must be performed by rejecting a load of 3500 kW. CTS 4.8.1.1.2.e.7 requires the diesel to be loaded to 3500 kW during the 8 hour run test. CTS 4.8.1.1.2.e.7

states that within 5 minutes after completing this 8 hour test to perform CTS 4.8.1.1.2.a.4, and footnote ** states that if CTS 4.8.1.1.2.a.4 is not satisfactorily completed, then it is not necessary to repeat the preceding 8 hour test. Instead, the DG may be operated at 3500 kW for 2 hours or until operating temperatures has stabilized. ITS SR 3.8.1.3, the 60 minute run test, specifies that each DG must be loaded to ≥ 3150 kW and ≤ 3500 kW. ITS SR 3.8.1.11, the full load rejection test, specifies the load rejection range for the test to be ≥ 3150 kW and ≤ 3500 kW. ITS SR 3.8.1.15, the 8 hour endurance run, specifies the load range to be ≥ 3150 kW and ≤ 3500 kW. ITS SR 3.8.1.16, the hot restart test, is modified by Note 1, which includes the details of CTS 4.8.1.1.2.e.7 footnote **, however the load has also been changed to ≥ 3150 kW and ≤ 3500 kW. This changes the CTS by allowing the DGs to be tested at a lower load during these Surveillances.

The purpose of CTS 4.8.1.1.2.a.5 is to ensure the DG can operate at the continuous rating. The purpose of CTS 4.8.1.1.2.e.3 is to ensure the DG operates properly during a full load rejection test. The purpose of CTS 4.8.1.1.2.e.7 is to ensure the DG can operate for an extended period at its continuous rating. The purpose of CTS 4.8.1.1.2.e.7 footnote ** is to ensure the DG hot restart test is performed with the DG at hot conditions. This change allows the DGs to be tested at a lower load during these Surveillances. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. The proposed minimum value is consistent with Regulatory Guide 1.9, Rev. 3 (paragraph C.2.2.2), which recommends a load range of 90% to 100% for the load-run test; Regulatory Guide 1.9, Rev. 3 (paragraph C.2.2.8), which recommends a load range of 90% to 100% for the full load rejection test; and Regulatory Guide 1.9, Rev. 3 (paragraph C.2.2.9), which recommends this same load range for most of the endurance run. The proposed values are 90% to 100% of the continuous load rating and therefore are considered to be consistent with the recommendations of Regulatory Guide 1.9, Rev. 3. The values will preclude routine overloading of the DG and the lower value will still ensure the DG is at operating temperatures and that the maximum loads assumed in the safety analyses can be supported. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.7 *(Category 7 – Relaxation Of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.8.1.1.2.b.1) requires the removal of accumulated water from the day tank at least once per 31 days and "after each occasion when the diesel is operated for greater than 1 hour." ITS SR 3.8.1.5, which requires the same Surveillance to be performed once per 31 days, does not include the conditional Frequency. This changes the CTS by deleting the requirement to test for accumulated water after each occasion when the DG is operated for greater than 1 hour.

The purpose of CTS 4.8.1.1.2.b.1) is to provide a degree of assurance that the day tank is free of accumulated water each time the associated DG is operated for more than 1 hour. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of

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equipment reliability. Water condensation within the fuel oil day tanks is a time dependent process, not a process dependent on the transfer of fuel oil during DG operation. Since it is the expectation that the DG will not be operated except for the nominal monthly OPERABILITY tests (based on experience), and that the fuel oil storage tanks are also periodically checked for water, no increased Frequency is necessary. This change is designated as less restrictive because the explicit requirement to remove accumulated water in the day tank after a DG run of greater than 1 hour has been deleted.

L.8 *(Category 12 – Deletion of Surveillance Requirement Shutdown Performance Requirements)* CTS 4.8.1.1.2.e contains a requirement to perform various test "during shutdown." These tests have been incorporated in ITS SR 3.8.1.10 through SR 3.8.1.15 and SR 3.8.1.17 through SR 3.8.1.20. ITS SR 3.8.1.10, SR 3.8.1.11, and SR 3.8.1.13 through SR 3.8.1.15 include a Note which state that the Surveillance shall not normally be performed in MODE 1 or 2. ITS SR 3.8.1.12 and SR 3.8.1.17 through SR 3.8.1.20 include a Note which state that the Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. The Notes also state that the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. This changes the CTS by deleting the requirement to perform the Surveillances during shutdown, and replacing the shutdown requirement with a Note stating when the Surveillances are not normally performed but allowing the test to be performed in these MODES as long as the associated assessment is performed.

The purpose of CTS 4.8.1.1.2.e is to confirm the OPERABILITY of the DGs. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. The proposed Surveillance does not include the restriction on unit conditions. The control of the unit conditions appropriate to perform the test is an issue for procedures and scheduling, and has been determined by the NRC Staff to be unnecessary as a Technical Specification restriction. As indicated in Generic Letter 91-04, allowing this control is consistent with the vast majority of other Technical Specification Surveillances that do not dictate unit conditions for the Surveillance. This change is designated as less restrictive because the Surveillance may be performed at plant conditions other than shutdown.

L.9 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.8.1.1.2.e.2 requires a verification that the DG is capable of rejecting a load ≥ 600 kW while maintaining a voltage of 4160 ± 420 V and frequency of 60 ± 1.2 Hz. ITS SR 3.8.1.10 requires verification that each DG rejects a load greater than or equal to its associated single largest post-accident load and following load rejection, frequency is ≤ 64.4 Hz, and after 2 seconds steady state voltage is ≥ 3910 V and ≤ 4400 V and frequency is ≥ 59.4 Hz and ≤ 61.2 Hz. This changes the CTS by allowing the transient frequency to exceed the limit for the first 2 seconds and deleting the voltage limits during the first 2 seconds of the transient. Other changes to the minimum frequency limit and the minimum and maximum voltage limits are discussed in DOC M.5.

The purpose of CTS 4.8.1.1.2.e.2 is to ensure the proper operation of the DG governor and load control circuits. This change is acceptable because it has

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been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. This changes the CTS by allowing the transient frequency and voltage to exceed the current limit, but provides a time limit for the stabilization of voltage and frequency. Consistent with Regulatory Guide 1.9, the load rejection test is acceptable if the diesel speed does not exceed 75% of the difference between nominal speed and the overspeed trip setpoint, or 15% above nominal speed, whichever is lower. This corresponds to 64.4 Hz, which is the nominal speed plus 75% of the difference between nominal speed and the overspeed trip setpoint. The time to reach steady state voltage is also consistent with the recommendation of Regulatory Guide 1.9 for response during load sequence intervals. The 2 seconds specified is equal to approximately 60% of the 3.49 second load sequence interval associated with sequencing of the largest load. This change is acceptable since the maximum frequency limitation is consistent with the limitation specified in CTS 4.8.1.1.2.e.3 for the full load rejection test and consistent with the recommendations of Regulatory Guide 1.9. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.10 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.8.1.1.2.e.3 requires a verification that the DG is capable of rejecting a load of 3500 kW without exceeding 75% of the difference between nominal speed and the overspeed trip setpoint. ITS SR 3.8.1.11 requires verification that each DG does not trip and voltage is maintained ≤ 5000 V during and following a load rejection of ≥ 3150 kW and ≤ 3500 kW. This changes the CTS by changing the DG full load rejection speed limitation acceptance criteria. The change to the load range is discussed in DOC L.6 and the addition of the voltage limit is discussed in DOC M.1.

The purpose of CTS 4.8.1.1.2.e.3 is to verify the proper operation of the DG governor and load control circuits. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. This changes the speed limitation acceptance criteria of the full load rejection test. This Surveillance ensures proper engine generator load response under the simulated test conditions. This test simulates the loss of the total connected load that the DG experiences following a full load rejection and verifies that the DG does not trip upon loss of the load. This acceptance criterion verifies that the DG is adequately protected from damage upon loss of load. While the DG is not expected to experience this transient during an event, and is expected to continue to be available, verifying this response ensures that the DG is not degraded for future application, including reconnection to the bus if the trip initiator can be corrected or isolated. The change is also acceptable since it is consistent with Regulatory Guide 1.9, Rev.3, paragraph C.2.2.8. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

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L.11 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.8.1.1.2.e.4 requires verification of DG performance following a "simulated" loss of offsite power. CTS 4.8.1.1.2.e.5 requires verification of DG performance following a Safety Injection actuation "test" signal. CTS 4.8.1.1.2.e.6 requires verification of DG performance following a "simulated" loss of offsite power in conjunction with a Safety Injection actuation "test" signal. CTS 4.8.1.1.2.e.10 requires verifying that with the DG operating in a test mode while connected to its test load, a "simulated" Safety Injection signal overrides the test mode by returning the DG to standby operation and ensuring the emergency loads remain powered by offsite power. ITS SR 3.8.1.12, SR 3.8.1.13, SR 3.8.1.14, SR 3.8.1.19, and SR 3.8.1.20 specify that the signal may be from either an "actual" or simulated (i.e., test) signal. This changes the CTS by explicitly allowing the use of either an actual or simulated signal for the test.

The purpose of CTS 4.8.1.1.2.e.4, CTS 4.8.1.1.2.e.5, CTS 4.8.1.1.2.e.6, and CTS 4.8.1.1.2.e.10 is to ensure that the AC Sources operate correctly upon receipt of an actuation signal. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. Equipment cannot discriminate between an "actual," "simulated," or "test" signal and, therefore, the results of the testing are unaffected by the type of signal used to initiate the test. This change allows taking credit for unplanned actuation if sufficient information is collected to satisfy the Surveillance test requirements. The change also allows a simulated signal to be used, if necessary. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.12 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* CTS 4.8.1.1.2.e.7 requires verification that the DG operates at a power factor of less than or equal to 0.86 for at least 8 hours. ITS SR 3.8.1.15 requires verification that each DG operates at a power factor of $\leq$ 0.86 for $\geq$ 8 hours, but a Note (ITS SR 3.8.1.15 Note 3) has been added which allows the power factor to be outside of the limit under certain conditions. The Note states that if performed with DG synchronized with offsite power, it shall be performed at a power factor $\leq$ 0.86. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable. This changes the CTS by allowing the 8 hours endurance run to be performed at a power factor outside of the CTS limit.

The purpose of CTS 4.8.1.1.2.e.7 is to test the DG at the continuous load for an extended period of time. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. This change allows the DG 8 hour endurance run to be performed at a power factor outside of the CTS limit. However, this is only permitted if the DG is not synchronized with offsite power, or if the DG is synchronized with offsite power but grid conditions do not permit. Under this second condition the power factor shall be maintained as close to the limit as practicable. This power factor is representative of the actual inductive loading a DG would see under design basis accident conditions. When grid voltage is

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high, additional field excitation may be needed to get the power factor to 0.86 which could lead to voltages on the emergency buses that are too high. Under these conditions, the power factor should be maintained as close as practicable to 0.86 while still maintaining acceptable voltage limits on the emergency buses. In other circumstances, the grid voltage may be such that the DG excitation levels needed to obtain a power factor of 0.86 may not cause unacceptable voltages on the emergency buses, but the excitation levels are in excess of those recommended for the DG. In such cases, the power factor shall be maintained close as practicable to 0.86 without exceeding the DG excitation limits. This change is acceptable since the DG will continue to be tested as close as practicable to design conditions. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.13 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.8.1.1.2.e.8 requires verification that the auto-connected loads to each DG do not exceed 3500 kW. ITS 3.8.1 does not require the verification of this loading limit to ensure OPERABILITY of the DGs. This changes the CTS by deleting the Surveillance Requirement.

This change is acceptable because the deleted Surveillance Requirement is not necessary to verify that the equipment used to meet the LCO can perform its required functions. Thus, appropriate equipment continues to be tested in a manner and at a frequency necessary to give confidence that the equipment can perform its assumed safety function. Each DG will continue to be tested in a manner to ensure the safety analyses assumption will be met. Changes to the auto-connected loads will be controlled and evaluated by the design change control process to ensure the DG is not overloaded. This change is designated as less restrictive because a Surveillance which is required in the CTS will not be required in the ITS.

L.14 *(Category 12 – Deletion of Surveillance Requirement Shutdown Performance Requirements)* CTS 4.8.1.1.2.f.3) contains a requirement to start both DGs simultaneously "during shutdown." ITS SR 3.8.1.22 removes the MODE restrictions for performing the required test. This changes the CTS by deleting the requirement to perform the Surveillance during shutdown.

The purpose of CTS 4.8.1.1.2.f.3) is to verify the interdependence of the DGs. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. The proposed Surveillance does not include the restriction on unit conditions. The Surveillance can be adequately tested in the operating conditions without jeopardizing safe plant operations, since the Surveillance does not require the DGs to be connected to their respective buses and only requires a start of the DGs. The control of the unit conditions appropriate to perform the test is an issue for procedures and scheduling, and has been determined by the NRC Staff to be unnecessary as a Technical Specification restriction. As indicated in Generic Letter 91-04, allowing this control is consistent with the vast majority of other Technical Specification Surveillances that do not dictate unit conditions for the Surveillance. This change is designated as less restrictive because the Surveillance may be performed at plant conditions other than shutdown.

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L.15 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* CTS 4.8.1.1.2.f.3) contains a requirement to start both DGs simultaneously and verifying that both DGs accelerate to at least 514 RPM in less than or equal to 10 seconds. ITS SR 3.8.1.22 requires verification when the DGs are started simultaneously that each DG achieves a frequency of greater than or equal to 58.8 Hz. This changes the CTS by decreasing the speed (i.e., frequency) requirement from 514 RPM (60 Hz) to 58.8 Hz.

The purpose of CTS 4.8.1.1.2.f.3) is to ensure the DGs retain their independence from one another. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. This change decreases the minimum frequency requirement for the DG during a simultaneous start. This change is acceptable because the value is consistent with the minimum frequency proposed in other Surveillances (e.g., ITS SR 3.8.1.8). This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.16 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.8.1.1.2.f.3) footnote * specifies that CTS 4.8.1.1.2.f.3) must be performed following any modification that could affect DG interdependence. ITS 3.8.1 does not include this testing requirement. This changes the CTS by deleting this testing requirement.

This change is acceptable because the deleted Surveillance Requirement is not necessary to verify that the equipment used to meet the LCO is consistent with the safety analyses. Thus, appropriate equipment continues to be tested in a manner and at a Frequency necessary to give confidence that the assumptions in the safety analyses are protected. Following repair, maintenance, modification, or replacement of a component that may affect OPERABILITY, post maintenance testing is required to demonstrate OPERABILITY of the system or component. This is described in the Bases of ITS SR 3.0.1 and required under SR 3.0.1. The OPERABILITY requirements of the DGs are described in the Bases for Specification 3.8.1. In addition, the requirements of 10 CFR 50, Appendix B, Section XI (Test Control) provide adequate controls for test programs to ensure that testing incorporates applicable acceptance criteria. Compliance with 10 CFR 50 is required under the unit's operating license. As a result, post maintenance testing will continue to be performed and an explicit requirement in the Technical Specifications is not necessary. This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

L.17 *(Category 3 – Relaxation of Completion Time)* CTS 3.0.5 allows a system, subsystem, train, component, or device to be considered OPERABLE with an inoperable emergency or normal power source provided its corresponding normal or emergency power source is OPERABLE and its redundant system(s), subsystem(s), train(s), component(s), and device(s) are OPERABLE. CTS 3.0.5 requires a unit shutdown to start within two hours with these requirements not met. CTS 3.0.5 also provides an explicit time period to be in HOT STANDBY

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(MODE 3), HOT SHUTDOWN (MODE 4), and COLD SHUTDOWN (MODE 5). ITS 3.8.1 ACTION A (one required offsite source inoperable) requires the declaration of required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable. The Completion Time allowed by the Required Action A.2 is 24 hours from discovery of no offsite power to one train concurrent with inoperability of redundant required feature(s). ITS 3.8.1 ACTION B (one required DG inoperable) requires the declaration of required feature(s) supported by the inoperable DG inoperable when its required redundant feature(s) is inoperable. The Completion Time allowed by the Required Action B.2 is 4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s). ITS 3.8.1 ACTION C (two required offsite circuits inoperable) requires the declaration of required feature(s) inoperable when its redundant required feature(s) is inoperable. The Completion Time allowed by the Required Action C.1 is 12 hours from discovery of Condition C concurrent with inoperability of redundant required features. This changes the CTS by allowing more time to restore inoperable equipment and replaces the explicit times to be in MODE 3, MODE 4, and MODE 5 with a requirement to declare the affected features inoperable (and thus to take the ACTIONS required by the individual system LCO, including possible shutdown of the unit).

This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the allowed Completion Time. This change allows more time to restore inoperable equipment when required AC Sources are inoperable concurrent with inoperabilities of redundant required features and deletes the explicit times to be in MODE 3, MODE 4, and MODE 5. By declaring the affected supported equipment inoperable, and as a result, taking the Technical Specifications ACTIONS of the affected supported equipment, unit operation is maintained within the bounds of the Technical Specifications and approved ACTIONS. Since the AC Sources support the OPERABILITY of the affected equipment, it is appropriate that the proper action, in this condition, would be to declare that affected supported equipment inoperable. CTS 3.0.5 is overly restrictive, in that if the associated supported equipment were inoperable for other reasons and the redundant equipment was also inoperable, a restoration time is sometimes provided, in other CTS sections. The 24 hour Completion Time when one required offsite circuit is inoperable is acceptable because: a) the redundant counterpart to the inoperable required feature is still OPERABLE although single failure protection may have been lost; b) the capacity and capability of the remaining AC Sources is still available; c) a reasonable time for repairs is provided for restoration before the unit is subjected to transients associated with shutdown; and d) the low probability of a DBA occurring during this period. The 12 hour Completion Time when two required offsite circuits are inoperable is acceptable because Regulatory Guide 1.93 allows a Completion Time of 24 hours for two required offsite circuits inoperable. When a concurrent redundant required function is inoperable, a shorter Completion Time of 12 hours is appropriate. The 4 hour Completion Time with one required DG inoperable takes into account the component OPERABILITY of the redundant counterpart to the inoperable required feature and is considered to

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be less of a risk than subjecting the unit to transients associated with shutdown. Additionally, the 4 hour Completion Time takes into account the capacity and capability of the remaining AC Sources, reasonable time for repairs, and low probability of a DBA occurring during this period. This change is designated as less restrictive because additional time is allowed to restore equipment to OPERABLE status and the change deletes the explicit times to reach MODE 3, MODE 4, and MODE 5.

L.18 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.8.1.1.2.a.4, the normal DG start test, and CTS 4.8.1.1.2.e.7, the DG hot restart test, each require a verification that the DG starts from standby conditions and achieves in less than or equal to 10 seconds, a voltage of 4160 $\pm$ 420 V and a frequency of 60 $\pm$ 1.2 Hz. ITS SR 3.8.1.8, the 184 day quick start test, and SR 3.8.1.16, the 24 month hot restart test, require the verification that each DG starts from standby conditions and achieves a voltage of $\geq$ 3740 V and frequency $\geq$ 58.8 Hz within 10 seconds and a steady state voltage of $\geq$ 3910 V and $\leq$ 4400 V and a steady state frequency of $\geq$ 59.4 Hz and $\leq$ 61.2 Hz. This changes the CTS by specifying a minimum voltage and frequency to be achieved within 10 seconds instead of requiring the voltage and frequency to be within range in 10 seconds. This effectively allows the upper steady state limits to be exceeded during DG acceleration and stabilization. The change to the actual frequency and voltage values is discussed in DOC M.5.

The purpose of the CTS 4.8.1.1.2.a.4 and CTS 4.8.1.1.2.e.7 is to test for the OPERABILITY of each DG during cold and hot conditions. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. This changes the CTS by specifying a minimum voltage and frequency limit to be achieved within 10 seconds instead of a voltage and frequency range. This effectively allows the upper voltage and frequency limits to be exceeded during DG acceleration and stabilization. As stated above, the proposed SRs will require only the establishment of the minimum frequency (58.8 Hz) and voltage (3740 V) within the given time frame. The accident analyses and other Surveillances require that the DGs be capable of being loaded within 10 seconds. This can be accomplished at 58.8 Hz and 3740 V. While the upper level requirement regarding the frequency and voltage acceptance criterion is being eliminated, the requirement to establish a steady state voltage and frequency has been retained. Changes to the steady state voltage and frequency ranges are discussed in DOC M.5. Thus, for steady state conditions, the proposed SRs will be more restrictive. Once steady state conditions are reached, the minimum and maximum voltage and frequency limits must be maintained. Therefore, the proposed requirements will require that the DG start and achieve in $\leq$ 10 seconds, voltage $\geq$ 3740 V and frequency $\geq$ 58.8 Hz; and steady state voltage $\geq$ 3910 V and $\leq$ 4400 V and frequency $\geq$ 59.4 Hz and $\leq$ 61.2 Hz. The tests in question are those that automatically start the DG but do not connect it to a bus. Verification that the minimum voltage and frequency limits are met within the proper time is sufficient to ensure the DG can perform its design function. When called upon, the DG must start and accept load within the proper time. Once the minimum voltage and frequency limits are met, the DG can connect to the bus. When a test is performed that does not result in connecting the DG to the bus, a voltage or frequency overshoot can occur since no loads are connected (the loading tends to minimize overshoot). This overshoot could be such that the voltage or frequency is outside the band high when the time limit expires. However, this condition is not indicative of an inoperable DG, provided that steady state voltage and frequency are maintained. The DG start times are monitored and trend evaluated to identify degradation of DG governor and voltage regulator performance as described in the Bases. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.19 *(Category 7 – Relaxation Of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.8.1.1.2.a.3 requires that the fuel transfer pump can be started and that it transfers fuel from the storage system to the day tank. The test Frequency for these Surveillance is in accordance with the frequency specified in Table 4.8-1 (the DG Test Schedule Table) on a STAGGERED TEST BASIS. The nominal test Frequency in CTS Table 4.8-1 is 31 days. ITS SR 3.8.1.7 requires the verification that the fuel oil transfer system operates to automatically transfer fuel oil from the storage tank to the day tank every 92 days. This changes the CTS by deleting the requirement to perform this Surveillance in accordance with the DG Test Schedule Table, and changes the nominal test Frequency to 92 days. The change to the STAGGERED TEST BASIS requirement is discussed in DOC L.4.

The purpose of CTS 4.8.1.1.2.a.3 is to ensure the fuel oil transfer system can function properly. A detailed review of the test history for the fuel oil transfer pumps indicates no failures during any demand cycles. The IST program requires operation of the transfer pumps only on a quarterly basis and degradation has not been indicated for these pumps. The change concerning the deletion of more frequent testing than the nominal 31 day test Frequency is acceptable because the DG failures that result in a more frequent DG test Frequency have no impact on the ability of the fuel oil transfer pumps to perform their intended function. In addition, the proposed 92 day fuel oil transfer pump test Frequency is consistent with the requirements of ASME Operation and Maintenance Standards and Guides (OM Codes) for similar pumps. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.20 Not Used.

L.21 CTS 3.8.1.1 Action b specifies the compensatory actions for one inoperable DG and CTS 3.8.1.1 Action c specifies the compensatory actions for one inoperable offsite circuit and one inoperable DG. The Actions include a requirement to demonstrate the OPERABILITY of the remaining OPERABLE DG by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours, unless the absence of any potential common mode failure for the remaining DG is demonstrated. ITS 3.8.1 Required Actions B.3.1 and B.3.2 allows 24 hours to perform similar checks on the remaining OPERABLE DGs. This changes the CTS by extending the time to perform these checks from 8 hours to 24 hours.

The purpose of the above specified CTS Actions is to ensure that the other unit DG is not inoperable as a result of a similar, yet undetected, failure (i.e., due to a

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common mode failure). Currently, the 8 hour time limit specified is sufficient to actually perform CTS 4.8.1.1.2.a.4, a normal DG start test, on the other unit DG. However, due to the addition of the opposite unit DG requirements discussed in DOC M.2, there is a possibility that ITS 3.8.1 ACTION B will be entered due to an opposite unit DG inoperability. This could result in ITS 3.8.1 Required Action B.3.2 being required on two unit DGs. That is, the DG start test could have to be performed on two DGs. Based on Operations Department experience, it would be difficult to perform a DG start test on two DGs within the current 8 hour time limit, considering the time it normally takes to perform the test on a single DG, as well as to perform pre-evolution briefs for the operating crew and to safely transition between the DG tests. The proposed 24 hour time limit is considered a reasonable time to complete the DG start tests on two DGs. Generic Letter 84-15 identified that a 24 hour time limit was acceptable to perform these common mode failure checks. In addition, the change is considered acceptable since the vast majority of DG start tests demonstrate that the DG is in fact OPERABLE.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

CTS

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources - Operating

LCO 3.8.1 The following AC electrical sources shall be OPERABLE:

LCO 3.8.1.1

a. Two qualified circuits between the offsite transmission network and the onsite Class 1E AC Electrical Power Distribution System ~~,~~ ; (1)

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

[c. Automatic load sequencers for Train A and Train B.] (2)

INSERT 1 (3)

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

INSERT 2 (3)

ACTIONS INSERT 2AA TSTF-359

INSERT 2A (15)

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
	AND		
	A.2	Declare required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable.	24 hours from discovery of no offsite power to one train concurrent with inoperability of redundant required feature(s)
	AND		

Action a, Action c

LCO 3.0.5

(4)

3.8.1

3

INSERT 1

DOC A.2

c. One Unit 2 (Unit 1) and Unit 1 (Unit 2) qualified circuit between the offsite transmission network and the Unit 2 (Unit 1) and Unit 1 (Unit 2) onsite Class 1E AC Electrical Power Distribution System capable of supporting the associated equipment required to be OPERABLE by LCO 3.7.8, "Essential Service Water (ESW) System;" and

DOC A.2

d. The Unit 2 (Unit 1) and Unit 1 (Unit 2) DG(s) capable of supporting the associated equipment required to be OPERABLE by LCO 3.7.8.

3

INSERT 2

-NOTE-

DOC M.2

The Unit 2 (Unit 1) and Unit 1 (Unit 2) AC electrical power sources in LCO 3.8.1.c and LCO 3.8.1.d are not required to be OPERABLE when the associated required equipment is inoperable.

TSTF-359

INSERT 2AA

-NOTE-

Action f

LCO 3.0.4.b is not applicable to DGs.

15

INSERT 2A

-NOTE-

Not applicable if a required Unit 2 (Unit 1) and Unit 1 (Unit 2) offsite circuit is inoperable.

CTS

ACTIONS (continued)

	CONDITION	REQUIRED ACTION		COMPLETION TIME	
Action a		A.3	Restore [required] offsite circuit to OPERABLE status.	72 hours AND 6 days from discovery of failure to meet LCO 3.8.1.a or b	4 3
Action b, Action c, Action e	B. One [required] DG inoperable.	B.1	Perform SR 3.8.1.1 for the [required] offsite circuit(s).	1 hour AND Once per 8 hours thereafter	4 INSERT 2B 15
		AND			
LCO 3.0.5		B.2	Declare required feature(s) supported by the inoperable DG inoperable when its required redundant feature(s) is inoperable.	4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)	
		AND			
		B.3.1	Determine OPERABLE DG(s) is not inoperable due to common cause failure.	[24] hours	4
		OR			
		B.3.2	Perform SR 3.8.1.2 for OPERABLE DG(s).	[24] hours	4
		AND			

15

INSERT 2B

-NOTE-

Not applicable if a required Unit 2 (Unit 1) and Unit 1 (Unit 2) DG is inoperable.

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CTS

ACTIONS (continued)

CTS	CONDITION	REQUIRED ACTION		COMPLETION TIME	
Action b		B.4	Restore [required] DG to OPERABLE status.	72 hours AND 6 days from discovery of failure to meet LCO 3.8.1.a or b	4 3
Action d, LCO 3.0.5	C. Two [required] offsite circuits inoperable.	C.1	Declare required feature(s) inoperable when its redundant required feature(s) is inoperable.	12 hours from discovery of Condition C concurrent with inoperability of redundant required features	4
		AND			
		C.2	Restore one [required] offsite circuit to OPERABLE status.	24 hours	4
Action c	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.		4 4
		D.1	Restore [required] offsite circuit to OPERABLE status.	12 hours	4
		OR			
		D.2	Restore [required] DG to OPERABLE status.	12 hours	4

CTS

ACTIONS (continued)

	CONDITION	REQUIRED ACTION		COMPLETION TIME	
Action e	E. Two [required] DGs inoperable.	E.1	Restore one [required] DG to OPERABLE status.	2 hours	4
	- REVIEWER'S NOTE - This Condition may 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 following a loss of offsite power independent of, or coincident with, a Design Basis Event. F. [One [required] [automatic load sequencer] inoperable.	F.1	Restore [required] [automatic load sequencer] to OPERABLE status.	[12] hours]	2 11
Actions a, b, c, d, e	F G. Required Action and associated Completion Time of Condition A, B, C, D, E, or F not met.	F G.1	Be in MODE 3.	6 hours	2
		AND			2
		F G.2	Be in MODE 5.	36 hours	2
DOC A.4	G H. Three or more [required] AC sources inoperable.	G H.1	Enter LCO 3.0.3.	Immediately	2 4

INSERT 3 3

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
4.8.1.1.a	SR 3.8.1.1	Verify correct breaker alignment and indicated power availability for each [required] offsite circuit.	7 days	4

3 **INSERT 3**

-NOTES-

DOC M.11 1. SR 3.8.1.1 through SR 3.8.1.22 are applicable only to the AC electrical power sources for Unit 1 (Unit 1) and Unit 2 (Unit 2).

DOC M.11 2. SR 3.8.1.23 is applicable only to the Unit 2 (Unit 1) and Unit 1 (Unit 2) required AC electrical power sources. The Surveillances referenced in SR 3.8.1.23 are the Unit 2 (Unit 1) and Unit 1 (Unit 2) Surveillance Requirements.

CTS

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.8.1.2	- NOTES - 1. All DG starts may be preceded by an engine prelube period and followed by a warmup period prior to loading. 2. A modified DG start involving idling and gradual acceleration to synchronous speed may be used for this SR as recommended by the manufacturer. When modified start procedures are not used, the time, voltage, and frequency tolerances of SR 3.8.1.7 must be met. Verify each DG starts from standby conditions and achieves steady state voltage ≥ 3740 V and ≤ 4580 V, and frequency ≥ 58.8 Hz and ≤ 61.2 Hz. (5) (8) 4400 3710 59.4	31 days
SR 3.8.1.3	- NOTES - 1. DG loadings may include gradual loading as recommended by the manufacturer. 2. Momentary transients outside the load range do not invalidate this test. 3. This Surveillance shall be conducted on only one DG at a time. 4. This SR shall be preceded by and immediately follow without shutdown a successful performance of SR 3.8.1.2 or SR 3.8.1.7. (8) Verify each DG is synchronized and loaded and operates for ≥ 60 minutes at a load ≥ 4500 kW and ≤ 5000 kW. 3150 3500	31 days
SR 3.8.1.4	Verify each day tank and engine mounted tank contains ≥ 220 gal of fuel oil. 101.4	31 days
SR 3.8.1.5	Check for and remove accumulated water from each day tank and engine mounted tank.	[31] days

4.8.1.1.2.a.4, including footnote *

4.8.1.1.2.a.5, including footnote **

LCO 3.8.1.1.b.1, 4.8.1.1.2.a.1

4.8.1.1.2.b.1

(4) (6) (4) (6) (4) (4) (4)

CTS

SURVEILLANCE REQUIREMENTS (continued)

CTS	SURVEILLANCE		FREQUENCY	
4.8.1.1.2.a.3	SR 3.8.1.6 7	Verify ~~the~~ each fuel oil transfer system operates to ~~[automatically]~~ transfer fuel oil from storage tank[s] to the day tank ~~[and engine mounted tank]~~ the	~~[92]~~ days INSERT 4	6 6 5 4 4
4.8.1.1.2.a.4, including footnote *	SR 3.8.1.7 8	- NOTE - All DG starts may be preceded by an engine prelube period.		6
		Verify each DG starts from standby condition and achieves:	184 days	
		a. In ≤ [10] seconds, voltage ≥ [3740] V and frequency ≥ [58.8] Hz and 1		4 1
		b. Steady state voltage ≥ ~~[3740]~~ 3910 V and ≤ ~~[4880]~~ 4400 V, and frequency ≥ ~~[58.8]~~ 59.4 Hz and ≤ [61.2] Hz.		4
4.8.1.1.b	SR 3.8.1.8 9	~~- NOTE - [This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced.~~ INSERT 5		6 12 7
12	: a)	Verify [automatic ~~and~~ manual] transfer ~~of AC power sources~~ from the ~~normal offsite circuit~~ auxiliary source to ~~each alternate~~ the preferred ~~[required]~~ offsite circuit INSERT 6	~~[18]~~ 24 months[]	4 5 12 5

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6

INSERT 4

DOC M.6	SR 3.8.1.6	Verify each required DG air start receiver pressure is $\geq$ 190 psig.	31 days

12

INSERT 5

-NOTE-

SR 3.8.1.9.a is only required to be met when the auxiliary source is supplying the electrical power distribution subsystem.

12

INSERT 6

; and

b. Manual alignment to the alternate offsite circuit

CTS

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
4.8.1.1.2.e.2 SR 3.8.1.9 (10)	- NOTES - 1. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant (unit) is maintained or enhanced. INSERT 7 2. If performed with the DG synchronized with offsite power, it shall be performed at a power factor ≤ 0.9 (0.86). However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable. Verify each DG rejects a load greater than or equal to its associated single largest post-accident load, and: a. Following load rejection, the frequency is ≤ 63 (64.4) Hz, b. Within 3 (2) seconds following load rejection, the voltage is ≥ 3740 (3910) V and ≤ 4580 (4400) V, and c. Within 6 (2) seconds following load rejection, the frequency is ≥ 58.8 (59.4) Hz and ≤ 61.2 Hz.	18 (24) months

(6) (4) (5) (13) (4) (4) (4) (1) (4) (1) (4) (4)

13

INSERT 7

Credit may be taken for unplanned events that satisfy this SR.

CTS

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
4.8.1.1.2.e.3 SR 3.8.1.11	- NOTES - 1. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant unit is maintained or enhanced. 2. If performed with DG synchronized with offsite power, it shall be performed at a power factor ≤ 0.9 0.86. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable.	6 4 5 INSERT 8 13 4 4
	Verify each DG does not trip and voltage is maintained ≤ 5000 V during and following a load rejection of ≥ 4500 3150 kW and ≤ 5000 3500 kW.	18 24 months 4

13

INSERT 8

Credit may be taken for unplanned events that satisfy this SR.

CTS

4.8.1.1.2.e.4

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.11 12	- NOTES - 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant unit is maintained or enhanced. INSERT 9	6 5 13
	Verify on an actual or simulated loss of offsite power signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; c. DG auto-starts from standby condition and: 1. Energizes permanently connected loads in ≤ [10] seconds, 2. Energizes auto-connected shutdown loads through [automatic load sequencer], time delay relays, where applicable 3. Maintains steady state voltage ≥ [3740] 3910 V and ≤ [4580] 4400 V, 4. Maintains steady state frequency ≥ [58.8] 59.4 Hz and ≤ [61.2] Hz, and 5. Supplies permanently connected [and auto-connected] shutdown loads for ≥ 5 minutes.	[18] 24 months 4 1 1 4 1 2 1 1 4 1 4 4

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13

INSERT 9

Credit may be taken for unplanned events that satisfy this SR.

CTS

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
4.8.1.1.2.e.5 SR 3.8.1.1 (13)	- NOTES - (6) 1. All DG starts may be preceded by an engine (11) prelube period. (4) 2. This Surveillance shall not normally be performed in MODE 1 or 2. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the ~~plant~~ unit (5) is maintained or enhanced. Verify on an actual or simulated Engineered Safety Feature (ESF) actuation signal each DG auto-starts from standby condition and: a. In ≤ 10 seconds ~~after auto-start and during tests~~ (14), achieves voltage ≥ 3740 V and frequency ≥ 58.8 Hz; (1) (4) b. Achieves steady state voltage ≥ ~~3740~~ 3910 V and ≤ ~~4580~~ 4400 V and frequency ≥ ~~58.8~~ 59.4 Hz and ≤ 61.2 Hz; (1) (4) c. Operates for ≥ 5 minutes; (3) (1) d. Permanently connected loads remain energized from the offsite power system; and (3) (1) e. Emergency loads are ~~energized [or]~~ auto-connected through the ~~automatic load sequencer~~ time delay relays, where applicable from the offsite power system. (2)	INSERT 10 (13) ~~18~~ 24 months (4)

13

INSERT 10

Credit may be taken for unplanned events that satisfy this SR.

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CTS

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
4.8.1.1.2.e.6.c) SR 3.8.1.13 14	- NOTE - This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant unit is maintained or enhanced. INSERT 11	6 5 4 13
	Verify each DG's automatic trips are bypassed on an actual or simulated loss of voltage signal on the emergency bus concurrent with or an actual or simulated ESF actuation signal except: a. Engine overspeed, and b. Generator differential current,. [c. Low lube oil pressure, d. High crankcase pressure, and e. Start failure relay.]	24 18 months 4 5 4 1 4 4

13 **INSERT 11**

Credit may be taken for unplanned events that satisfy this SR.

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CTS

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
4.8.1.1.2.e.7 SR 3.8.1.14 15	- NOTES - 1. Momentary transients outside the load and power factor ranges do not invalidate this test. 2. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the ~~plant~~ unit is maintained or enhanced. INSERT 12 3. If performed with DG synchronized with offsite power, it shall be performed at a power factor ≤ [0.9] 0.86. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable. --- Verify each DG ~~operating at a power factor ≤ [0.9]~~ operates for ≥ 24 hours: a. ~~For ≥ [2] hours~~ loaded ≥ ~~[5250]~~ 3150 kW and ≤ ~~[5800]~~ 3500 kW ~~and~~ at a ~~b. For the remaining hours of the test loaded ≥ [4500] kW and ≤ [5000] kW.~~	~~[18]~~ 24 months

6 5 13 4 10 4 8 8

13 **INSERT 12**

Credit may be taken for unplanned events that satisfy this SR.

CTS

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY	
4.8.1.1.2.a.4, 4.8.1.1.2.e.7	SR 3.8.1.16 16 - NOTES - 1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated ≥ [2] hours loaded ≥ [4500] kW and ≤ [5000] kW. 3500 Momentary transients outside of load range do not invalidate this test. 2. All DG starts may be preceded by an engine prelube period. Verify each DG starts and achieves: a. In ≤ [10] seconds, voltage ≥ [3740] V and frequency ≥ [58.8] Hz and ; b. Steady state voltage ≥ [3740] V 3910 and ≤ [4580] V 4400 and frequency ≥ [58.8] 59.4 Hz and ≤ [61.2] Hz.	3150 24 [18] months	6 4 4 1 4 11 4
4.8.1.1.2.e.9	SR 3.8.1.16 17 - NOTE - This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the 5 unit plant is maintained or enhanced. Verify each DG: 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.	INSERT 13 24 [18] months	6 13 4 1 1

13 **INSERT 13**

Credit may be taken for unplanned events that satisfy this SR.

CTS

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
DOC M.12 SR 3.8.1.17 21	----- - NOTE - ----- This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. ----- Verify, with a DG operating in test mode and connected to its bus, an actual or simulated ESF actuation signal overrides the test mode by: a. Returning DG to ready-to-load operation; and 1 b. [Automatically energizing the emergency load from offsite power].	INSERT 14 13 [18] months 24 4 INSERT 14A 4
4.8.1.1.2.e.11 SR 3.8.1.18	----- - NOTE - ----- This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the ~~plant~~ unit 5 is maintained or enhanced. ----- INSERT 14 13 Verify interval between each sequenced load block is within ± [10]% of design interval 5 for each emergency ~~and shutdown~~ ~~load sequencer~~ time delay relay.	[18] months 24 4 4 4 2 Move to after SR 3.8.1.19 on page 3.8.1-15 17

13

INSERT 14

Credit may be taken for unplanned events that satisfy this SR.

16

INSERT 14A

Verifying the emergency loads are serviced by

CTS

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.19	- NOTES - 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. 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, 2. Energizes auto-connected emergency loads through load sequencer, 3. Achieves steady state voltage ≥ [3740] V and ≤ [4580] V, 4. Achieves steady state frequency ≥ [58.8] Hz and ≤ [61.2] Hz, and 5. Supplies permanently connected [and auto-connected] emergency loads for ≥ 5 minutes.	[18] months

4.8.1.1.2.e.6

unit 5

INSERT 15 13

24

4

1

1

1 4

time delay relays, as applicable

1 2

3910

4400

1 4

59.4

1 4

4

INSERT 15A 16

Move SR 3.8.1.21 here from page 3.8.1-14 17

CTS

13 **INSERT 15**

Credit may be taken for unplanned events that satisfy this SR.

16 **INSERT 15A**

4.8.1.1.2.e.10	SR 3.8.1.20	-NOTE- 1. This SR is only required to be met when the applicable DG is connected to its load test resistor bank. 2. This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. Verify, with a DG operating in test mode and connected to its load test resistor bank, an actual or simulated ESF actuation signal overrides the test mode by: a. Returning DG to ready-to-load operation; and b. Verifying the emergency loads are serviced by offsite power.	24 months

CTS

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
4.8.1.1.2.f.3)	SR 3.8.1.~~20~~ 22 16 - NOTE - All DG starts may be preceded by an engine prelube period. Verify when started simultaneously from standby condition, each DG achieves~~:~~, ~~a.~~ in ≤ [10] seconds, voltage ≥ [3740] V and frequency ≥ [58.8] Hz~~and~~ . ~~b. Steady state voltage ≥ [3744] V and ≤ [4576] V, and frequency ≥ [58.8] Hz and ≤ [61.2] Hz.~~	10 years

4 9

INSERT 16 3

3

INSERT 16

SR 3.8.1.23	-NOTES- 1. When Unit 2 (Unit 1) and Unit 1 (Unit 2) is in MODE 5 or 6, or moving irradiated fuel assemblies in the containment or auxiliary building, the following Unit 2 (Unit 1) and Unit 1 (Unit 2) SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.10, SR 3.8.1.11, SR 3.8.1.12, SR 3.8.1.15, SR 3.8.1.16, SR 3.8.1.17, and SR 3.8.1.18. 2. Unit 2 (Unit 1) and Unit 1 (Unit 2) SR 3.8.1.9.a is only required to be met when the auxiliary source is supplying the required Unit 2 (Unit 1) and Unit 1 (Unit 2) electrical power distribution subsystem. For required Unit 2 (Unit 1) and Unit 1 (Unit 2) AC sources, the SRs of Unit 2 (Unit 1) and Unit 1 (Unit 2) Specification 3.8.1, except SR 3.8.1.9.b, SR 3.8.1.13, SR 3.8.1.14 (ESF actuation signal portion only), SR 3.8.1.19, SR 3.8.1.20, SR 3.8.1.21, and SR 3.8.1.22, are applicable.	In accordance with applicable SRs

DOC M.11

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.1, AC SOURCES - OPERATING

1. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

2. ISTS LCO 3.8.1.c and ISTS 3.8.1 ACTION F have been deleted since CNP Units 1 and 2 do not use load sequencers. Each load or load block is sequenced with the use of its associated time delay relay. Subsequent Conditions and Required Actions have been renumbered, as applicable. ITS SR 3.8.1.12, SR 3.8.1.13, SR 3.8.1.18, and SR 3.8.1.19 have been revised to reflect the use of time delay relays.

3. Additional requirements were added to ISTS LCO 3.8.1 to ensure the appropriate AC Sources are OPERABLE during unit operation in MODES 1, 2, 3 and 4 to satisfy the design requirements. The new requirements were added as ITS LCO 3.8.1.c and LCO 3.8.1.d. This modification was necessary due to a shared system (Essential Service Water) between both units. A Note has been added to the Applicability that allows the opposite unit AC electrical power sources not to be required when the associated equipment is inoperable. This is an exception that is intended to allow declaring the opposite unit equipment inoperable in lieu of declaring the opposite unit power source inoperable. This exception also allows the supported equipment to be declared inoperable at any time subsequent to entering ACTIONS for an inoperable opposite unit power source. This exception is acceptable since, with the opposite unit equipment inoperable and the associated ACTIONS entered, the opposite unit AC Sources provide no additional assurance of meeting the safety criteria of the given unit's AC Sources.

   Two Notes have been added to the Surveillance Requirements Table and an additional Surveillance (ITS SR 3.8.1.23) has been added to clearly define the Applicability of the Surveillances for both units and to ensure the opposite unit's power sources are OPERABLE.

   In addition, the Completion Times for multiple AC Sources inoperable (Required Actions A.3 and B.4) have been revised to not reflect these additional LCO requirements since the equipment supported by the opposite unit AC power sources may be declared inoperable in lieu of declaring the power sources inoperable.

4. The brackets are removed and the proper plant specific information/value is provided.

5. Changes are made (additions, deletions, and/or changes) to the ISTS, which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

6. ITS SR 3.8.1.6 has been added to verify each required DG air start receiver pressure is within the specified limit. This pressure will ensure one automatic start of each required DG. This change is consistent with the current licensing basis to have OPERABLE DG(s). The requirements of the air start receiver pressure in ISTS 3.8.3 has not been added since only one air start receiver is required to be OPERABLE per required DG. CNP Units 1 and 2 are not licensed for the five DG starts as required by ISTS 3.8.3. Subsequent SRs have been renumbered, as applicable.

7. ISTS SR 3.8.1.8 Note (ITS SR 3.8.1.9 Note), which states that this Surveillance shall not normally be performed in MODE 1 or 2, has been deleted. This test is currently

allowed to be performed at any time. The Note has not been added since the Surveillance test procedure currently allows the test to be performed during a shutdown of the unit from power operation (i.e., MODE 1) by tripping the main turbine and verifying the transfer to the preferred offsite circuit.

8. The DG endurance run time of ≥ 24 hours has been changed to ≥ 8 hours consistent with the current licensing basis as approved in License Amendment 207 (Unit 1) and 191 (Unit 2). The test is limited to the continuous rating consistent with the current licensing basis as approved in Licensing Amendment 125 (Unit 1) and 112 (Unit 2). The load range specified has been changed to values consistent with Regulatory Guide 1.9, Rev. 3, paragraph C.2.2.9 (90% to 100% of the continuous rating). The allowance to test the DG within the prescribed range is discussed in the Discussion of Changes for ITS 3.8.1.

9. The steady state limit does not apply to the simultaneous start of all DGs (ISTS SR 3.8.1.20), since it is a test of starting independence, not operating independence. This is consistent with the current licensing basis.

10. TSTF-276, Rev.2 was approved by the NRC on April 14, 2000. However, when NUREG-1431, Rev. 2 was issued, this TSTF was not completely included. Therefore, changes approved by TSTF-276, Rev. 2 have been made.

11. Editorial/grammatical error corrected.

12. ISTS SR 3.8.1.8 (ITS SR 3.8.1.9) has been revised to include two parts consisting of: a) a transfer from the auxiliary source (i.e., main generator) to the preferred offsite circuit; and b) a manual alignment to the alternate offsite circuit. These changes were made consistent with the current licensing basis. However, a Note has also been added to ISTS SR 3.8.1.8 (ITS SR 3.8.1.9) that states SR 3.8.1.9.a is only required to be met when the auxiliary source is supplying the electrical power distribution subsystem. This change is necessary since the automatic transfer from the auxiliary source to the preferred offsite circuit is not necessary when the preferred offsite circuit is supplying onsite power. In this situation the preferred offsite circuit is performing its function by supplying the onsite power.

13. TSTF-283, Rev. 3 was approved by the NRC on April 13, 2000. However, when NUREG-1431, Rev. 2 was issued, this TSTF was not completely included. Therefore, changes approved by TSTF-283, Rev. 3 have been made.

14. ISTS SR 3.8.1.12 part a has been modified by deleting the words "after auto-start and during tests" for consistency with similar words in ISTS SR 3.8.1.7 and SR 3.8.1.15. In addition, the words "auto-start" are redundant to the words in the first part of ISTS SR 3.8.1.12, and the words "and during tests" is not correct; the voltage and frequency limits of part b are different than those in part a of the SR.

15. ISTS 3.8.1 Required Actions A.1 and B.1 have been modified by the addition of Notes. The Note for Required Action A.1 states that the Required Action is not applicable if a require opposite unit offsite circuit is inoperable and the Note for Required Action B.1 states that the Required Action is not applicable if a required opposite unit DG is inoperable. With an opposite unit offsite circuit or DG

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.1, AC SOURCES - OPERATING

inoperable, there is no reason to check the given unit's offsite circuits, since neither they nor the unit DGs are in operable and the inoperable opposite unit offsite circuit and DG only affect the Essential Service Water System. This is also consistent with current licensing basis, since the CTS does not require an offsite circuit check when a required opposite unit offsite circuit or DG is inoperable.

16. CTS 4.8.1.1.2.e.10 requires verifying that with the DG operating in a test mode while connected to its test load, a simulated Safety Injection (SI) signal overrides the test mode by returning the DG to standby operation and ensuring the emergency loads remain powered by offsite power. The purpose of CTS 4.8.1.1.2.e.10 is to verify the design of the DG logic when the DG is connected to the test bank. The CNP design includes the capability of paralleling the DG with a test bank instead of actually paralleling the DG with offsite power (i.e., via the emergency buses). Therefore, ITS SR 3.8.1.20 has been added consistent with the current design and licensing basis. However, under normal conditions, the DGs are not connected to their associated test banks. Therefore, if the design feature is not functioning properly, the associated DG is only required to declared inoperable if it is actually connected to its associated test bank. Thus, Note 1, which states that the Surveillance is only required to be met when the DG is connected to its test resistor bank, has been added to clarify this current allowance. Furthermore, since this Surveillance was added into the ITS during the later stages of the NRC review, it has been added after the last of the Surveillances that is performed on a 24 month Frequency, and the remaining SRs has been renumbered as applicable.

17. ISTS SR 3.8.1.17 has been modified by an addition to the Note that states credit may be taken for unplanned events that satisfy this SR. This change will allow for the SR to be satisfied should an unplanned event occur. Furthermore, since this Surveillance was added into the ITS during the later stages of the NRC review, it has been added after the last of the Surveillances that is performed on a 24 month Frequency, and the remaining SR has been renumbered.

Improved Standard Technical Specifications (ISTS) Bases Markup and Justification for Deviations (JFDs)

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 offsite power sources (preferred power sources, normal and alternate(s)), and the onsite standby power sources (Train A and Train B diesel generators (DGs)). As required by 10 CFR 50, Appendix A, GDC 17 (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.) 1

The onsite Class 1E AC Distribution System is divided into redundant load groups (trains) so that the loss of any one group does not prevent the minimum safety functions from being performed. Each train has connections to two preferred offsite power sources and a single DG. INSERT 1 — 1 INSERT 2 — 1 a

Offsite power is supplied to the unit switchyard(s) from the transmission network by [two] transmission lines. From the switchyard(s), two electrically and physically separated circuits provide AC power, through [step down station auxiliary transformers], to the 4.16 kV ESF buses. A detailed description of the offsite power network and the circuits to the Class 1E ESF buses is found in the FSAR, Chapter [8] (Ref. 2). INSERT 3 1 1 2 emergency U Section 8.3 1

qualified An offsite circuit consists of all breakers, transformers, switches, interrupting devices, cabling, and controls required to transmit power from the offsite transmission network to the onsite Class 1E ESF bus(es). INSERT 3A 1 1 1 emergency

approximately 40 seconds

Certain required unit loads are returned to service in a predetermined sequence in order to prevent overloading the transformer supplying offsite power to the onsite Class 1E Distribution System. Within [1 minute] after the initiating signal is received, all automatic and permanently connected loads needed to recover the unit or maintain it in a safe condition are returned to service via the load sequencer. INSERT 4 2 1 1

Unit 1 only 1-CD is emergency train 1 2

The onsite standby power source for each 4.16 kV ESF bus is a dedicated DG. DGs [11] and [12] are dedicated to ESF buses [11] T11C and T11D and [12], respectively. A DG starts automatically on a safety injection (SI) signal (i.e., low pressurizer pressure or high containment pressure signals) or on an [ESF bus degraded voltage or undervoltage signal] (refer to LCO 3.3.5, "Loss of Power (LOP) Diesel Generator (DG) Start Instrumentation"). After the DG has started, it will automatically tie to its respective bus after offsite power is tripped as a consequence of ESF bus undervoltage or degraded voltage, independent of or coincident with 1 INSERT 5 INSERT 5A 1 1 2 1 INSERT 5B es emergency 1

-Low, Loss of Voltage

1

INSERT 1

, an alternate offsite power source, an auxiliary source (main generator),

Unit 2 only

1

INSERT 2

Additionally, the AC electrical sources must include those electrical sources from Unit 2 (Unit 1) and Unit 1 (Unit 2) that are required to support the Essential Service Water (ESW) System since the ESW headers are common to both units. In addition, the AC electrical sources must include those AC electrical sources from Unit 1 during fuel handling operations in the auxiliary building since the Fuel Handling Area Exhaust Ventilation (FHAEV) System loads are supplied by Unit 1. The onsite Class 1E AC Distribution System associated with the other unit is also divided into redundant load groups and include the same connections to AC sources.

1

INSERT 3
(Unit 1 only)

The onsite Class 1E AC Distribution System includes Train A and Train B. Train A and Train B are normally powered from the main generator. The main generator supplies Train A via unit auxiliary transformer TR1CD and supplies Train B via unit auxiliary transformer TR1AB. The unit auxiliary transformer TR1CD supplies bus 1C, which in turn supplies the onsite Class 1E 4.16 kV emergency bus T11C, a Train A bus. The unit auxiliary transformer TR1CD also supplies bus 1D, which in turn supplies the onsite Class 1E 4.16 kV emergency bus T11D, also a Train A bus. The unit auxiliary transformer TR1AB supplies bus 1A, which in turn supplies the onsite Class 1E 4.16 kV emergency bus T11A, a Train B bus. The unit auxiliary transformer TR1AB also supplies bus 1B, which in turn supplies the onsite Class 1E 4.16 kV emergency bus T11B, also a Train B bus. The preferred qualified offsite circuit is supplied via reserve auxiliary transformers (RAT) TR101CD and TR101AB. The Train A and Train B 4.16 kV emergency buses will automatically transfer to the preferred qualified offsite circuit as a result of a turbine generator trip. Each RAT is supplied by a separate 34.5 kV line from an onsite switchyard. RAT TR101CD supplies the Train A 4.16 kV emergency bus T11C via bus 1C while emergency bus T11D is supplied via bus 1D. RAT TR101AB supplies the Train B 4.16 kV emergency bus T11A via bus 1A while emergency bus T11B is supplied via bus 1B. A 69 kV line supplies the alternate qualified offsite circuit. The 69 kV line supplies transformers TR12EP-1 and TR12EP-2, either of which can be manually aligned to directly supply Train A 4.16 kV emergency buses T11C and T11D and Train B 4.16 kV emergency buses T11A and T11B. The qualified offsite circuits are physically independent from one another.

1 **INSERT 3**
(Unit 2 only)

The onsite Class 1E AC Distribution System includes Train A and Train B. Train A and Train B are normally powered from the main generator. The main generator supplies Train A via unit auxiliary transformer TR2CD and supplies Train B via unit auxiliary transformer TR2AB. The unit auxiliary transformer TR2CD supplies bus 2C, which in turn supplies the onsite Class 1E 4.16 kV emergency bus T21C, a Train A bus. The unit auxiliary transformer TR2CD also supplies bus 2D which in turn supplies the onsite Class 1E 4.16 kV emergency bus T21D, also a Train A bus. The unit auxiliary transformer TR2AB supplies bus 2A, which in turn supplies the onsite Class 1E 4.16 kV emergency bus T21A, a Train B bus. The unit auxiliary transformer TR2AB also supplies bus 2B, which in turn supplies the onsite Class 1E 4.16 kV emergency bus T21B, also a Train B bus. The preferred qualified offsite circuit is supplied via reserve auxiliary transformers (RAT) TR201CD and TR201AB. The Train A and Train B 4.16 kV emergency buses will automatically transfer to the preferred qualified offsite circuit as a result of a turbine generator trip. Each RAT is supplied by a separate 34.5 kV line from an onsite switchyard. RAT TR201CD supplies the Train A 4.16 kV emergency bus T21C via bus 2C while emergency bus T21D is supplied via bus 2D. RAT TR201AB supplies the Train B 4.16 kV emergency bus T21A via bus 2A while emergency bus T21B is supplied via bus 2B. A 69 kV line supplies the alternate qualified offsite circuit. The 69 kV line supplies transformersTR12EP-1 and TR12EP-2, either of which can be manually aligned to directly supply Train A 4.16 kV emergency buses T21C and T21D and Train B 4.16 kV emergency buses T21A and T21B. The qualified offsite circuits are physically independent from one another.

1 **INSERT 3A**

The LCO section provides a description of the required components that comprise the qualified offsite circuits.

1 **INSERT 4**

and auto-connected loads, via individual time delay relays,

1 **INSERT 5**
(Unit 1 only)

DG 1-AB is dedicated to emergency buses T11A and T11B.

1 **INSERT 5**
(Unit 2 only)

DG 2-CD is dedicated to emergency buses T21C and T21D. DG 2-AB is dedicated to emergency buses T21A and T21B.

1 **INSERT 5A**

an ESF actuation signal, specifically

1 **INSERT 5B**

, Steam Line Pressure - Low, or Steam Line Pressure - High Differential Pressure Between Steam Lines

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BASES

BACKGROUND (continued)

an SI signal. The DGs will also start and operate in the standby mode without tying to the ~~ESF~~ emergency bus on an SI signal alone. Following the trip of offsite power, ~~a sequencer~~ an undervoltage signal strips nonpermanent loads from the ~~ESF~~ emergency bus. When the DG is tied to the ~~ESF~~ emergency bus, loads are then sequentially connected to ~~its~~ their respective ~~ESF~~ emergency bus by the ~~automatic load sequencer~~ individual time delay relays. The ~~sequencing logic~~ controls the permissive and starting signals to motor breakers to prevent overloading the DG by automatic load application. ① ② ① ①

In the event of a loss of preferred power, the ESF electrical loads are automatically connected to the DGs in sufficient time to provide for safe reactor shutdown and to mitigate the consequences of a Design Basis Accident (DBA) such as a loss of coolant accident (LOCA).

Certain required unit loads are returned to service in a predetermined sequence in order to prevent overloading the DG in the process. Within approximately 1 minute after the initiating signal is received, all loads needed to recover the unit or maintain it in a safe condition are returned to service. ②

Ratings for Train A and Train B DGs satisfy the requirements of Regulatory Guide 1.9 (Ref. 3). The continuous service rating of each DG is ~~7000~~ 3500 kW with ~~10%~~ overload permissible for up to 2 hours in any 24 hour period. The ESF loads that are powered from the 4.16 kV ~~ESF~~ emergency buses are listed in Reference ~~2~~ 4. ① ② ①

INSERT 5C

INSERT 5D

APPLICABLE SAFETY ANALYSES

The initial conditions of DBA and transient analyses in the FSAR, ~~Chapter 6 (Ref. 4) and~~ Chapter ~~15~~ 14 (Ref. 5), 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; Section 3.4, Reactor Coolant System (RCS); and Section 3.6, Containment Systems. ① ① ②

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 one train of the onsite or offsite AC sources OPERABLE during accident conditions in the event of: ⑨ ⑨

a. An assumed loss of all offsite power or all onsite AC power, and ④ ③

1 **INSERT 5C**

(however the continuous service rating is not exceeded in the post accident load profile)

1 **INSERT 5D**

Each DG has its own starting air system consisting of two redundant starting air trains. Each train has one start receiver that normally contains sufficient air for two EDG start sequences. One start sequence includes a 10 second continuous crank and the second start sequence includes an actual run of the DG. The energy used for the first start sequence is greater than that required for the DG run sequence. Also each DG has its own day tank and fuel oil transfer system. The fuel oil transfer system, which includes two transfer pumps, is capable of transferring fuel oil from the associated fuel oil storage tank to the day tank. Each transfer pump is capable of maintaining the level in the day tank when the associated DG is operating at full load.

BASES

APPLICABLE SAFETY ANALYSES (continued)

b. A worst case single failure. Operating

10 CFR 50.36(c)(2)(ii) 1

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

LCO

Two qualified circuits between the offsite transmission network and the onsite Class 1E Electrical Power System and separate and independent DGs for each train ensure availability of the 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. transient 1

Qualified offsite circuits are those that are described in the FSAR and are part of the licensing basis for the unit. 14

[In addition, one required automatic load sequencer per train must be OPERABLE.] 3

Each offsite circuit must be capable of maintaining rated frequency and voltage, and accepting required loads during an accident, while connected to the ESF buses. emergency 1

[Offsite circuit #1 consists of Safeguards Transformer B, which is supplied from Switchyard Bus B, and is fed through breaker 52-3 powering the ESF transformer XNB01, which, in turn, powers the #1 ESF bus through its normal feeder breaker. Offsite circuit #2 consists of the Startup Transformer, which is normally fed from the Switchyard Bus A, and is fed through breaker PA 0201, powering the ESF transformer, which, in turn, powers the #2 ESF bus through its normal feeder breaker.] INSERT 6 2

Each DG must be capable of starting, accelerating to rated speed and voltage, and connecting to its respective ESF bus on detection of bus undervoltage. This will be accomplished within [10] seconds. Each DG must also 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 DG in standby with the engine hot and DG in standby with the engine at ambient conditions. Additional DG capabilities must be demonstrated to meet required Surveillances, e.g., capability of the DG to revert to standby status on an ECCS signal while operating in parallel test mode. emergency emergency 1 1 2 1 5

Proper sequencing of loads, [including tripping of nonessential loads,] is a required function for DG OPERABILITY. permanent INSERT 6B 2 5 6

2

INSERT 6
(Unit 1 only)

The preferred qualified offsite circuit consists of RATs TR101CD and TR101AB, the cabling and breakers to 4.16 kV buses 1A, 1B, 1C, and 1D, 4.16 kV buses 1A, 1B, 1C, and 1D, and the cabling and breakers to 4.16 kV emergency buses T11A, T11B, T11C, and T11D. The alternate qualified offsite circuit consists of transformer TR12EP-1 or TR12EP-2, the cabling and switches to 4.16 kV bus 1 (and bus 2, if TR12EP-2 is used), and the cabling, switches, and breakers to either Train A 4.16 kV emergency buses T11C and T11D or Train B 4.16 kV emergency buses T11A and T11B.

2

INSERT 6
(Unit 2 only)

The preferred qualified offsite circuit consists of RATs TR201CD and TR201AB, the cabling and breakers to 4.16 kV buses 2A, 2B, 2C, and 2D, 4.16 kV buses 2A, 2B, 2C, and 2D, and the cabling and breakers to 4.16 kV emergency buses T21A, T21B, T21C, and T21D. The alternate qualified offsite circuit consists of transformer TR12EP-1 or TR12EP-2, the cabling and switches to 4.16 kV bus 1 (and bus 2, if TR12EP-2 is used), and the cabling, switches, and breakers to either Train A 4.16 kV emergency buses T21C and T21D or Train B 4.16 kV emergency buses T21A and T21B.

INSERT 6A

Not Used.

5 6

INSERT 6B

In addition, day tank fuel oil level, air start receiver pressure (air pressure for one start in one air receiver), and fuel oil transfer system (one of the two fuel oil transfer pumps) requirements must be met for each required DG.

BASES

LCO (continued)

The AC sources in one train must be separate and independent (to the extent possible) of the AC sources in the other train. For the DGs, separation and independence are complete. INSERT 6C (1)

For the offsite AC sources, separation and independence are to the extent practical. ~~A circuit may be connected to more than one ESF bus, with fast transfer capability to the other circuit OPERABLE, and not violate separation criteria. A circuit that is not connected to an ESF bus is required to have OPERABLE fast transfer interlock mechanisms to at least two ESF buses to support OPERABILITY of that circuit.~~ INSERT 7 (1) INSERT 8 (5)

APPLICABILITY

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

a. Acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of ~~AOOs~~ anticipated operational transients or abnormal transients and (;) (4) (1)

b. Adequate core cooling is provided and containment OPERABILITY and other vital functions are maintained in the event of a postulated DBA. INSERT 9 (5)

The AC power requirements for MODES 5 and 6 are covered in LCO 3.8.2, "AC Sources - Shutdown." INSERT 10 (6)

ACTIONS

A.1 INSERT 10AA TSTF-359

To ensure a highly reliable power source remains with one required 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. INSERT 10A (1) (6) (5) (5)

~~- 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~~ (7)

1

INSERT 6C

, except for the fuel oil storage tanks, which are shared between units

1

INSERT 7

If the main generator is supplying the Class 1E Electrical Power Distribution System, the preferred qualified offsite circuit must be capable of fast transfer to both trains of the Class 1E Distribution System. The alternate qualified offsite circuit must be capable of manual transfer to one train of the Class 1E Electrical Power Distribution System. The qualified preferred or alternate offsite circuit may be connected to more than one ESF train and not violate separation criteria.

5

INSERT 8

Additionally, the electrical unit's electrical sources must include electrical sources from the other unit that is required to support the Essential Service Water (ESW) System. When an ESW train is not isolated from Unit 2 (Unit 1) and Unit 1 (Unit 2), the Unit 2 (Unit 1) and Unit 1 (Unit 2) AC sources are required to be OPERABLE and capable of supplying the appropriate Unit 2 (Unit 1) and Unit 1 (Unit 2) Class 1E electrical power distribution subsystems. In this case, at least one Unit 2 (Unit 1) and Unit 1 (Unit 2) qualified circuit shall be OPERABLE. If a Unit 2 (Unit 1) and Unit 1 (Unit 2) qualified circuit is not supplying the appropriate Unit 2 (Unit 1) and Unit 1 (Unit 2) Class 1E electrical power distribution subsystem, then the required Unit 2 (Unit 1) and Unit 1 (Unit 2) preferred qualified circuit must be OPERABLE with the capability to fast transfer to the appropriate Unit 2 (Unit 1) and Unit 1 (Unit 2) Class 1E electrical power distribution subsystem. If both ESW trains are not isolated from Unit 2 (Unit 1) and Unit 1 (Unit 2), then two Unit 2 (Unit 1) and Unit 1 (Unit 2) DGs are required to be OPERABLE. If only one ESW train is isolated from Unit 2 (Unit 1) and Unit 1 (Unit 2), then the Unit 2 (Unit 1) and Unit 1 (Unit 2) DG associated with the un-isolated ESW train must be OPERABLE.

5

INSERT 9

A Note has been added taking exception to the Applicability requirements for the required Unit 2 (Unit 1) and Unit 1 (Unit 2) AC sources in LCO 3.8.1.c and LCO 3.8.1.d provided the associated required equipment is inoperable. This exception is intended to allow declaring the Unit 2 (Unit 1) and Unit 1 (Unit 2) supported equipment inoperable either in lieu of declaring the Unit 2 (Unit 1) and Unit 1 (Unit 2) AC sources inoperable, or at any time subsequent to entering ACTIONS for an inoperable Unit 2 (Unit 1) and Unit 1 (Unit 2) AC Source. This exception is acceptable since, with the Unit 2 (Unit 1) and Unit 1 (Unit 2) powered equipment inoperable and the associated ACTIONS entered, the Unit 2 (Unit 1) and Unit 1 (Unit 2) AC sources provide no additional assurance of meeting the above criteria.

6

INSERT 10

and other conditions in which AC sources are required

TSTF-359

INSERT 10AA

A Note prohibits the application of LCO 3.0.4.b to an inoperable DG. There is an increased risk associated with entering a MODE or other specified condition in the Applicability with an inoperable DG and the provisions of LCO 3.0.4.b, which allow entry into a MODE or other specified condition in the Applicability with the LCO not met after performance of a risk assessment addressing inoperable systems and components, should not be applied in this circumstance.

5

INSERT 10A

As Noted, this Required Action is not applicable if only a required Unit 2 (Unit 1) and Unit 1 (Unit 2) offsite circuit is inoperable.

BASES

ACTIONS (continued)

~~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.~~ 7

A.2

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 power train.~~ INSERT 11 8 This includes motor driven auxiliary feedwater pumps. Single train systems ~~such as turbine driven auxiliary feedwater pumps, may not be included.~~ INSERT 12 1

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: 9

a. The train has no offsite power supplying its loads ; and 5 4

6 redundant

b. A required feature on ~~the~~ an other train is inoperable. 1

If at any time during the existence of Condition A (one required offsite circuit inoperable) a redundant required feature subsequently becomes inoperable, this Completion Time begins to be tracked. 6

Discovering no offsite power to one train of the onsite Class 1E Electrical Power Distribution System ~~coincident with one or more inoperable~~ INSERT 13 required support or supported features, or both, that are associated with ~~the~~ an other train ~~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. 5 5

The remaining required OPERABLE offsite circuit 5 and DGs are adequate to supply electrical power to Train A and Train B of the onsite Class 1E Electrical Power Distribution ~~System~~ INSERT 14. 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 5 5 1

8 **INSERT 11**

designed with redundant safety related trains.

1 **INSERT 12**

are normally not included, although, for this Required Action, the turbine driven auxiliary feedwater pump is considered redundant to Trains A and B. Redundant required features failures consist of inoperable features associated with a train, redundant to the train that has no offsite power available.

5 **INSERT 13**

or the required Unit 2 (Unit 1) and Unit 1 (Unit 2) onsite Class 1E Electrical Power Distribution System

5 **INSERT 14**

and the Unit 2 (Unit 1) and Unit 1 (Unit 2) Class 1E Electrical Power Distribution System when required to be OPERABLE

BASES

ACTIONS (continued)

reasonable time for repairs, and the low probability of a DBA occurring during this period.

A.3

According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition A for a period that should not exceed 72 hours. With one offsite circuit inoperable, the reliability of the offsite system is degraded, and the potential for a loss of offsite power is increased, with attendant potential for a challenge to the unit safety systems. In this condition, however, the remaining OPERABLE offsite circuit and DGs are adequate to supply electrical power to the onsite Class 1E Distribution System. INSERT 15 Electrical Power required 1 3 5 5

The 72 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.

The second Completion Time for Required Action A.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 A is entered while, for instance, a DG is inoperable and that DG is subsequently returned OPERABLE, the LCO may already have been not met for up to 72 hours. This could lead to a total of 144 hours, since initial failure to meet the LCO, to restore the offsite circuit. At this time, a DG could again become inoperable, the circuit restored OPERABLE, and an additional 72 hours (for a total of 9 days) allowed prior to complete restoration of the LCO. The 6 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 A and B are entered concurrently. The "AND" connector between the 72 hour and 6 day Completion Times means that both Completion Times apply simultaneously, and the more restrictive Completion Time must be met. 3.8.1.a or b 5

As in Required Action A.2, 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 A was entered. 3.8.1.a or b 5

B.1

To ensure a highly reliable power source remains with an inoperable DG, it is necessary to verify the availability of the offsite circuits on a more

5

INSERT 15

and the Unit 2 (Unit 1) and Unit 1 (Unit 2) Class 1E Electrical Power Distribution System when required to be OPERABLE

BASES

ACTIONS (continued)

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 being not met. However, if a circuit fails to pass SR 3.8.1.1, it is inoperable. Upon offsite circuit inoperability, additional Conditions and Required Actions must then be entered. INSERT 15A (5)

~~- 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.~~ (7)

B.2

Required Action B.2 is intended to provide assurance that a loss of offsite power, during the period that a DG is inoperable, does not result in a complete loss of safety function of critical systems. These features are designed with redundant safety related trains. This includes motor driven auxiliary feedwater pumps. Single train systems ~~such as turbine driven auxiliary feedwater pumps, are not included.~~ INSERT 16 (1) Redundant required feature failures consist of inoperable features associated with a train, redundant to the train that has an inoperable DG.

The Completion Time for Required Action B.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: (4)

a. An inoperable DG exists ~~and~~ (3)

b. A (6) redundant required feature on ~~the~~ an other train ~~(Train A or Train B)~~ is inoperable. (1)

If at any time during the existence of this Condition (one required DG inoperable) a redundant required feature subsequently becomes inoperable, this Completion Time ~~would~~ (5) begin to be tracked. (6) (8)

5 **INSERT 15A**

As Noted, this Required Action is not applicable if a required Unit 2 (Unit 1) and Unit 1 (Unit 2) DG is inoperable.

1 **INSERT 16**

are normally not included, although, for this Required Action, the turbine driven auxiliary feedwater pump is considered redundant to Trains A and B.

BASES

ACTIONS (continued)

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~~ another train, 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. 8 9 5

In this Condition, the remaining OPERABLE DG and offsite circuits are adequate to supply electrical power to the onsite Class 1E Distribution System. Electrical Power 1 INSERT 17 5 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.

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~~ an inoperable DG does not exist on the other required 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 or G 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 OPERABILITY of th~~e~~ose DG. 5 5 9 6 5

In the event the inoperable DG is restored to OPERABLE status prior to completing either B.3.1 or B.3.2, 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 B. 2

According to Generic Letter 84-15 (Ref. 7), 24 hours is reasonable to confirm that the OPERABLE DG(s) is not affected by the same problem as the inoperable DG. 2

5 **INSERT 17**

and the Unit 2 (Unit 1) and Unit 1 (Unit 2) Class 1E Electrical Power Distribution System when required to be OPERABLE

BASES

ACTIONS (continued)

B.4

According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition B for a period that should not exceed 72 hours.

required (S) Electrical Power 5

In Condition B, the remaining OPERABLE DG and offsite circuits are adequate to supply electrical power to the onsite Class 1E Distribution System. The 72 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. 8

INSERT 11

The second Completion Time for Required Action B.4 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 B is entered while, for instance, an offsite circuit is inoperable and that circuit is subsequently restored OPERABLE, the LCO may already have been not met for up to 72 hours. This could lead to a total of 144 hours, since initial failure to meet the LCO, to restore the DG. At this time, an offsite circuit could again become inoperable, the DG restored OPERABLE, and an additional 72 hours (for a total of 9 days) allowed prior to complete restoration of the LCO. The 6 day Completion Time provides a limit on time allowed in a specified condition after discovery of failure to meet ~~the~~ LCO 3.8.1.a or b. This limit is considered reasonable for situations in which Conditions A and B are entered concurrently. The "AND" connector between the 72 hour and 6 day Completion Times means that both Completion Times apply simultaneously, and the more restrictive Completion Time must be met. 5

As in Required Action B.2, 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 B was entered.

and with inoperability of redundant required features

C.1 and C.2

required 6 6

Required Action C.1, which applies when two required offsite circuits are inoperable and with inoperability of redundant required features, is intended to provide assurance that an event with a coincident single failure will not result in a complete loss of redundant required safety functions. The Completion Time for ~~this failure of redundant required features~~ taking this action is reduced to 12 hours from that allowed for one train without offsite power (Required Action A.2). The rationale for the reduction to 12 hours is that Regulatory Guide 1.93 (Ref. 6) allows a Completion Time of 24 hours for two required offsite circuits inoperable, 8

5 **INSERT 18**

and the Unit 2 (Unit 1) and Unit 1 (Unit 2) Class 1E Electrical Power Distribution System when required to be OPERABLE

BASES

ACTIONS (continued)

based upon the assumption that two complete safety trains are OPERABLE. When a concurrent redundant required feature failure exists, this assumption is not the case, and a shorter Completion Time of 12 hours is appropriate. These features are ~~powered from redundant AC safety trains~~. This includes motor driven auxiliary feedwater pumps. Single train features~~, such as turbine driven auxiliary pumps, are not included in the list~~.

INSERT 19 (8)

INSERT 20 (1)

The Completion Time for Required Action C.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. All required offsite circuits are inoperable and (5) (4)

b. A required feature is inoperable. (6) redundant

If at any time during the existence of Condition C (two offsite circuits inoperable) a required feature becomes inoperable, this Completion Time begins to be tracked. required (6) subsequently (8)

According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition C 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 level of degradation generally corresponds to a total loss of the immediately accessible offsite power sources.

Because of the normally high availability of the offsite sources, this level of degradation may appear to be more severe than other combinations of two AC sources inoperable that involve one or more DGs inoperable. 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 (5) (4)

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.

8 **INSERT 19**

designed with redundant safety related trains.

1 **INSERT 20**

are normally not included, although, for this Required Action, the turbine driven auxiliary feedwater pump is considered redundant to Trains A and B. Redundant required features failures consist of inoperable features associated with a train, redundant to the train that has no offsite power available

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BASES

ACTIONS (continued)

two

With both of the required offsite circuits 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 one of the offsite circuits commensurate with the importance of maintaining an AC electrical power system capable of meeting its design criteria. 5

According to Reference 6, with the available offsite AC sources, two less than required by the LCO, operation may continue for 24 hours. If two offsite sources are restored within 24 hours, unrestricted operation may continue. If only one offsite source is restored within 24 hours, power operation continues in accordance with Condition A.

D.1 and D.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 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. 16

Condition D must be entered when the preferred offsite source and DG are inoperable and when the alternate source is not supplying the train.

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

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.

BASES

ACTIONS (continued)

E.1

two required (5) more than two ① ⑥

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~~ may not be available to power the minimum required ESF functions. Since the offsite electrical power system is the only source of AC power for the majority of ESF equipment for this 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. ① ①

According to Reference 6, with both unit DGs inoperable, operation may continue for a period that should not exceed 2 hours. INSERT 21 ① ①

~~[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.~~ (3)

~~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.]~~

1 **INSERT 21**

This Completion Time assumes complete loss of onsite (DG) AC capability to power minimum loads needed to respond to analyzed events.

BASES

ACTIONS (continued)

G.1 and G.2 F

(5)

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~~ unit systems. (5)

H.1 (6)

Condition H corresponds to a level of degradation in which all redundancy in the AC electrical power supplies has been lost. At this severely degraded level, any further losses in the AC electrical power system will cause a loss of function. Therefore, no additional time is justified for continued operation. The unit is required by LCO 3.0.3 to commence a controlled shutdown.

SURVEILLANCE REQUIREMENTS

(9) INSERT 21A (10)

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 ~~10 CFR 50, Appendix A, GDC 18~~ (Ref. 8). Periodic component tests are supplemented by extensive functional tests during refueling outages (under simulated accident conditions). The SRs for demonstrating the OPERABILITY of the DGs are in accordance with the recommendations of Regulatory Guide 1.9 (Ref. 3), Regulatory Guide 1.108 (Ref. 9), ~~and~~ Regulatory Guide 1.137 (Ref. 10), (1) and IEEE Standard 387-1995 (Ref. 11) as addressed in the ~~FSAR~~. (11) applicable SR discussion

Where the SRs discussed herein specify voltage and frequency tolerances, the following is applicable. The minimum steady state output voltage of [3740] 3910 V is [90]% of the nominal 4160 V output voltage. ~~This value, which is specified in ANSI C84.1 (Ref. 11), allows for voltage drop to the terminals of 4000 V motors whose minimum operating voltage is specified as 90% or 3600 V. It also allows for voltage drops to motors and other equipment down through the 120 V level where minimum operating voltage is also usually specified as 90% of name plate rating.~~ (7) INSERT 21B The specified maximum steady state output voltage of [4756] 4400 V is equal to the maximum operating voltage specified for 4000 V motors. It ensures that for a lightly loaded distribution system, the voltage at the terminals of 4000 V motors is no more than the maximum rated operating voltages. The specified minimum and maximum steady state frequencies of the DG (5)

10 **INSERT 21A**

Plant Specific Design Criterion (PSDC) 39

1 **INSERT 21B**

ensures the ESF pumps have an adequate level of voltage so that they are assured of achieving adequate fluid flow to meet their safety and accident mitigation functions.

BASES

SURVEILLANCE REQUIREMENTS (continued)

59.4 are ~~58.8~~ Hz and 61.2 Hz, respectively. These values ~~are equal to ± 2% of the 60 Hz nominal frequency and are derived from the recommendations given in Regulatory Guide 1.9 (Ref. 3).~~ INSERT 21C 1

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,~~ and that appropriate independence of offsite circuits is maintained. 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. INSERT 21D 6

SR 3.8.1.2 and SR 3.8.1.~~7~~ 8 5

These SRs help 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.

To minimize the wear on moving parts that do not get lubricated when the engine is not running, these SRs are modified by a Note (Note 1 for SR 3.8.1.2 and Note for SR 3.8.1.~~8~~ 8) to indicate that all DG starts for these Surveillances may be preceded by an engine prelube period and followed by a warmup period prior to loading. 5

For the purposes of SR 3.8.1.2 and SR 3.8.1.~~7~~ 8 testing, the DGs are started from standby conditions. Standby conditions for a DG mean that the diesel engine coolant and oil are being continuously circulated and temperature is being maintained consistent with manufacturer recommendations. 5

In order to reduce stress and wear on diesel engines, ~~some~~ the manufacturer~~s~~ recommend a modified start in which the ~~starting speed of DGs is limited, warmup is limited to this lower speed, and the~~ DGs are gradually accelerated to synchronous speed prior to loading. These start procedures are the intent of Note 2~~, which is only applicable when such modified start procedures are recommended by the manufacturer.~~ 2 5 2

8 SR 3.8.1.~~7~~ requires that, at a 184 day Frequency, the DG starts from standby conditions and achieves required voltage and frequency within 5

1

INSERT 21C

ensure the ESF pumps can achieve adequate fluid flow to meet their safety and accident mitigation functions. The minimum voltage and frequency limits specified to be met within the DG start time of 10 seconds are based upon the recommendations given in Regulatory Guide 1.9 (Ref. 3).

6

INSERT 21D

the required qualified offsite circuits are OPERABLE

BASES

SURVEILLANCE REQUIREMENTS (continued)

Section 14.3

10 seconds. The 10 second start requirement supports the assumptions of the design basis LOCA analysis in the FSAR, Chapter [15] (Ref. 5). 1 2

U

of SR 3.8.1.2

The 10 second start requirement is not applicable to SR 3.8.1.2 (see Note 2) when a modified start procedure as described above is used. If a modified start is not used, the 10 second start requirement of SR 3.8.1.7 applies. 5 8 5

8

Since SR 3.8.1.7 requires a 10 second start, it is more restrictive than SR 3.8.1.2, and it may be performed in lieu of SR 3.8.1.2. 5

INSERT 22

In addition to the SR requirements, the time for the DG to reach steady state operation, unless the modified DG start method is employed, is periodically monitored and the trend evaluated to identify degradation of governor and voltage regulator performance. 6

The 31 day Frequency for SR 3.8.1.2 is consistent with Regulatory Guide 1.9 (Ref. 3). The 184 day Frequency for SR 3.8.1.7 is a reduction in cold testing consistent with Generic Letter 84-15 (Ref. 7). These Frequencies provide adequate assurance of DG OPERABILITY, while minimizing degradation resulting from testing. 8 5

SR 3.8.1.3

INSERT 22A

This Surveillance verifies that the DGs are capable of synchronizing with the offsite electrical system and accepting loads ~~greater than or equal to the equivalent of the maximum expected accident loads~~. A minimum run time of 60 minutes is required to stabilize engine temperatures, while minimizing the time that the DG is connected to the offsite source. 13 13

INSERT 22B

Although no power factor requirements are established by this SR, the DG 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 DG. Routine overloading may result in more frequent teardown inspections ~~in accordance with vendor recommendations in order to maintain DG OPERABILITY~~. 2 2 2 15

INSERT 22C

The 31 day Frequency for this Surveillance is consistent with Regulatory Guide 1.9 (Ref. 3).

1 **INSERT 22**

, the DG is required to maintain proper voltage and frequency limits after steady state is achieved. The voltage and frequency limits are normally achieved within 10 seconds.

13 **INSERT 22A**

Consistent with Regulatory Guide 1.9 (Ref. 3),

13 **INSERT 22B**

90% to 100% of the continuous rating of the DG

15 **INSERT 22C**

being required in order to maintain DG reliability

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BASES

SURVEILLANCE REQUIREMENTS (continued)

This SR is modified by four Notes. Note 1 indicates that diesel engine runs for this Surveillance may include gradual loading, as recommended by the manufacturer, so that mechanical stress and wear on the diesel engine are minimized. Note 2 states that momentary transients, because of changing bus loads, do not invalidate this test. ~~Similarly, momentary power factor transients above the limit do not invalidate the test.~~ Note 3 indicates that this Surveillance should be conducted on only one DG at a time in order to avoid common cause failures that might result from offsite circuit or grid perturbations. Note 4 stipulates a prerequisite requirement for performance of this SR. A successful DG start must precede this test to credit satisfactory performance.

6

Unit 1 (Unit 1) and Unit 2 (Unit 2)

5

SR 3.8.1.4

INSERT 22D

This SR provides verification that the level of fuel oil in the day tank ~~and engine mounted tank~~ is ~~at or~~ above the level at which fuel oil is automatically added. The level is expressed as an equivalent volume in gallons, and is selected to ensure adequate fuel oil for ~~a minimum of 1 hour~~ of DG operation at full load ~~plus 10%~~.

greater than 15 minutes

3

1

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

SR 3.8.1.5

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 oil day ~~(and engine mounted)~~ tanks once every [31] 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 DG operation. Water may come from any of several sources, including condensation, ground water, rain water, contaminated fuel oil, and 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. 10). This SR is for preventative maintenance. The presence of water does not necessarily represent failure of this SR, provided the accumulated water is removed during the performance of this Surveillance.

each

6 3 2

1 INSERT 22D

of which 31.4 gallons is unusable (due to tank geometry and vortexing considerations) and 70 gallons is usable,

INSERT 23 (5)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.1.6 (7)

(one per fuel oil transfer system)

(5) (1)

automatically

This Surveillance demonstrates that each required fuel oil transfer pump 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 pump 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.

(5) [The Frequency for this SR is ~~variable, depending on individual system design, with up to a~~ [92] day ~~interval~~. The [92] day Frequency (12) (1) (2) corresponds to the testing requirements for pumps as contained in the ASME Code, ~~Section XI~~ (Ref. 1) (1); however, the design of fuel transfer systems is such that pumps operate automatically or must be started manually in order to maintain an adequate volume of fuel oil in the day [and engine mounted] tanks during or following DG testing. In such a case, a 31 day Frequency is appropriate. Since proper operation of fuel transfer systems is an inherent part of DG OPERABILITY, the Frequency of this SR should be modified to reflect individual designs.] (5)

OM

(8)

~~SR 3.8.1.7~~

~~See SR 3.8.1.2.~~

Automatic

[SR 3.8.1.8] (9)

emergency

auxiliary (5) (2) (1) (5)

preferred

Transfer of each [4.16 kV ESF bus] power supply from the normal offsite circuit to the ~~alternate~~ offsite circuit demonstrates the OPERABILITY of the ~~alternate~~ circuit ~~distribution network~~ to power the shutdown loads. INSERT 24 (5)

required offsite

(24) The [18] month Frequency of the Surveillance is based on engineering judgment, taking into consideration the unit conditions required to perform the Surveillance ~~and is intended to be consistent with expected fuel cycle lengths~~. Operating experience has shown that these components usually pass the SR when performed at the (24) [18] month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint. INSERT 24A (5)

(1) (2) (1) (2)

~~This SR is modified by a Note. The reason for the Note is that, during operation with the reactor critical, performance of this SR could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. This restriction from normally performing the Surveillance in~~ (5)

5

INSERT 23

SR 3.8.1.6

This Surveillance ensures that, without the aid of the refill compressor, sufficient air start capacity for each DG is available. While the system design requirements provide for two engine start cycles from each of the two air start receivers associated with each DG without recharging, only one start sequence is required to meet the OPERABILITY requirements (since the accident analysis assumes the DG starts on the first attempt). The pressure specified in this SR reflects the lowest value at which one DG start can be accomplished with one air start receiver.

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.

5

INSERT 24

and the manual alignment to the alternate required offsite circuit

INSERT 24A

As noted (Note 1 to SR 3.8.1.9), SR 3.8.1.9.a is only required to be met when the auxiliary source is supplying the onsite electrical power subsystem. This is acceptable since the preferred offsite source would be supplying the onsite electrical power subsystem and a transfer would not be necessary.

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~MODE 1 or 2 is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g. post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when the Surveillance is performed in MODE 1 or 2. Risk insights or deterministic methods may be used for this assessment.]~~ (5)

(5)

SR 3.8.1.~~9~~ 10

Each DG is provided with an engine overspeed trip to prevent damage to the engine. Recovery from the transient caused by the loss of a large load could cause diesel engine overspeed, which, if excessive, might result in a trip of the engine. This Surveillance demonstrates the DG load response characteristics and capability to reject the largest single load without exceeding predetermined ~~voltage and~~ frequency and while maintaining a specified margin to the overspeed trip. [For this unit, the single load for each DG ~~and its horsepower rating~~ is ~~as follows:~~] 600 kW. This Surveillance may be accomplished by either: (6) (6) (2)

(1) INSERT 25

a. Tripping the DG output breaker with the DG carrying greater than or equal to its associated single largest post-accident load while paralleled to offsite power, or while solely supplying the bus ~~or~~ (3) (4)

b. Tripping its associated single largest post-accident load with the DG solely supplying the bus.

INSERT 26 ~~As required by IEEE-308 (Ref. 12)~~, the load rejection test is acceptable if the increase in diesel speed does not exceed 75% of the difference between synchronous speed and the overspeed trip setpoint, or 15% above nominal ~~synchronous~~ speed, whichever is lower. INSERT 27 (1) (1)

The time, voltage, and frequency tolerances specified in this SR are derived from Regulatory Guide 1.9 (Ref. 3) recommendations for response during load sequence intervals. The ~~4~~ 2 seconds specified is (5)

1 **INSERT 25**

Voltage and frequency are also verified to reach steady state conditions within 2 seconds.

1 **INSERT 26**

Consistent with Regulatory Guide 1.9 (Ref. 3)

1 **INSERT 27**

This corresponds to 64.4 Hz, which is the nominal speed plus 75% of the difference between nominal speed and the overspeed trip setpoint.

BASES

SURVEILLANCE REQUIREMENTS (continued)

approximately the 3.49 (1)

equal to 60% of ~~a typical 5~~ second load sequence interval associated with sequencing of the largest load. The voltage and frequency specified are consistent with the design range of the equipment powered by the DG. SR 3.8.1.10.a corresponds to the maximum frequency excursion, while SR 3.8.1.10.b and SR 3.8.1.10.c are steady state voltage and frequency values to which the system must recover following load rejection. The 18 month Frequency is ~~consistent with the recommendation of Regulatory Guide 1.108 (Ref. 9)~~. (10) (24) (5) INSERT 28 (1)

This SR is modified by two Notes. The reason for Note 1 is that during operation with the reactor critical, performance of this SR could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. This restriction from normally performing the Surveillance in MODE 1 or 2 is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g. post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines ~~plant~~ unit safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a ~~plant~~ unit shutdown and startup to determine that ~~plant~~ unit safety is maintained or enhanced when the Surveillance is performed in MODE 1 or 2. Risk insights or deterministic methods may be used for this assessment. INSERT 28A (12) (9) (1) (1)

Note 2 ensures that the DG is tested under load conditions that are as close to design basis conditions as possible. When synchronized with offsite power, testing should be performed at a power factor of ≤ ~~0.9~~ 0.86. This power factor is representative of the actual inductive loading a DG would see under design basis accident conditions. Under certain conditions, however, Note 2 allows the surveillance to be conducted at a power factor other than ≤ ~~0.9~~ 0.86. These conditions occur when grid voltage is high, and the additional field excitation needed to get the power factor to ≤ ~~0.9~~ 0.86 results in voltages on the emergency busses that are too high. Under these conditions, the power factor should be maintained as close as practicable to ~~0.9~~ 0.86 while still maintaining acceptable voltage limits on the emergency busses. In other circumstances, the grid voltage may be such that the DG excitation levels needed to obtain a power factor of ~~0.9~~ 0.86 may not cause unacceptable voltages on the emergency (2) (9) (2)

1

INSERT 28

based on engineering judgement, taking into consideration unit conditions required to perform the Surveillance. Operating experience has shown that these components usually pass the SR when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

12

INSERT 28A

Credit may be taken for unplanned events that satisfy this SR.

BASES

SURVEILLANCE REQUIREMENTS (continued)

busses, but the excitation levels are in excess of those recommended for the DG. In such cases, the power factor shall be maintained as close as practicable to 0.9 without exceeding the DG excitation limits. 0.86 (2)

- REVIEWER'S NOTE -

The above MODE restrictions may be deleted if it can be demonstrated to the staff, on a plant specific basis, that performing the SR with the reactor in any of the restricted MODES can satisfy the following criteria, as applicable:

a. Performance of the SR will not render any safety system or component inoperable,

b. Performance of the SR will not cause perturbations to any of the electrical distribution systems that could result in a challenge to steady state operation or to plant safety systems, and

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.

(7) (5)

SR 3.8.1.10 (1)

Consistent with Regulatory Guide 1.9 (Ref. 3), paragraph C.2.2.8

This Surveillance demonstrates the DG capability to reject a full load without overspeed tripping or exceeding the predetermined voltage limits. The DG full load rejection may occur because of a system fault or inadvertent breaker tripping. This Surveillance ensures proper engine generator load response under the simulated test conditions. This test simulates the loss of the total connected load that the DG experiences following a full load rejection and verifies that the DG does not trip upon loss of the load. These acceptance criteria provide for DG damage protection. While the DG is not expected to experience this transient during an event and continues to be available, this response ensures that the DG is not degraded for future application, including reconnection to the bus if the trip initiator can be corrected or isolated. (1) INSERT 28B (13)

The 18 month Frequency is ~~consistent with the recommendation of Regulatory Guide 1.108 (Ref. 9) and is intended to be consistent with expected fuel cycle lengths~~. 24 INSERT 29 (2) (1)

This SR has been modified by two Notes. The reason for Note 1 is that during operation with the reactor critical, performance of this SR could cause perturbation to the electrical distribution systems that could

13 **INSERT 28B**

(90% to 100% of the DG continuous rating)

1 **INSERT 29**

based on engineering judgement, taking into consideration unit conditions required to perform the Surveillance. Operating experience has shown that these components usually pass the SR when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

BASES

SURVEILLANCE REQUIREMENTS (continued)

challenge continued steady state operation and, as a result, unit safety systems. Note 2 ensures that the DG is tested under load conditions that are as close to design basis conditions as possible. When synchronized with offsite power, testing should be performed at a power factor of ≤ ~~[0.9]~~ 0.86. This power factor is representative of the actual inductive loading a DG would see under design basis accident conditions. Under certain conditions, however, Note 2 allows the surveillance to be conducted at a power factor other than ≤ ~~[0.9]~~. These conditions occur when grid voltage is high, and the additional field excitation needed to get the power factor to ≤ ~~[0.9]~~ results in voltages on the emergency busses that are too high. Under these conditions, the power factor should be maintained as close as practicable to ~~[0.9]~~ while still maintaining acceptable voltage limits on the emergency busses. In other circumstances, the grid voltage may be such that the DG excitation levels needed to obtain a power factor of ~~[0.9]~~ may not cause unacceptable voltages on the emergency busses, but the excitation levels are in excess of those recommended for the DG. In such cases, the power factor shall be maintained as close as practicable to ~~[0.9]~~ without exceeding the DG excitation limits. 9 9 2

This ~~restriction from normally performing the Surveillance in MODE 1 or 2 is~~ further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines ~~plant~~ unit safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a ~~plant~~ unit shutdown and startup to determine that ~~plant~~ safety is maintained or enhanced when the Surveillance is performed in MODE 1 or 2. Risk insights or deterministic methods may be used for this assessment. INSERT 21A 12 1 9 1 5

- REVIEWER'S NOTE -

The above MODE restrictions may be deleted if it can be demonstrated to the staff, on a plant specific basis, that performing the SR with the reactor in any of the restricted MODES can satisfy the following criteria, as applicable: 7

a. Performance of the SR will not render any safety system or component inoperable,

12

INSERT 29A

Credit may be taken for unplanned events that satisfy this SR.

BASES

SURVEILLANCE REQUIREMENTS (continued)

b. Performance of the SR will not cause perturbations to any of the electrical distribution systems that could result in a challenge to steady state operation or to plant safety systems, and

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.

7

SR 3.8.1.10 2 5

INSERT 29B

As required by Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(1), this Surveillance demonstrates the as designed operation of the standby power sources during loss of the offsite source. 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 DG. It further demonstrates the capability of the DG to automatically achieve the required voltage and frequency within the specified time. 1

The DG 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 DG 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 DG 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.

centrifugal charging trains 1

1

trains

24

INSERT 30

The Frequency of [18 months] is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(1), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths. 1

INSERT 31 1

INSERT 29B

Consistent with Regulatory Guide 1.9 (Ref. 3), paragraph C.2.2.4

1 INSERT 30

based on engineering judgement, taking

1 INSERT 31

Operating experience has shown that these components usually pass the SR when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

BASES

SURVEILLANCE REQUIREMENTS (continued)

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. The reason for Note 2 is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. This restriction from normally performing the Surveillance in MODE 1 ~~or~~ , 2, 3, or 4 is further amplified to allow portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g. post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines ~~plant~~ unit safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a ~~plant~~ unit shutdown and startup to determine that ~~plant~~ safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1 ~~or~~ , 2, 3, or 4. Risk insights or deterministic methods may be used for the assessment. INSERT 32

6 SR 3.8.1.12

INSERT 32A

This Surveillance demonstrates that the DG automatically starts and achieves the required voltage and frequency within the specified time (10 seconds) from the design basis actuation signal (~~LOCA~~ ESF actuation signal) and operates for ≥ 5 minutes. The 5 minute period provides sufficient time to demonstrate stability. SR 3.8.1.12.d and SR 3.8.1.12.e ensure that permanently connected loads and emergency loads are energized from the offsite electrical power system on an ESF signal without loss of offsite power.

INSERT 33

The requirement to verify the connection of permanent and autoconnected loads is intended to satisfactorily show the relationship of these loads to the DG 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, ECCS injection valves are not desired to be stroked open, or ~~high pressure injection systems~~ centrifugal charging trains are not capable of being operated at full flow, or RHR

12

INSERT 32

Credit may be taken for unplanned events that satisfy this SR.

1

INSERT 32A

Consistent with Regulatory Guide 1.9 (Ref. 3), paragraph C.2.2.5,

6

INSERT 33

In addition, the DG is required to maintain proper voltage and frequency limits after steady state is achieved. The voltage and frequency limits are normally achieved within 10 seconds. The time for the DG to reach the steady state voltage and frequency limits is periodically monitored and the trend evaluated to identify degradation of governor and voltage regulator performance. The DG is required to

BASES

SURVEILLANCE REQUIREMENTS (continued)

train 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 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. (1)

INSERT 34

The Frequency of 24 18 months ~~takes~~ into consideration unit conditions required to perform the Surveillance ~~and is intended to be consistent with the expected fuel cycle lengths~~. Operating experience has shown that these components usually pass the SR when performed at the 24 18 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint. (2) (1) (1) (2)

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. The reason for Note 2 is that during operation with the reactor critical, performance of this Surveillance could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. This restriction from normally performing the Surveillance in MODE 1 or 2 is further amplified to allow portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines unit ~~plant~~ safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a unit ~~plant~~ shutdown and startup to determine that unit ~~plant~~ safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1 or 2. Risk insights or deterministic methods may be used for the assessment. (3) (9) (1) (1) (2)

INSERT 34A (12)

1 **INSERT 34**

is based on engineering judgement, taking

12 **INSERT 34A**

Credit may be taken for unplanned events that satisfy this SR.

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BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.1.18 (4)

INSERT 34B

This Surveillance demonstrates that DG noncritical protective functions (e.g., ~~high jacket water temperature~~) are bypassed on a loss of voltage signal ~~concurrent with~~ an ESF actuation test signal ~~and critical protective functions (engine overspeed, generator differential current, low lube oil pressure, high crankcase pressure, and start failure relay) trip the DG to avert substantial damage to the DG unit~~. The noncritical trips are bypassed during DBAs and provide an alarm on an abnormal engine condition. This alarm provides the operator with sufficient time to react appropriately. The DG availability to mitigate the DBA is more critical than protecting the engine against minor problems that are not immediately detrimental to emergency operation of the DG. (1) (1) (11)

low lube oil pressure

or (5)

The ~~18~~ (24) month Frequency is based on engineering judgment, taking into consideration unit conditions required to perform the Surveillance~~, and is intended to be consistent with expected fuel cycle lengths~~. Operating experience has shown that these components usually pass the SR when performed at the ~~18~~ (24) month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint. (2) (1) (2)

The SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required DG from service. This restriction from normally performing the Surveillance in MODE 1 or 2 is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines ~~plant~~ unit safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a ~~plant~~ unit shutdown and startup to determine that ~~plant~~ unit safety is maintained or enhanced when the Surveillance is performed in MODE 1 or 2. Risk insights or deterministic methods may be used for this assessment. (3) (9) (1) (1)

INSERT 34C (12)

1 **INSERT 34B**

Consistent with Regulatory Guide 1.9 (Ref. 3), paragraph C.2.2.12,

12 **INSERT 34C**

Credit may be taken for unplanned events that satisfy this SR.

BASES

SURVEILLANCE REQUIREMENTS (continued)

- REVIEWER'S NOTE -

The above MODE restrictions may be deleted if it can be demonstrated to the staff, on a plant specific basis, that performing the SR with the reactor in any of the restricted MODES can satisfy the following criteria, as applicable:

a. Performance of the SR will not render any safety system or component inoperable,

b. Performance of the SR will not cause perturbations to any of the electrical distribution systems that could result in a challenge to steady state operation or to plant safety systems, and

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.

7

SR 3.8.1.10 5 INSERT 34 E 13 5

INSERT 34D

Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(3), requires demonstration once per 18 months that the DGs can start and run continuously at full load capability for an interval of not less than 24 hours, ≥ [2] hours of which is at a load equivalent to 110% of the continuous duty rating and the remainder of the time at a load equivalent to the continuous duty rating of the DG. The DG starts for this Surveillance can be performed either from standby or hot conditions. The provisions for prelubricating and warmup, discussed in SR 3.8.1.2, and for gradual loading, discussed in SR 3.8.1.3, are applicable to this SR. 1 1

8

INSERT 34F

The load band is provided to avoid routine overloading of the DG. Routine overloading may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY. 15

INSERT 34G

24

The 18 month Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(3), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths. 2 1

INSERT 35

This Surveillance is modified by three Notes. Note 1 states that momentary transients due to changing bus loads do not invalidate this test. Similarly, momentary power factor transients above the power factor limit will not invalidate the test. The reason for Note 2 is that during

1 **INSERT 34D**

This Surveillance demonstrates

13 **INSERT 34E**

(90% to 100% of the DG continuous rating)

1 **INSERT 34F**

The run duration of 8 hours is consistent with IEEE Standard 387-1995 (Ref. 11).

15 **INSERT 34G**

being required in order to maintain DG reliability

1 **INSERT 35**

is based on engineering judgement, taking into consideration unit conditions required to perform the Surveillance. Operating experience has shown that these components usually pass the SR when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

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BASES

SURVEILLANCE REQUIREMENTS (continued)

operation with the reactor critical, performance of this Surveillance could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. Note 3 ensures that the DG is tested under load conditions that are as close to design basis conditions as possible. When synchronized with offsite power, testing should be performed at a power factor of ≤ [0.9]. This power factor is representative of the actual inductive loading a DG would see under design basis accident conditions. Under certain conditions, however, Note 3 allows the Surveillance to be conducted as a power factor other than ≤ [0.9]. These conditions occur when grid voltage is high, and the additional field excitation needed to get the power factor to ≤ [0.9] results in voltages on the emergency busses that are too high. Under these conditions, the power factor should be maintained as close as practicable to [0.9] while still maintaining acceptable voltage limits on the emergency busses. In other circumstances, the grid voltage may be such that the DG excitation levels needed to obtain a power factor of [0.9] may not cause unacceptable voltages on the emergency busses, but the excitation levels are in excess of those recommended for the DG. In such cases, the power factor shall be maintained close as practicable to [0.9] without exceeding the DG excitation limits. This restriction from normally performing the Surveillance in MODE 1 or 2 is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when the Surveillance is performed in MODE 1 or 2. Risk insights or deterministic methods may be used for this assessment.

0.86 (9) (2) unit (9) unit (5)

SR 3.8.1.10 (6) INSERT 35A (5) (12)

This Surveillance demonstrates that the diesel engine can restart from a hot condition, such as subsequent to shutdown from normal Surveillances, and achieve the required voltage and frequency within [10] seconds. The [10] second time is derived from the requirements of the accident analysis to respond to a design basis large break LOCA. (2)

12 **INSERT 35A**

Credit may be taken for unplanned events that satisfy this SR.

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BASES

SURVEILLANCE REQUIREMENTS (continued)

24 The 18 month Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(5). INSERT 36 2 1

This SR is modified by two Notes. Note 1 ensures that the test is performed with the diesel sufficiently hot. The load band is provided to avoid routine overloading of the DG. Routine overloads may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY. The requirement that the diesel has operated for at least 2 hours at full load conditions prior to performance of this Surveillance is based on manufacturer recommendations for achieving hot conditions. Momentary transients due to changing bus loads do not invalidate this test. Note 2 allows all DG starts to be preceded by an engine prelube period to minimize wear and tear on the diesel during testing.

INSERT 36A 15 2 operating experience 15

SR 3.8.1.16 7 5

INSERT 36B

As required by Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(6), this Surveillance ensures that the manual synchronization and automatic load transfer from the DG to the offsite source can be made and the DG 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 DG to reload if a subsequent loss of offsite power occurs. The DG is considered to be in ready to load status when the DG 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. 1 1 5 1

individual time delay relays

24 The Frequency of 18 months is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(6), and takes into consideration unit conditions required to perform the Surveillance. INSERT 37 INSERT 38 2 1

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. This restriction from normally performing the Surveillance in MODE 1 or 2 is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite

, 3, or 4 6 1 9 1 unit 1

1

INSERT 36

based on engineering judgement, taking into consideration unit conditions required to perform the Surveillance. Operating experience has shown that these components usually pass the SR when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

15 INSERT 36A

being required in order to maintain DG reliability

1 INSERT 36B

Consistent with Regulatory Guide 1.9 (Ref. 3), paragraph C.2.2.11,

1 INSERT 37

based on engineering judgement, taking

1 INSERT 38

Operating experience has shown that these components usually pass the SR when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

BASES

SURVEILLANCE REQUIREMENTS (continued)

or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a ~~plant~~ unit shutdown and startup to determine that ~~plant~~ unit safety is maintained or enhanced when the Surveillance is performed in MODE 1 ~~or~~ 2. ,3, or 4 Risk insights or deterministic methods may be used for this assessment. INSERT 39 (1) (6) (12)

SR 3.8.1.~~17~~ 21 (5) (3)

Demonstration of the test mode override ensures that the DG availability under accident conditions will not be compromised as the result of testing and the DG will automatically reset to ready to load operation if a LOCA actuation signal is received during operation in the test mode. Ready to load operation is defined as the DG running at rated speed and voltage with the DG output breaker open. ~~These provisions for automatic switchover are required by IEEE-308 (Ref. 13), paragraph 6.2.6(2).~~ (1)

The requirement to automatically energize the emergency loads with offsite power is essentially identical to that of SR 3.8.1.~~12~~ 13. The intent in the requirement associated with SR 3.8.1.~~17~~ 21.b is to show that the emergency loading was not affected by the DG operation in test mode. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the emergency loads to perform these functions is acceptable. (5)

This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

(2) The ~~[18]~~ 24 month ~~]~~ Frequency is ~~consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(8), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.~~ INSERT 39A (1)

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required ~~offsite circuit~~ DG from service, perturb the electrical distribution system, and challenge safety systems. This restriction from normally performing the Surveillance in MODE 1 ~~or~~ 2 ,3, or 4 is further amplified to allow portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines ~~plant~~ unit (1) (6) (9)

Moved to after SR 3.8.1.20 on page B 3.8.1-32 (5)

12

INSERT 39

Credit may be taken for unplanned events that satisfy this SR.

1

INSERT 39A

based on engineering judgement, taking into consideration unit conditions required to perform the Surveillance. Operating experience has shown that these components usually pass the SR when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

(5)

BASES

Move to after SR 3.8.1.20 on page B 3.8.1-32

SURVEILLANCE REQUIREMENTS (continued)

safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant Unit (1) shutdown and startup to determine that plant unit (1) safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1, 2, 3, or 4 (6). Risk insights or deterministic methods may be used for the assessment. (12) INSERT 39B

SR 3.8.1.18

(1) INSERT 40

Under accident and loss of offsite power conditions loads are sequentially connected to the bus by the automatic load sequencer individual time delay relays (3) (2). The sequencing logic controls the permissive and starting signals to motor breakers to prevent overloading of the DGs due to high motor starting currents. The (10)% (5) load sequence time interval tolerance ensures that sufficient time exists for the DG to restore frequency and voltage prior to applying the next load and that safety analysis assumptions regarding ESF equipment time delays are not violated. (1) INSERT 41 Reference (4) 2 provides a summary of the automatic loading of ESF emergency (1) buses. (2)

(24) The Frequency of 18 months is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(2), takes INSERT 41A (1) into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths. INSERT 42 (1)

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. INSERT 43 (8)

- REVIEWER'S NOTE -

The above MODE restrictions may be deleted if it can be demonstrated to the staff, on a plant specific basis, that performing the SR with the reactor in any of the restricted MODES can satisfy the following criteria, as applicable:

a. Performance of the SR will not render any safety system or component inoperable,

(7)

12 **INSERT 39B**

Credit may be taken for unplanned events that satisfy this SR.

1 **INSERT 40**

or RATs (as applicable)

1 **INSERT 41**

and RATs to restore voltage

1 **INSERT 41A**

based on engineering judgement, taking

1 **INSERT 42**

Operating experience has shown that these components usually pass the SR when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

8 **INSERT 43**

This restriction from normally performing the Surveillance in MODE 1, 2, 3, or 4 is further amplified to allow portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines unit safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a unit shutdown and startup to determine that unit safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1, 2, 3, or 4. Risk insights or deterministic methods may be used for the assessment. Credit may be taken for unplanned events that satisfy this SR.

BASES

SURVEILLANCE REQUIREMENTS (continued)

b. Performance of the SR will not cause perturbations to any of the electrical distribution systems that could result in a challenge to steady state operation or to plant safety systems, and

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.

(7)

SR 3.8.1.19

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.

This Surveillance demonstrates the DG operation, as discussed in the (2) ~~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. (5)

(2)

(24) INSERT 44

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~~. INSERT 45 (1)

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 (3) ~~system, and challenge safety systems.~~ This restriction from normally performing the Surveillance in MODE ~~1 or 2~~ is further amplified to allow portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g. post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an (unit) ~~assessment determines plant~~ safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system

1, 2, 3, or 4 (6) (3) (1)

1 **INSERT 44**

is based on engineering judgement, taking

1 **INSERT 45**

Operating experience has shown that these components usually pass the SR when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

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BASES

SURVEILLANCE REQUIREMENTS (continued)

when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a ~~plant~~ Unit shutdown and startup to determine that ~~plant~~ safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1 ~~or~~ 2, 3, or 4. Risk insights or deterministic methods may be used for the assessment. (1) (6) (5)

Credit may be taken for unplanned events that satisfy this SR. (6)

(5) INSERT 46A

INSERT SR 3.8.1.21 from page B 3.8.1-29 and B 3.8.1-30

SR 3.8.1.~~20~~ 22 (5)

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 started simultaneously.

The 10 year Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9).

This SR is modified by a Note. The reason for the Note is to minimize wear on the DG 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.

INSERT 46 (5)

REFERENCES

1. 10 CFR 50, Appendix A, GDC 17.
2. U FSAR, ~~Chapter [8]~~ Section 8.3. (1) (2)
3. Regulatory Guide 1.9, Rev. 3.

INSERT 47 (1)

~~4. FSAR, Chapter [6].~~
5. U FSAR, Chapter ~~[15]~~ 14. (1) (2)
6. Regulatory Guide 1.93, Rev. 0, December 1974.
7. Generic Letter 84-15, "Proposed Staff Actions to Improve and Maintain Diesel Generator Reliability," July 2, 1984.
8. ~~10 CFR 50, Appendix A, GDC 18.~~ INSERT 48 (1)
9. Regulatory Guide 1.108, Rev. 1, August 1977.

5 **INSERT 46A**

SR 3.8.1.20

Demonstration of the test mode override ensures that the DG availability under accident conditions will not be compromised as the result of testing that involves connecting the DG to its test load resistor bank, and the DG will automatically reset to ready to load operation if a ESF actuation signal is received during operation in the test mode. Ready to load operation is defined as the DG running at rated speed and voltage with the DG output breaker open.

The requirement to automatically energize the emergency loads with offsite power is essentially identical to that of SR 3.8.1.13. The intent in the requirement associated with SR 3.8.1.20.b is to show that the emergency loading was not affected by the DG operation in test mode. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the emergency loads 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 24 month Frequency is based on engineering judgement, taking into consideration unit conditions required to perform the Surveillance. Operating experience has shown that these components usually pass the SR when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

This SR is modified by two Notes. Note 1 states that this Surveillance is only required to be met when the applicable DG is connected to its test load resistor bank. This is allowed since the test mode override only functions when the DG is connected to its associated test load resistor bank. When the DG is not connected to its associated test load resistor bank, the feature is not necessary; thus the Surveillance is not required to be met under this condition. The reason for Note 2 is that performing the Surveillance would remove a required DG from service, perturb the electrical distribution system, and challenge safety systems. This restriction from normally performing the Surveillance in MODE 1, 2, 3, or 4 is further amplified to allow portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines unit safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a unit shutdown and startup to determine that unit safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1, 2, 3, or 4. Risk insights or deterministic methods may be used for the assessment. Credit may be taken for unplanned events that satisfy this SR.

5

INSERT 46

SR 3.8.1.23

With the exception of this Surveillance, all other Surveillances of this Specification (SR 3.8.1.1 through SR 3.8.1.22) are applied to Unit 1 (Unit 1) and Unit 2 (Unit 2) sources. This Surveillance is provided to direct that appropriate Surveillances for the required Unit 2 (Unit 1) and Unit 1 (Unit 2) AC sources are governed by the applicable Unit 2 (Unit 1) and Unit 1 (Unit 2) Technical Specifications. Performance of the applicable Unit 2 (Unit 1) and Unit 1 (Unit 2) Surveillances will satisfy the Unit 2 (Unit 1) and Unit 1 (Unit 2) requirements as well as satisfy this Unit 1 (Unit 1) and Unit 2 (Unit 2) Surveillance Requirement. Exceptions are noted to the Unit 2 (Unit 1) and Unit 1 (Unit 2) SRs of LCO 3.8.1. SR 3.8.1.9.b is not required to be met since only one offsite circuit is required to be OPERABLE. SR 3.8.1.13, SR 3.8.1.14 (ESF actuation signal portion only), SR 3.8.1.19, SR 3.8.1.20, and SR 3.8.1.21 are not required to be met because the ESF actuation signal is not required to be OPERABLE. SR 3.8.1.18 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 3.8.1.22 is excepted because starting independence is not required with the DG(s) that is not required to be OPERABLE.

The Frequency required by the applicable Unit 2 (Unit 1) and Unit 1 (Unit 2) SR also governs performance of that SR for Unit 1 (Unit 1) and Unit 2 (Unit 2).

As noted (Note 1 to SR 3.8.1.23), if Unit 2 (Unit 1) and Unit 1 (Unit 2) is in MODE 5 or 6, or moving irradiated fuel assemblies, SR 3.8.1.3, SR 3.8.1.10 through SR 3.8.1.12, SR 3.8.1.14 through SR 3.8.1.17, and SR 3.8.1.18 are not required to be performed. This ensures that this Unit 1 (Unit 1) and Unit 2 (Unit 2) SR will not require a Unit 2 (Unit 1) and Unit 1 (Unit 2) SR to be performed, when the Unit 2 (Unit 1) and Unit 1 (Unit 2) Technical Specifications exempts performance of a Unit 2 (Unit 1) and Unit 1 (Unit 2) SR (however, as stated in the Unit 2 (Unit 1) and Unit 1 (Unit 2) SR 3.8.2.1 Note 1, while performance of an SR exempted, the SR must still be met). As noted (Note 2 to SR 3.8.1.23), SR 3.8.1.9.a is only required to be met when the auxiliary source is supplying the Unit 2 (Unit 1) and Unit 1 (Unit 2) electrical power distribution subsystem since the preferred offsite source is required to support Unit 1 (Unit 1) and Unit 2 (Unit 2) operations.

1

INSERT 47

4. UFSAR, Section 8.4.

1

INSERT 48

UFSAR, Section 1.4.7

BASES

REFERENCES (continued)

(1)

INSERT 49

10. Regulatory Guide 1.137, Rev. ~~1~~, ~~date~~. (1) October 1979 (2)

~~11~~. (2) ASME, ~~Boiler and Pressure Vessel Code, Section XI~~. INSERT 50 (1)

~~12. IEEE Standard 308-1978.~~ (1)

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1 **INSERT 49**

11. IEEE Standard 387-1995.

1 **INSERT 50**

Operation and Maintenance Standards and Guides (OM Codes)

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.1 BASES, AC SOURCES - OPERATING

1. Changes are made (additions, deletions, and/or changes) to the ISTS Bases, which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. The brackets have been removed and the proper plant specific information/value has been provided.

3. This bracketed requirement, information is deleted since it is not applicable.

4. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

5. Changes are made to reflect changes made to the Specification.

6. Changes are made to reflect the Specifications.

7. The Reviewer's Note is deleted because it is not intended to be included in the plant specific ITS submittal.

8. Changes have been made to be consistent with similar phrases in other Bases.

9. Grammatical/editorial error corrected.

10. CNP Units 1 and 2 were designed and under construction prior to the promulgation of 10 CFR 50, Appendix A. CNP Units 1 and 2 were designed and constructed to meet the intent of the proposed General Design Criteria, published in 1967. However, the CNP UFSAR contains discussions of the Plant Specific Design Criteria (PSDCs) used in the design of CNP Units 1 and 2. Bases references to the 10 CFR 50, Appendix A criteria have been replaced with references to the appropriate section of the UFSAR.

11. The description in the Bases for ISTS SR 3.8.1.13 (ITS SR 3.8.1.14) concerning the critical protective function being capable of tripping the DG has been deleted consistent with proposed TSTF-400.

12. TSTF-283, Rev. 3 was approved by the NRC on April. 13, 2000. However, when NUREG-1431, Rev. 2 was issued, this TSTF was not completely included. Therefore, changes approved by TSTF-283, Rev. 3 have been made.

13. Changes are made to be consistent with Regulatory Guide 1.9, Rev. 3 recommendations.

14. This statement has been deleted since the LCO requirements for the qualified offsite circuits are described in the fifth paragraph of the LCO Section.

15. The recommendations of the CNP DG vendor regarding tear-down inspections do not make specific adjustments in frequencies based on engine overloading. They recommend that frequencies be adjusted based on overall operating history of the machine, including consideration of engine loading. In addition, the statement concerning DG run time to achieve hot conditions is based on operating experience

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.1 BASES, AC SOURCES - OPERATING

not manufacturer recommendations. The wording of the Bases has been adjusted to reflect this.

16. The alternate qualified offsite AC source is not capable of automatically supplying the emergency buses; it must be aligned manually. Therefore, if the preferred offsite AC source and the DG are inoperable and the normal source of power is lost the associated emergency bus can only be energized manually by the alternate qualified offsite AC source. Since this operation is manual, it is appropriate to cascade to LCO 3.8.9.

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.1, AC SOURCES - OPERATING

10 CFR 50.92 EVALUATION
FOR
LESS RESTRICTIVE CHANGE L.20

Not Used.

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DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.1, AC SOURCES - OPERATING

10 CFR 50.92 EVALUATION
FOR
LESS RESTRICTIVE CHANGE L.21

CNP is converting to the Improved Technical Specifications (ITS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." The proposed change involves making the Current Technical Specifications (CTS) less restrictive. Below is the description of this less restrictive change and the determination of No Significant Hazards Considerations for conversion to NUREG-1431.

CTS 3.8.1.1 Action b specifies the compensatory actions for one inoperable DG and CTS 3.8.1.1 Action c specifies the compensatory actions for one inoperable offsite circuit and one inoperable DG. The Actions include a requirement to demonstrate the OPERABILITY of the remaining OPERABLE DG by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours, unless the absence of any potential common mode failure for the remaining DG is demonstrated. ITS 3.8.1 Required Actions B.3.1 and B.3.2 allows 12 hours to perform similar checks on the remaining OPERABLE DGs. This changes the CTS by extending the time to perform these checks from 8 hours to 12 hours.

The purpose of the above specified CTS Actions is to ensure that the other unit DG is not inoperable as a result of a similar, yet undetected, failure (i.e., due to a common mode failure). Currently, the 8 hour time limit specified is sufficient to actually perform CTS 4.8.1.1.2.a.4, a normal DG start test, on the other unit DG. However, due to the addition of the opposite unit DG requirements discussed in DOC M.2, there is a possibility that ITS 3.8.1 ACTION B will be entered due to an opposite unit DG inoperability. This could result in ITS 3.8.1 Required Action B.3.2 being required on two unit DGs. That is, the DG start test could have to be performed on two DGs. Based on Operations Department experience, it would be difficult to perform a DG start test on two DGs within the current 8 hour time limit, considering the time it normally takes to perform the test on a single DG, as well as to perform pre-evolution briefs for the operating crew and to safely transition between the DG tests. The proposed 12 hour time limit is considered a reasonable time to complete the DG start tests on two DGs. Generic Letter 84-15 identified that a 24 hour time limit was acceptable to perform these common mode failure checks. Since the 12 hour time limit being proposed is within the 24 hour limit allowed by the NRC in Generic Letter 84-15, the change is considered acceptable. In addition, the change is considered acceptable since the vast majority of DG start tests demonstrate that the DG is in fact OPERABLE.

Indiana Michigan Power Company (I&M) has evaluated whether or not a significant hazards consideration is involved with these proposed Technical Specification changes by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. **Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?**

   Response: No.

   The proposed change extends the time allowed to perform the DG common mode failure checks from 8 hours to 12 hours. This change will not affect the probability of an accident, since the DG is not considered as an initiator of an analyzed accident. The consequences of an analyzed accident will not be significantly increased since the vast majority of DG start tests demonstrate that the DG is in fact OPERABLE and the NRC has approved (in Generic Letter 84-15) up to 24 hours to demonstrate the remaining DG(s) are not inoperable due to common mode failure. Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. **Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?**

   Response: No.

   The proposed change extends the time allowed to perform the DG common mode failure checks from 8 hours to 12 hours. This change will not physically alter the plant (no new or different type of equipment will be installed). In addition, no changes will be made to the operation of the unit. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. **Does the proposed change involve a significant reduction in a margin of safety?**

   Response: No.

   The proposed change extends the time allowed to perform the DG common mode failure checks from 8 hours to 12 hours. The margin of safety is not affected by this change because the vast majority of DG start tests demonstrate that the DG is in fact OPERABLE and the NRC has approved (in Generic Letter 84-15) up to 24 hours to demonstrate the remaining DG(s) are not inoperable due to common mode failure. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, I&M concludes that the proposed change presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

ATTACHMENT 2

ITS 3.8.2, AC Sources - Shutdown

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SHUTDOWN

LIMITING CONDITION FOR OPERATION

LCO 3.8.2 — 3.8.1.2 As a minimum, the following A.C. electrical power sources shall be OPERABLE: M.1

a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and

b. One diesel generator with: M.2

SR 3.8.2.1 — 1. A day fuel tank containing a minimum of ~~70~~ 101.4 gallons of fuel, A.5

~~2. A fuel storage system containing a minimum indicated volume of 46,000 gallons of fuel, and~~ See ITS 3.8.3

~~3. A fuel transfer pump.~~ LA.1

APPLICABILITY: MODES 5 and 6. During movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 2 containment M.3

ACTION: Add proposed ACTIONS Note M.3

Add proposed ACTION A Note Add proposed Required Action A.1 A.2 L.4

ACTIONS A and B — With less than the above minimum required A.C. electrical power sources OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity ~~changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2.~~ additions that could result in loss of required SDM or boron concentration L.1

Add proposed Required Actions A.2.2 and B.2 M.3

Add proposed Required Actions A.2.4 and B.4 M.4

SURVEILLANCE REQUIREMENTS

SR 3.8.2.1 — 4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.5. L.2 L.3

Note to SR 3.8.2.1 — Add proposed SR 3.8.2.1 exceptions L.6

~~Commencing in 1999 during the extended shutdown initiated in 1997, the 18-month surveillance requirements 4.8.1.1.2.e.4.a) and b); 4.8.1.1.2.e.6.a), b) and c); 4.8.1.1.2.e.8; 4.8.1.1.2.e.9.a), b) and c); 4.8.1.1.2.e.10.a) and b); and 4.8.1.1.2.e.11, may be delayed one time until just prior to the first entry into MODE 4 following the shutdown.~~ A.3

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ITS 3.8.2

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SHUTDOWN

LIMITING CONDITION FOR OPERATION

LCO 3.8.2 3.8.1.2 As a minimum, the following A.C. electrical power sources shall be OPERABLE: M.1

a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and

b. One diesel generator with: M.2

SR 3.8.2.1 1. A day fuel tank containing a minimum of ~~70~~ 101.4 gallons of fuel, A.5

~~2. A fuel storage system containing a minimum indicated volume of 46,000 gallons of fuel, and~~ See ITS 3.8.3 L.5

~~3. A fuel transfer pump.~~ LA.1 A.4 M.3

Add proposed LCO 3.8.2.c

APPLICABILITY: MODES 5 and 6. During movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 1 containment M.3

ACTION: Add proposed ACTIONS Note

Add proposed ACTION A Note A.2

Add proposed Required Action A.1 L.4

ACTIONS A and B — With less than the above minimum required A.C. electrical power sources OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity ~~changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2~~ L.1 M.3

Add proposed Required Actions A.2.2 and B.2 additions that could result in loss of required SDM or boron concentration

Add proposed Required Actions A.2.4 and B.4 M.4

SURVEILLANCE REQUIREMENTS

SR 3.8.2.1 4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of ~~each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.5~~ L.2 L.3

Note to SR 3.8.2.1 — Add proposed SR 3.8.2.1 exceptions

~~Commencing in 1999 during the extended shutdown initiated in 1997, the 18-month surveillance requirements 4.8.1.1.2.e.4.a) and b); 4.8.1.1.2.e.6.a), b) and c); 4.8.1.1.2.e.8; 4.8.1.1.2.e.9.a), b) and c); 4.8.1.1.2.e.10.a) and b); and 4.8.1.1.2.e.11, may be delayed one time until just prior to the first entry into MODE 4 following the shutdown.~~ L.6 A.3

Add SR 3.8.2.1 for Unit 1 AC Source M.5

DISCUSSION OF CHANGES
ITS 3.8.2, AC SOURCES - SHUTDOWN

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A.2 CTS 3.8.1.2 does not address the situation when an ESF bus is de-energized as a result of the loss of an AC Source to an ESF bus. A Note has been added to the Required Actions for an inoperable offsite circuit (ITS 3.8.2 ACTION A) which requires entry into the applicable Conditions and Required Actions of LCO 3.8.10 when one required train (ESF bus) is de-energized as a result of an inoperable offsite circuit. This changes the CTS by directing entry into LCO 3.8.10.

AC Sources are considered a support system to the AC Distribution System (ITS 3.8.10). If AC Sources are inoperable such that a distribution subsystem is made inoperable, then ITS LCO 3.0.6 would allow taking only the AC Sources ACTIONS; taking exception to complying with the AC Distribution System ACTIONS. Since the AC Sources ACTIONS may not be sufficiently conservative in this event (e.g., RHR-shutdown cooling could be inoperable), specific direction to take appropriate ACTIONS for the Distribution System is added (proposed Note to ITS 3.8.2 ACTION A). This format and construction implements the existing treatment of this condition within the framework of the CNP Unit 1 and 2 CTS methods. This change is designated as administrative because it does not result in a technical change to the CTS.

A.3 CTS 4.8.1.2 allows certain 18 month Surveillance Requirements, commencing in 1999 during the extended shutdown initiated in 1997, to be delayed one time until just prior to the first entry into MODE 4 following the shutdown. ITS 3.8.2 does not include this allowance.

This allowance in CTS 4.8.1.2 has expired; therefore it will not be included in the ITS. This change is designated as administrative because it does not result in a technical change to the CTS.

A.4 (Unit 2 only) CTS 3.8.1.2.a requires one circuit between the offsite transmission network and the onsite Class 1E distribution system to be OPERABLE and CTS 3.8.1.2.b requires one DG to be OPERABLE. These two required AC Sources are Unit 2 sources. CTS 3.9.12 requires the Fuel Handling Area Exhaust Ventilation (FHAEV) System (which is powered from Unit 1 AC Sources) to be OPERABLE whenever irradiated fuel is in the storage pool. The CTS definition of "OPERABLE - OPERABILITY" includes both a normal and emergency electrical power source requirement. However, there are no specific requirements in Unit 2 CTS 3.8.1.2 requiring the Unit 1 AC Sources to be OPERABLE to support the FHAEV System. In addition, CTS 3.0.5, which provides compensatory actions when an AC Source is inoperable, is not applicable in MODES 5 and 6. Unit 2 ITS LCO 3.8.2.c requires one Unit 1

DISCUSSION OF CHANGES
ITS 3.8.2, AC SOURCES - SHUTDOWN

qualified circuit between the offsite transmission network and the Unit 1 onsite Class 1E AC electrical power distribution subsystem required by LCO 3.8.10. In addition, Unit 2 ITS 3.8.2 ACTION A also applies to an inoperable Unit 1 AC Source. This changes the Unit 2 CTS by explicitly requiring one Unit 1 offsite circuit to be OPERABLE and powering the Unit 1 equipment required to be OPERABLE, and requires the FHAEV System to be declared inoperable or to suspend movement of irradiated fuel assemblies if the Unit 1 AC Source is inoperable.

The purpose of Unit 2 ITS LCO 3.8.2.c is to ensure an AC Source is available to support required equipment. The explicit requirement for the Unit 1 AC Source is not included in Unit 2 CTS 3.8.1.2. However, based on the definition of OPERABILITY, the normal source is required to be OPERABLE to support the FHAEV System. Thus adding the explicit Unit 2 ITS LCO 3.8.2.c requirement is considered administrative since this support component is currently required to be OPERABLE in accordance with the definition of OPERABILITY. The new ACTION to declare the associated equipment inoperable or suspend movement of irradiated fuel assemblies is also administrative since this declaration is currently required by the application of the CTS (equipment is declared inoperable when the associated support equipment is inoperable). This change is designated as administrative because it does not result in a technical change to the Unit 2 CTS.

A.5 CTS LCO 3.8.1.2.b.1 requires a DG fuel day tank to contain a minimum volume of 70 gallons of fuel. ITS SR 3.8.2.1 (which references SR 3.8.1.4) requires a DG fuel day tank to contain $\geq$ 101.4 gallons of fuel oil. This changes the CTS by clarifying that the amount of fuel oil required to be stored in the DG day tank includes both the usable and unusable volumes.

The purpose of CTS LCO 3.8.1.2.b.1 is to ensure the DG has sufficient fuel oil supply to allow the DG to run at full load before one of the fuel oil transfer pumps must be started to replenish the fuel oil supply and ensure uninterrupted DG service. As stated in the CTS Bases, the 70 gallons of fuel required by CTS 3.8.1.2.b.1 is the usable volume. For clarity and for consistency with the fuel oil storage tank volume requirement, the contained volume is provided. Each day tank has 31.4 gallons of unusable volume (taking into account the geometry of the tank and a minimum submergence to suppress vortexing). Therefore, the proposed value of 101.4 gallons ensures 70 gallons of usable fuel oil in the day tank. The change is acceptable since the proposed DG fuel oil volume in each day tank will ensure at least 15 minutes of DG operation. This change is designated as administrative because the day tank volume requirements are now explicit in stating the required volume of 101.4 gallons is a contained volume.

MORE RESTRICTIVE CHANGES

M.1 CTS 3.8.1.2.a requires one circuit between the offsite transmission network and the onsite Class 1E distribution system to be OPERABLE. ITS LCO 3.8.2.a requires one qualified circuit between the offsite transmission network and the onsite Class 1E AC electrical power distribution subsystem(s) required by

LCO 3.8.10, "Distribution Systems – Shutdown," to be OPERABLE. This changes the CTS by being specific as to what the required circuit must be capable of powering.

The purpose of CTS 3.8.1.2.a is to ensure the offsite circuit is OPERABLE in order to supply the equipment supported by the onsite Class 1E distribution system. The existing requirement of CTS LCO 3.8.1.2.a for one offsite circuit to be OPERABLE during shutdown conditions is not specific as to what that circuit must be powering. The requirement in ITS LCO 3.8.2.a specifies that the circuit must be available to supply power to all equipment required to be OPERABLE in the current plant condition. This change is acceptable since the added restriction conservatively assures the needed offsite circuit is powering all AC loads required to be OPERABLE. This change is designated as more restrictive because more explicit offsite circuit requirements have been added.

M.2 CTS 3.8.1.2.b requires one DG to be OPERABLE. ITS LCO 3.8.2.b requires one DG capable of supplying one train of the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.10. This changes the CTS by being specific as to what the required DG must be capable of powering.

The purpose of CTS 3.8.1.2.b is to ensure the DG is OPERABLE. This change provides an explicit requirement as to what the required DG must be capable of powering. Similar to the added restrictions for an OPERABLE offsite circuit (refer to DOC M.1 above), the single unit DG required OPERABLE during shutdown conditions by CTS 3.8.1.2.b is not specific as to what train that DG must be associated with. The requirement in ITS LCO 3.8.2.b will ensure the OPERABLE DG is associated with one or more systems, subsystems, or components required to be OPERABLE. This added restriction enforces a level of Technical Specification control which currently is enforced only by administrative procedures. This change is designated as more restrictive because more explicit DG requirements have been added.

M.3 CTS 3.8.1.2 is applicable during MODES 5 and 6. ITS 3.8.2 is applicable in MODES 5 and 6, and during the movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment. ITS 3.8.2 Required Action A.2.2 (for an inoperable required offsite circuit) and ITS 3.8.2 Required Action B.2 (for an inoperable required DG) requires the immediate suspension of movement of irradiated fuel assemblies. In addition, a Note has been added to the ACTIONS of ITS 3.8.2 which states that LCO 3.0.3 is not applicable. This changes the CTS by requiring the AC Sources to be OPERABLE under more conditions and provides additional compensatory actions when the LCO requirements are not met.

The purpose of CTS 3.8.1.2 is to ensure that sufficient AC Sources are available to mitigate the consequences of an analyzed event during shutdown modes. This change provides an explicit requirement that the AC Sources must be OPERABLE during the movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment. The movement of irradiated fuel assemblies may occur during MODE 5 or 6, however the operations could also occur while the unit is operating. CTS 3.8.1.1 (ITS 3.8.1) and CTS 3.8.1.2 do not provide the

DISCUSSION OF CHANGES
ITS 3.8.2, AC SOURCES - SHUTDOWN

appropriate compensatory actions. The activity should be suspended immediately when the AC Sources are not available consistent with the immediate actions for CORE ALTERATIONS and positive reactivity changes. The ACTIONS Note which states that LCO 3.0.3 is not applicable is necessary because moving fuel assemblies in MODE 1, 2, 3, or 4 is independent of reactor operations; that is the actions in LCO 3.0.3 will not place the unit in a safe condition. This change is acceptable because the proposed Applicability is consistent with the Applicability in the AC Distribution System - Shutdown Specification (CTS 3.8.2.2 and ITS 3.8.10). AC Sources provides the power for the AC Distribution System. This change is designated as more restrictive because the Applicability of the Specification has been expanded.

M.4 The CTS 3.8.1.2 Action requires the suspension of CORE ALTERATIONS and certain positive reactivity changes when a required AC Source is inoperable. It does not include an action to restore the inoperable AC Source or to exit the Applicability of the Specification. ITS 3.8.2 Required Actions A.2.4 and B.4 require the immediate initiation of action to restore the required AC Source to OPERABLE status. This changes the CTS by adding explicit Required Actions to restore the inoperable AC Source to OPERABLE status.

The purpose of ITS 3.8.1.2 Required Action A.2.4 and B.4 are to place the unit within the requirements of the LCO. When a required offsite circuit or a required DG is inoperable, the actions imposed by CTS 3.8.1.2 Action a do not necessarily place the unit in a MODE or other specified condition in which CTS LCO 3.8.1.2 is not applicable. Therefore, proposed ITS 3.8.2 Required Actions A.2.4 and B.4 are being added. These Required Actions implement a requirement to immediately initiate action to restore the required AC Sources to an OPERABLE status. These additional restrictions are consistent with implicit assumptions and will ensure action is immediately taken to restore compliance with the LCO requirements. This change is designated as more restrictive because the Required Actions do not exist in the CTS.

M.5 (Unit 2 only) CTS 3.8.1.2.a requires one circuit between the offsite transmission network and the onsite Class 1E distribution system to be OPERABLE and CTS 3.8.1.2.b requires one DG to be OPERABLE. These two required AC Sources are Unit 2 sources. CTS 3.9.12 requires the Fuel Handling Area Exhaust Ventilation (FHAEV) System (which is powered from Unit 1 AC Sources) to be OPERABLE whenever irradiated fuel is in the storage pool. The CTS definition of "OPERABLE - OPERABILITY" includes both a normal and emergency electrical power source requirement. However, there are no specific requirements in Unit 2 CTS 3.8.1.2 requiring the testing of the Unit 1 AC Sources that support the FHAEV System. Unit 2 ITS LCO 3.8.2.c requires one Unit 1 qualified circuit between the offsite transmission network and the Unit 1 onsite Class 1E AC electrical power distribution subsystem required by LCO 3.8.10. This change is discussed in DOC A.4. An explicit SR (ITS SR 3.8.2.1) has been added which requires the applicable SRs of ITS 3.8.1, "AC Sources - Operating," to be applicable to each AC source required to be OPERABLE. This changes the Unit 2 CTS by explicitly requiring Surveillance Requirements for the Unit 1 AC Source required to be OPERABLE to support Unit 2 operation.

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DISCUSSION OF CHANGES
ITS 3.8.2, AC SOURCES - SHUTDOWN

The purpose of Surveillance Requirements is to ensure the OPERABILITY of required equipment. An explicit SR (ITS SR 3.8.2.1) has been added which requires the applicable SRs of ITS 3.8.1 to be applicable to the Unit 1 AC Source required to be OPERABLE for Unit 2 operation. The added Surveillance helps to ensure the required Unit 1 qualified circuit remains OPERABLE. This change is designated as more restrictive because additional Surveillance Requirements will be applicable to the Unit 2 Technical Specifications.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.8.1.2.b specifies that a DG be OPERABLE with a fuel transfer pump. ITS LCO 3.8.2.b requires an OPERABLE DG capable of supplying one train of the onsite Class 1E power distribution subsystem(s). This changes the CTS by moving the details that an OPERABLE DG requires "a fuel transfer pump" from the CTS to the Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirements for an OPERABLE DG and that the fuel oil transfer system operates automatically to transfer fuel oil from the storage tank to the day tank. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L.1 *(Category 4 – Relaxation of Required Action)* The CTS 3.8.1.2 Action specifies the compensatory action for an inoperable required AC Source. One of the compensatory actions is the suspension of positive reactivity "changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2." ITS 3.8.2 Required Action A.2.3 (for an inoperable required offsite circuit) or Required Action B.3 (for an inoperable required DG) require the immediate suspension of operations involving positive reactivity "additions that could result in loss of required SDM or boron concentration." This changes the CTS compensatory actions by deleting the limitation on the heatup and cooldown rates of 50°F or less in any one hour period in MODE 5 and allows the addition of water from any source including the RWST as long as SDM and boron concentration limitations are met.

The purpose of this CTS 3.8.1.2 Action is to suspend any positive reactivity additions that could affect the SDM of the reactor core. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the affected redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the repair period. The CTS allows two types of positive reactivity changes (heatup/cooldown and addition of water). Heatup and cooldown of the reactor coolant volume are allowed provided SDM is sufficient to accommodate the change in temperature in accordance with CTS 3.1.1.2 in MODE 5 or CTS 3.9.1 in MODE 6. The requirements of these Specifications are included in ITS LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," and ITS LCO 3.9.1, "Boron Concentration," respectively. Therefore, there is no technical change in this portion of the change. The Bases provides the appropriate cross reference to the appropriate LCOs. The CTS also allows positive reactivity changes by the addition of water from the RWST provided the boron concentration in the RWST is greater than or equal to the minimum required by CTS 3.1.2.7.b.2. CTS 3.1.2.7.b.2 has been relocated to the TRM as indicated in the Discussion of Changes for CTS LCO 3/4.1.2.7. CTS 3/4.1.2.7 is applicable during MODE 5 and 6 operations. The proposed Required Actions require the suspension of operations involving positive reactivity additions that could result in loss of required SDM or boron concentration. The requirements for SDM are specified in ITS LCO 3.1.1 while the requirements for boron concentration are specified in ITS LCO 3.9.1. The current and proposed actions may result in an overall reduction in SDM or RCS boron concentration, but provide acceptable margin to maintaining subcritical operation. The CTS compensatory action restricted the heatup and cooldown rates of the RCS to 50°F or less in any one hour period in MODE 5. This limitation has been deleted, since the rate of SDM change is not germane provided SDM is not lost. The proposed Required Action is to suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration. These limitations are considered acceptable. The Bases also indicate that introduction of temperature changes including temperature increases when operating with a positive moderator temperature coefficient must be evaluated to ensure they do not result in a loss of required SDM. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.2 *(Category 7 – Relaxation Of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.8.1.2 requires the AC electrical power sources to be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of CTS 4.8.1.1.1 and CTS 4.8.1.1.2 except for requirement

DISCUSSION OF CHANGES
ITS 3.8.2, AC SOURCES - SHUTDOWN

CTS 4.8.1.1.2.a.5. ITS SR 3.8.2.1 has included this allowance in the Note to SR 3.8.2.1 (it exempts performance of ITS SR 3.8.1.3), however additional SRs are excepted from being performed. ITS SR 3.8.2.1 states that the following SRs are also not required to be performed: SR 3.8.1.10 through SR 3.8.1.12, SR 3.8.1.15 through SR 3.8.1.17, and SR 3.8.1.18. This changes the CTS by not requiring the performance of additional AC Source Surveillances.

The purpose of CTS 4.8.1.2 is to ensure the appropriate AC Sources are demonstrated to be OPERABLE. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. CTS 4.8.1.2 does not require CTS 4.8.1.1.2.a.5 to be performed (however, it must be met). Many of the currently required Surveillances specified in CTS 4.8.1.2 involve tests that would require the DG to be paralleled to offsite power. This condition (the only required DG and the only required offsite circuit connected) presents a significant risk of a single fault resulting in a station blackout. The NRC has previously recognized this in the exception stated in CTS 4.8.1.2 (4.8.1.1.2.a.5) and provided a Surveillance exception to the 1 hour DG load test to avoid this condition. In an effort to consistently address this concern and to avoid potential conflicting Technical Specifications, the Surveillances that would require the DG to be connected to the offsite source or would require disconnection of the required offsite circuit and deenergization of required buses are excepted from performance requirements. The exception does not take exception to the requirement for the DG to be capable of performing the particular function; just to the requirement to demonstrate it while that source of power is being relied on to support meeting the LCO. The exception is being presented as a Note to ITS SR 3.8.2.1. The excluded Surveillances are CTS 4.8.1.1.2.a.5 (ITS SR 3.8.1.3), the DG 1 hour load test, CTS 4.8.1.1.2.e.2 (ITS SR 3.8.1.10), the single largest load reject test, CTS 4.8.1.1.2.e.3 (ITS SR 3.8.1.11), the full load rejection test, CTS 4.8.1.1.2.e.4 (ITS SR 3.8.1.12), the simulated loss of offsite power test, CTS 4.8.1.1.2.e.7 (ITS SR 3.8.1.15), the 8 hour endurance run, CTS 4.8.1.1.2.e.7 (ITS SR 3.8.1.16), the hot re-start test, CTS 4.8.1.1.2.e.9 (ITS SR 3.8.1.17), the DG synchronization test, and CTS 4.8.1.1.2.e.11 (ITS SR 3.8.1.18), the DG automatic sequence time delay relay test. This change is acceptable since 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. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.3 *(Category 6 - Deletion Of Surveillance Requirements)* CTS 4.8.1.2 requires the AC electrical power sources to be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.5. ITS SR 3.8.2.1 has included this allowance in the Note to SR 3.8.2.1 (see DOC L.2). However, additional ITS SRs are excepted from being required to be met. ITS SR 3.8.2.1 states, in part, that the following SRs are not required to be met: SR 3.8.1.9 and SR 3.8.1.22. This changes the CTS by not requiring certain Surveillances to be met. Further changes to CTS 3.8.1.2 are discussed in DOC L.6.

DISCUSSION OF CHANGES
ITS 3.8.2, AC SOURCES - SHUTDOWN

The purpose of CTS 4.8.1.2 is to ensure the appropriate AC Sources are demonstrated to be OPERABLE. This change is acceptable because the deleted Surveillance Requirements are not necessary to verify that the equipment used to meet the LCO can perform its required functions. Thus, appropriate equipment continues to be tested in a manner and at a Frequency necessary to give confidence that the equipment can perform its assumed safety function. This change deletes certain Surveillances from being required to be met. These Surveillances are CTS 4.8.1.1.1.b (ITS SR 3.8.1.9), the offsite source transfer verification test, and CTS 4.8.1.1.2.f.3 (ITS SR 3.8.1.22), the DG simultaneous start test. SR 3.8.1.9 is not required to be met since the auxiliary source cannot power the Class 1E electrical power distribution subsystems in these conditions and since only one offsite circuit is required to be OPERABLE. SR 3.8.1.22 is excepted because starting independence is not required with only one DG required to be OPERABLE. This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

L.4 *(Category 4 – Relaxation of Required Action)* The CTS 3.8.1.2 Action requires the suspension of certain activities when the required AC Source is inoperable. ITS 3.8.2 provides an alternate Required Action (ITS 3.8.2 Required Action A.1) that allows the declaration of affected required feature(s) with no offsite power available inoperable instead of requiring the specified activities to be suspended. This changes the CTS by allowing the affected required feature(s) with no offsite power available to be declared inoperable instead of suspending the specified activities.

The purpose of CTS 3.8.1.2 is to ensure the appropriate offsite circuit is OPERABLE. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a loss of offsite power occurring during the repair period. This changes the CTS by allowing the affected required feature(s) with no offsite power available to be declared inoperable instead of suspending specified activities (i.e., CORE ALTERATIONS, movement of irradiated fuel assemblies, and operations involving positive reactivity additions that could result in loss of required SDM or boron concentration). Since the ITS 3.8.2 circuit OPERABILITY requirements are proposed to require supplying power to all required electrical power distribution subsystems, if one or more subsystems are not powered by an offsite circuit, that circuit is inoperable. In this event it may not be necessary to suspend all CORE ALTERATIONS, irradiated fuel handling, and operations involving positive reactivity additions that could result in loss of required SDM or boron concentration as required by CTS 3.8.1.2 Action (and as modified by DOC L.1). Conservative actions can be assured if all required equipment without offsite power is declared inoperable and the associated ACTIONS of the individual equipment taken (ITS 3.8.2 Required Action A.1). This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

DISCUSSION OF CHANGES
ITS 3.8.2, AC SOURCES - SHUTDOWN

L.5 *(Category 1 – Relaxation of LCO Requirements)* (Unit 2 only) CTS 3.8.1.2.a requires one circuit between the offsite transmission network and the onsite Class 1E distribution system to be OPERABLE and CTS 3.8.1.2.b requires one DG to be OPERABLE. These two required AC Sources are Unit 2 sources. CTS 3.9.12 requires the Fuel Handling Area Exhaust Ventilation (FHAEV) System (which is powered from Unit 1 AC Sources) to be OPERABLE whenever irradiated fuel is in the storage pool. The CTS definition of "OPERABLE - OPERABILITY" includes both a normal and emergency electrical power source requirement. However, there are no specific requirements in Unit 2 CTS 3.8.1.2 requiring the Unit 1 AC Sources to be OPERABLE to support the FHAEV System. In addition, CTS 3.0.5, which provides compensatory actions when an AC Source is inoperable, is not applicable in MODES 5 and 6. Unit 2 ITS LCO 3.8.2.c requires one Unit 1 qualified circuit between the offsite transmission network and the Unit 1 onsite Class 1E AC electrical power distribution subsystem required by LCO 3.8.10. This changes the Unit 2 CTS by explicitly requiring only one Unit 1 AC Source (the offsite source) associated with the Unit 1 equipment required to be OPERABLE to support Unit 2 operation.

The purpose of Unit 2 ITS LCO 3.8.2.c is to ensure an AC Source is available to support required equipment. This change is acceptable because the LCO requirements continue to ensure that the structures, systems, and components are maintained consistent with the safety analyses and licensing basis. The explicit requirements for AC Sources of the Unit 1 sources are not included in CTS 3.8.1.2 for Unit 2. However, based on the definition of OPERABILITY, both the normal and emergency sources are required to be OPERABLE to support the FHAEV System. Thus, deleting the explicit requirement that a DG is OPERABLE is less restrictive since currently one is required. In general, when the unit is shutdown, 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. This change is acceptable since 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. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

L.6 CTS 4.8.1.2 requires the AC electrical power sources to be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.5. ITS SR 3.8.2.1 has included this allowance in the Note to SR 3.8.2.1 (see DOC L.2). However, additional ITS SRs are excepted from being required to be met. ITS SR 3.8.2.1 states, in part, that the following SRs are not required to be met: SR 3.8.1.13, SR 3.8.1.14 (ESF actuation signal portion only), SR 3.8.1.19, SR 3.8.1.20, and SR 3.8.1.21. This changes the CTS by not requiring certain Surveillances to be met. Further changes to CTS 3.8.1.2 are discussed in DOC L.3.

DISCUSSION OF CHANGES
ITS 3.8.2, AC SOURCES - SHUTDOWN

The purpose of CTS 4.8.1.2 is to ensure the appropriate AC Sources are demonstrated to be OPERABLE. This change is acceptable because the deleted Surveillance Requirements are not necessary to verify that the equipment used to meet the LCO can perform its required functions. Thus, appropriate equipment continues to be tested in a manner and at a Frequency necessary to give confidence that the equipment can perform its assumed safety function. This change deletes certain Surveillances from being required to be met. These Surveillances are CTS 4.8.1.1.2.e.5 (ITS SR 3.8.1.13), the Safety Injection actuation test, CTS 4.8.1.1.2.e.6.c (ITS SR 3.8.1.14), the bypass of automatic trips test (ESF actuation signal portion only), CTS 4.8.1.1.2.e.6 (ITS SR 3.8.1.19), the loss of offsite power in conjunction with a Safety Injection actuation test, and CTS 4.8.1.1.2.e.10 (ITS SR 3.8.1.20), the DG test mode override on a Safety Injection signal test. SR 3.8.1.13, SR 3.8.1.14 (ESF actuation signal portion only), SR 3.8.1.19, and SR 3.8.1.20 are not required to be met because the ESF actuation signal is not required to be OPERABLE, as indicated in the Surveillance Requirements in ITS 3.3.2. The CTS and ITS also do not require the ECCS subsystem(s) to be OPERABLE in MODES 5 and 6. The DGs are required to support the equipment powered from the emergency buses. However, when the ECCS subsystem(s) are not required to be OPERABLE, then there is no reason to require the DGs to autostart on an ESF initiation signal. In addition, the ESF actuation signal is only an anticipatory start signal; the DGs are only needed during a LOCA if a loss of offsite power occurs concurrently. The DGs are also required to autostart if a loss of offsite power occurs. The requirement to autostart the required DG(s) on a loss of offsite power signal is being maintained in the ITS (ITS SR 3.8.1.12). Thus, when in these conditions (associated ECCS subsystem(s) not required to be OPERABLE), there is no reason to require the DGs to be capable of automatically starting on an ESF actuation signal (either by itself or concurrent with a loss of offsite power signal). ITS SR 3.8.1.21 is also not required to be met. This test was added to AC Sources-Operating and requires the DG test mode to override when the DG is connected to the emergency bus on a Safety Injection signal test. This test is not required to be met because the ESF actuation signal is not required t be OPERABLE. Since ITS SR 3.8.1.21 is a new test not requiring it to be met is considered an administrative change and is discussed here for convenience. This change is designated as less restrictive because Surveillance Requirements have been deleted from the CTS.

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Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

CTS

3.8 ELECTRICAL POWER SYSTEMS

3.8.2 AC Sources - Shutdown

3.8.1.2 LCO 3.8.2 The following AC electrical power sources shall be OPERABLE:

a. One qualified circuit between the offsite transmission network and the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems - Shutdown"; ~~and~~ (;) ⟨Unit 2 only⟩ (1)

b. One diesel generator (DG) capable of supplying one train of the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.10. ~~or~~ (; and) ⟨Unit 2 only⟩ (1)

INSERT 1 (2)

(3)

DOC M.3 APPLICABILITY: MODES 5 and 6,
During movement of ~~(recently)~~ irradiated fuel assemblies. ⟨Unit 2 only⟩ INSERT 1A (7)

ACTIONS

DOC M.3

- NOTE -
LCO 3.0.3 is not applicable.

Action

(4)

(2)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ~~One~~ required offsite circuit inoperable. (or more) ⟨Unit 2 only⟩ ⟨Unit 1 only⟩ (s) ⟨Unit 2 only⟩	- NOTE - Enter applicable Conditions and Required Actions of LCO 3.8.10, with one required train de-energized as a result of Condition A.	
	A.1 Declare affected required feature(s) with no offsite power available inoperable.	Immediately
	OR	

2

INSERT 1
(Unit 2 only)

DOC A.4 c. One Unit 1 qualified circuit between the offsite transmission network and the Unit 1 onsite Class 1E AC electrical power distribution subsystem required by LCO 3.8.10.

7

INSERT 1A

in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

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CTS

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
Action		A.2.1 Suspend CORE ALTERATIONS.	Immediately	
		AND		
		A.2.2 Suspend movement of [recently] irradiated fuel assemblies.	Immediately	3
		AND		
		A.2.3 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately	
		AND		
<Unit 2 only>	(5)	A.2.4 Initiate action to restore required offsite ~~power~~ circuit(s) to OPERABLE status.	Immediately	2
Action	B. ~~One~~ required DG inoperable.	B.1 Suspend CORE ALTERATIONS.	Immediately	4 2
		AND		
		B.2 Suspend movement of [recently] irradiated fuel assemblies.	Immediately	3
		AND		
		B.3 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately	
		AND		

CTS

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
	B.4	Initiate action to restore required DG to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.2.1	- NOTES - 1. The following SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.9 through SR 3.8.1.11, SR 3.8.1.13 through SR 3.8.1.16, SR 3.8.1.18, and SR 3.8.1.19. 2. SR 3.8.1.12 and SR 3.8.1.19 are not required to be met when associated ECCS subsystems(s) are not required to be OPERABLE per LCO 3.5.3, "ECCS-Shutdown." For AC sources required to be OPERABLE, the SRs of Specification 3.8.1, "AC Sources - Operating," except SR 3.8.1.8, SR 3.8.1.17, and SR 3.8.1.20, are applicable.	In accordance with applicable SRs

4.8.1.2

SR 3.8.1.14 (ESF actuation signal portion only)

15 10 17 and 12 5 5 5 6 5 2 3 5 5 6 9 22 6

SR 3.8.1.13

SR 3.8.1.19,

SR 3.8.1.20, SR 3.8.1.21,

5 6

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JUSTIFICATION FOR DEVIATIONS
ITS 3.8.2, AC SOURCES - SHUTDOWN

1. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

2. An additional requirement has been added to ISTS LCO 3.8.2 for Unit 2 to ensure the appropriate AC Source is OPERABLE during the movement of irradiated fuel assemblies in the auxiliary building. The new requirement was added as LCO 3.8.2.c. This modification was necessary since the Fuel Handling Area Exhaust Ventilation (FHAEV) System is supplied by Unit 1 AC Sources. In addition, ITS 3.8.2 ACTION A for Unit 2 has been modified to reflect this change.

3. The brackets are removed and the proper plant specific information/value is provided.

4. Since only one circuit and one DG are required, the term "One" is redundant and has been deleted, consistent with other similar Conditions in the ISTS (e.g., ISTS 3.5.3).

5. These changes have been included consistent with proposed TSTF-433, Rev. 0. In addition, ISTS SR 3.8.1.13 (ITS SR 3.8.1.14) has been deleted from Note 1 to SR 3.8.2.1 and added to those Surveillances not required to be met. ISTS SR 3.8.1.13 (ITS SR 3.8.1.14) is the verification that the DG's automatic trips are bypassed on an actual or simulated loss of voltage signal on the emergency bus or an actual or simulated ESF actuation signal. The ESF actuation signal portion of this Surveillance is not required to be met because the ESF actuation signal is not required to be OPERABLE. This change is consistent with the technical analysis for TSTF-433 modifications.

6. The SRs have been changed to be consistent with the changes made to the Surveillance Requirements in ITS 3.8.1.

7. The Applicability has been clarified since CNP has two units, and irradiated fuel movement can occur in three different locations.

Improved Standard Technical Specifications (ISTS) Bases Markup and Justification for Deviations (JFDs)

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 and during movement of ~~recently~~ irradiated fuel assemblies, INSERT 1 ensures that: (1) (3)

a. The unit can be maintained in the shutdown or refueling condition for extended periods; (2)

b. Sufficient instrumentation and control capability is available for monitoring and maintaining the unit status; and (2)

c. Adequate AC electrical power is provided to mitigate events postulated during shutdown, such as a fuel handling accident. ~~involving handling recently irradiated fuel. Due to radioactive decay, AC electrical power is only required to mitigate fuel handling accidents involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [ ] days)].~~ (1) (3)

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

3 **INSERT 1**

in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

BASES

APPLICABLE SAFETY ANALYSES (continued)

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.

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. – Shutdown

The AC sources satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii). ies (4) Unit 2 only

LCO Unit 2 only

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 DG, 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 (5) and DG 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 (e.g., fuel handling accidents involving handling recently irradiated fuel). most of the (4) (3) (3) Unit 2 only (1)

INSERT 2 (3) Unit 2 only

The qualified offsite circuit (6) must be capable of maintaining rated frequency and voltage, and accepting required loads during an accident, (3)

3

INSERT 2
(Unit 2 only)

In addition, to ensure the remainder of the loads are powered from offsite power, one Unit 1 qualified circuit is required between the offsite transmission network and the Unit 1 onsite Class 1E AC electrical power distribution subsystem required to be OPERABLE by LCO 3.8.10. This will ensure that Unit 2 will have sufficient offsite power to support the Fuel Handling Area Exhaust Ventilation (FHAEV) System since this system is supplied by Unit 1 AC sources.

BASES

LCO (continued)

while connected to the Engineered Safety Feature (ESF) bus(es). Qualified offsite circuits are those that are described in the FSAR and are part of the licensing basis for the unit. (4) emergency (12)

[Offsite circuit #1 consists of Safeguards Transformer B, which is supplied from Switchyard Bus B, and is fed through breaker 52-3 powering the ESF transformer XNB01, which, in turn, powers the #1 ESF bus through its normal feeder breaker. The second offsite circuit consists of the Startup Transformer, which is normally fed from the Switchyard Bus A, and is fed through breaker PA 0201 powering the ESF transformer, which, in turn, powers the #2 ESF bus through its normal feeder breaker.] INSERT 3 (1)

(3) required (3)

The DG 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 DG 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 DG in standby with the engine hot and DG in standby at ambient conditions. emergency (4) (1) INSERT 4 (5)

Proper sequencing of loads, including tripping of nonessential loads, is a required function for DG OPERABILITY. INSERT 5 (4)

[In addition, proper sequencer operation is an integral part of offsite circuit OPERABILITY since its inoperability impacts on the ability to start and maintain energized loads required OPERABLE by LCO 3.8.10.] (1)

It is acceptable for trains to be cross tied during shutdown conditions, allowing a single offsite power circuit to supply all required trains. (11) INSERT 6 (3) <Unit 2 only>

APPLICABILITY

The AC sources required to be OPERABLE in MODES 5 and 6 and during movement of (recently) irradiated fuel assemblies provide assurance that: (1) INSERT 7 (3)

a. Systems to provide adequate coolant inventory makeup are available for the irradiated fuel assemblies in the core; (2)

b. Systems needed to mitigate a fuel handling accident [involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [ ] days)] are available; (1) (2)

1

INSERT 3
(Unit 1 only)

The preferred qualified offsite circuit consists of reserve auxiliary transformers (RATs) TR101CD and TR101AB, as applicable, the cabling and breakers to the required 4.16 kV buses 1A, 1B, 1C, and 1D, the required 4.16 kV buses 1A, 1B, 1C, and 1D, and the cabling and breakers to the required 4.16 kV emergency buses T11A, T11B, T11C, and T11D. The alternate qualified offsite circuit consists of transformer TR12EP-1 or TR12EP-2, the cabling and switches to 4.16 kV bus 1 (and bus 2, if TR12EP-2 is used), and the cabling, switches, and breakers to the required 4.16 kV emergency buses T11A, T11B, T11C, and T11D.

1

INSERT 3
(Unit 2 only)

The preferred qualified offsite circuit consists of reserve auxiliary transformers (RATs) TR201CD and TR201AB, as applicable, the cabling and breakers to the required 4.16 kV buses 2A, 2B, 2C, and 2D, the required 4.16 kV buses 2A, 2B, 2C, and 2D, and the cabling and breakers to the required 4.16 kV emergency buses T21A, T21B, T21C, and T21D. The alternate qualified offsite circuit consists of transformer TR12EP-1 or TR12EP-2, the cabling and switches to 4.16 kV bus 1 (and bus 2, if TR12EP-2 is used), and the cabling, switches, and breakers to the required 4.16 kV emergency buses T21A, T21B, T21C, and T21D.

5

INSERT 4

Additional DG capabilities must be demonstrated to meet required Surveillances, e.g., capability of the DG to reject a load equivalent to its associated single largest post-accident load.

4

INSERT 5

The necessary portions of the Essential Service Water System and Ultimate Heat Sink capable of providing cooling to the required DG are also required.

3

INSERT 6
(Unit 2 only)

Additionally, unit's electrical sources must include electrical sources from Unit 1 that is required to support the FHAEV System when handling fuel in the auxiliary building. Either the preferred or alternate Unit 1 source is required. The preferred qualified offsite circuit is supplied via RAT TR101CD and RAT TR101AB. A 34.5 kV line supplies RAT TR101CD and RAT TR101AB. RAT TR101CD supplies the Train A 4.16 kV bus T11D via bus 1D. The preferred offsite circuit extends to Train A 600 V bus 11D since an FHAEV fan is supplied from this bus. RAT TR101AB supplies the Train B 4.16 kV bus T11A via bus 1A. The preferred offsite circuit extends to Train B 600 V bus 11A since an FHAEV fan is supplied from this circuit. A 69 kV line supplies the alternate qualified offsite circuit. The 69 kV line supplies transformer TR12EP-1 which can be manually aligned to directly supply Train A 4.16 kV bus T11D and Train B 4.16 kV bus T11A. The alternate offsite source is also required to supply the associated 600 V AC bus.

3

INSERT 7

in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

BASES

APPLICABILITY (continued)

c. Systems necessary to mitigate the effects of events that can lead to core damage during shutdown are available, and (1) (2)

d. 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.

ACTIONS

LCO 3.0.3 is not applicable while in MODE 5 or 6. However, since irradiated fuel assembly movement can occur in MODE 1, 2, 3, or 4, the ACTIONS have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 5 or 6, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, 3, or 4, the fuel movement is independent of reactor operations. Entering LCO 3.0.3, while in MODE 1, 2, 3, or 4 would require the unit to be shutdown unnecessarily.

A.1

If

An offsite circuit would be considered inoperable if it were not available to one required ESF train. Although two trains are required by LCO 3.8.10, the one train with offsite power available may be capable of supporting sufficient required features to allow continuation of CORE ALTERATIONS and recently irradiated fuel movement. By the allowance of the option to declare required features inoperable, with no offsite power available, appropriate restrictions will be implemented in accordance with the affected required features LCO's ACTIONS. (5) (1)

<Unit 2 only> (5)

A.2.1, A.2.2, A.2.3, A.2.4, B.1, B.2, B.3, and B.4

(6) required

With the offsite circuit not available to all required trains, the option would still exist to declare all required features inoperable. Since this option may involve undesired administrative efforts, the allowance for sufficiently conservative actions is made. With the required DG inoperable, the minimum required diversity of AC power sources is not available. It is, therefore, required to suspend CORE ALTERATIONS, movement of recently irradiated fuel assemblies, and operations involving positive reactivity additions that could result in loss of required SDM (Mode 5) or boron concentration (Mode 6). ~~Suspending positive reactivity additions that could result in failure to meet the minimum SDM or boron concentration limit is required to assure continued safe operation.~~ (3) (1) (6)

(5) INSERT 9

INSERT 8 (5)

5 **INSERT 8**

specified in LCO 3.1.1, "SHUTDOWN MARGIN (SDM),"

5 **INSERT 9**

specified in LCO 3.9.1, "Boron Concentration."

BASES

ACTIONS (continued)

Introduction of coolant inventory must be from sources that have a boron concentration greater than that what would be required in the RCS for minimum SDM or refueling boron concentration. This may result in an overall reduction in RCS boron concentration, but provides acceptable margin to maintaining subcritical operation. Introduction of temperature changes including temperature increases when operating with a positive (MTC) must also be evaluated to ensure they do not result in a loss of required SDM. (7)

moderator temperature coefficient

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.

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. (8) (4)

emergency

SURVEILLANCE REQUIREMENTS

SR 3.8.2.1

(9) (3)

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.

INSERT 10 (5)

(9) to be applicable

(4)

(22) (3)

(10) INSERT 11

INSERT from page B 3.8.2-6 (9)

5

INSERT 10

the auxiliary source cannot power the Class 1E electrical power distribution subsystems in these conditions and since

3 10

INSERT 11

3

13

14 (ESF actuation signal portion only)

SR 3.8.1.12, SR 3.8.1.13, SR 3.8.1.19, SR 3.8.1.20, and SR 3.8.1.21 are not required to be met because the ESF actuation signal is not required to be OPERABLE.

BASES

SURVEILLANCE REQUIREMENTS (continued)

a the Note (10)

This SR is modified by ~~two~~ Note~~s~~. The reason for ~~Note 1~~ is to preclude requiring the OPERABLE DG(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. Refer to the corresponding Bases for LCO 3.8.1 for a discussion of each SR. ~~Note 2 states that SRs 3.8.1.12 and 3.8.1.19 are not required to be met when its associated ECCS subsystem(s) are not required to be OPERABLE. These SRs demonstrate the DG response to an ECCS signal (either alone or in conjunction with a loss-of-power signal). This is consistent with the ECCS instrumentation requirements that do not require the ECCS signals when the ECCS System is not required to be OPERABLE per LCO 3.5.3, "ECCS-Shutdown."~~ (9) (10)

emergency (8) (4)

(9) move to page B 3.8.2-5 as indicated

REFERENCES None.

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.2 BASES, AC SOURCES - SHUTDOWN

1. The brackets have been removed and the proper plant specific information/value has been provided.

2. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

3. Changes are made to the Bases to reflect changes made to the Specification.

4. Changes are made (additions, deletions, and/or changes) to the ISTS Bases, which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

5. Changes are made to reflect the actual Specification.

6. Changes are made to be consistent with other places in the Bases and Specifications.

7. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 3.2.2.

8. Spelling/grammatical error corrected.

9. Editorial change made for enhanced clarity.

10. These changes are made to reflect the modifications in proposed TSTF-433, Rev. 0.

11. This statement is discussing the cross-tying of distribution buses and is not applicable to this AC Sources Specification. Therefore it has been deleted. This allowance has been described in the Bases for ITS LCO 3.8.10, "Distribution Systems - Shutdown."

12. This statement has been deleted since the LCO requirements for the qualified offsite circuits are described in the next paragraph of the LCO Section.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.2, AC SOURCES - SHUTDOWN

10 CFR 50.92 EVALUATION
FOR
LESS RESTRICTIVE CHANGE L.6

CNP is converting to the Improved Technical Specifications (ITS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." The proposed change involves making the Current Technical Specifications (CTS) less restrictive. Below is the description of this less restrictive change and the determination of No Significant Hazards Considerations for conversion to NUREG-1431.

CTS 4.8.1.2 requires the AC electrical power sources to be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.5. ITS SR 3.8.2.1 has included this allowance in the Note to SR 3.8.2.1. However, additional ITS SRs are excepted from being required to be met. ITS SR 3.8.2.1 states, in part, that the following SRs are not required to be met: SR 3.8.1.13, SR 3.8.1.14 (ESF actuation signal portion only), SR 3.8.1.19, and SR 3.8.1.20. This changes the CTS by not requiring certain Surveillances to be met. Further changes to CTS 3.8.1.2 are discussed in DOC L.3.

The purpose of CTS 4.8.1.2 is to ensure the appropriate AC Sources are demonstrated to be OPERABLE. This change is acceptable because the deleted Surveillance Requirements are not necessary to verify that the equipment used to meet the LCO can perform its required functions. Thus, appropriate equipment continues to be tested in a manner and at a Frequency necessary to give confidence that the equipment can perform its assumed safety function. This change deletes certain Surveillances from being required to be met. These Surveillances are CTS 4.8.1.1.2.e.5 (ITS SR 3.8.1.13), the Safety Injection actuation test, CTS 4.8.1.1.2.e.6.c (ITS SR 3.8.1.14), the bypass of automatic trips test (ESF actuation signal portion only), CTS 4.8.1.1.2.e.6 (ITS SR 3.8.1.19), the loss of offsite power in conjunction with a Safety Injection actuation test, and CTS 4.8.1.1.2.e.10 (ITS SR 3.8.1.20), the DG test mode override on a Safety Injection signal test. SR 3.8.1.13, SR 3.8.1.14 (ESF actuation signal portion only), SR 3.8.1.19, and SR 3.8.1.20 are not required to be met because the ESF actuation signal is not required to be OPERABLE, as indicated in the Surveillance Requirements in ITS 3.3.2. The CTS and ITS also do not require the ECCS subsystem(s) to be OPERABLE in MODES 5 and 6. The DGs are required to support the equipment powered from the emergency buses. However, when the ECCS subsystem(s) are not required to be OPERABLE, then there is no reason to require the DGs to autostart on an ESF initiation signal. In addition, the ESF actuation signal is only an anticipatory start signal; the DGs are only needed during a LOCA if a loss of offsite power occurs concurrently. The DGs are also required to autostart if a loss of offsite power occurs. The requirement to autostart the required DG(s) on a loss of offsite power signal is being maintained in the ITS (ITS SR 3.8.1.12). Thus, when in these conditions (associated ECCS subsystem(s) not required to be OPERABLE), there is no reason to require the DGs to be capable of automatically starting on an ESF actuation signal (either by itself or concurrent with a loss of offsite power signal).

Indiana Michigan Power Company (I&M) has evaluated whether or not a significant hazards consideration is involved with these proposed Technical Specification changes by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

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DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.2, AC SOURCES - SHUTDOWN

1. **Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?**

   Response: No.

   The proposed change deletes certain Surveillances from being required to be met. These Surveillances are CTS 4.8.1.1.2.e.5 (ITS SR 3.8.1.13), the Safety Injection actuation test, CTS 4.8.1.1.2.e.6.c (ITS SR 3.8.1.14), the bypass of automatic trips test (ESF actuation signal portion only), CTS 4.8.1.1.2.e.6 (ITS SR 3.8.1.19), the loss of offsite power in conjunction with a Safety Injection actuation test, and CTS 4.8.1.1.2.e.10 (ITS SR 3.8.1.20), the DG test mode override on a Safety Injection signal test. SR 3.8.1.13, SR 3.8.1.14 (ESF actuation signal portion only), SR 3.8.1.19, and SR 3.8.1.20 are not required to be met because the ESF actuation signal is not required to be OPERABLE, as indicated in the Surveillance Requirements in ITS 3.3.2. The CTS and ITS also do not require the ECCS subsystem(s) to be OPERABLE in MODES 5 and 6. The DGs are required to support the equipment powered from the emergency buses. However, when the ECCS subsystem(s) are not required to be OPERABLE, then there is no reason to require the DGs to autostart on an ESF initiation signal. In addition, the ESF actuation signal is only an anticipatory start signal; the DGs are only needed during a LOCA if a loss of offsite power occurs concurrently. The DGs are also required to autostart if a loss of offsite power occurs. The requirement to autostart the required DG(s) on a loss of offsite power signal is being maintained in the ITS (ITS SR 3.8.1.12). Thus, when in these conditions (associated ECCS subsystem(s) not required to be OPERABLE), there is no reason to require the DGs to be capable of automatically starting on an ESF actuation signal (either by itself or concurrent with a loss of offsite power signal). This change will not affect the probability of an accident, since neither these SRs nor an ESF actuation signal are considered as an initiator of an analyzed accident. The consequences of an analyzed accident would not be significantly increased because the ESF actuation signal is only an anticipatory start signal; the DGs are only needed during a LOCA if a loss of offsite power occurs concurrently (and this SR is being maintained). Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. **Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?**

   Response: No.

   The proposed change deletes certain Surveillances from being required to be met. These Surveillances are CTS 4.8.1.1.2.e.5 (ITS SR 3.8.1.13), the Safety Injection actuation test, CTS 4.8.1.1.2.e.6.c (ITS SR 3.8.1.14), the bypass of automatic trips test (ESF actuation signal portion only), CTS 4.8.1.1.2.e.6 (ITS SR 3.8.1.19), the loss of offsite power in conjunction with a Safety Injection actuation test, and CTS 4.8.1.1.2.e.10 (ITS SR 3.8.1.20), the DG test mode override on a Safety Injection signal test. SR 3.8.1.13, SR 3.8.1.14 (ESF actuation signal portion only), SR 3.8.1.19, and SR 3.8.1.20 are not required to be met because the ESF actuation signal is not required to be OPERABLE, as

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.2, AC SOURCES - SHUTDOWN

indicated in the Surveillance Requirements in ITS 3.3.2. The CTS and ITS also do not require the ECCS subsystem(s) to be OPERABLE in MODES 5 and 6. The DGs are required to support the equipment powered from the emergency buses. However, when the ECCS subsystem(s) are not required to be OPERABLE, then there is no reason to require the DGs to autostart on an ESF initiation signal. In addition, the ESF actuation signal is only an anticipatory start signal; the DGs are only needed during a LOCA if a loss of offsite power occurs concurrently. The DGs are also required to autostart if a loss of offsite power occurs. The requirement to autostart the required DG(s) on a loss of offsite power signal is being maintained in the ITS (ITS SR 3.8.1.12). Thus, when in these conditions (associated ECCS subsystem(s) not required to be OPERABLE), there is no reason to require the DGs to be capable of automatically starting on an ESF actuation signal (either by itself or concurrent with a loss of offsite power signal). This change will not physically alter the plant (no new or different type of equipment will be installed). In addition, no changes will be made to the operation of the unit. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. **Does the proposed change involve a significant reduction in a margin of safety?**

Response: No.

The proposed change deletes certain Surveillances from being required to be met. These Surveillances are CTS 4.8.1.1.2.e.5 (ITS SR 3.8.1.13), the Safety Injection actuation test, CTS 4.8.1.1.2.e.6.c (ITS SR 3.8.1.14), the bypass of automatic trips test (ESF actuation signal portion only), CTS 4.8.1.1.2.e.6 (ITS SR 3.8.1.19), the loss of offsite power in conjunction with a Safety Injection actuation test, and CTS 4.8.1.1.2.e.10 (ITS SR 3.8.1.20), the DG test mode override on a Safety Injection signal test. SR 3.8.1.13, SR 3.8.1.14 (ESF actuation signal portion only), SR 3.8.1.19, and SR 3.8.1.20 are not required to be met because the ESF actuation signal is not required to be OPERABLE, as indicated in the Surveillance Requirements in ITS 3.3.2. The CTS and ITS also do not require the ECCS subsystem(s) to be OPERABLE in MODES 5 and 6. The DGs are required to support the equipment powered from the emergency buses. However, when the ECCS subsystem(s) are not required to be OPERABLE, then there is no reason to require the DGs to autostart on an ESF initiation signal. In addition, the ESF actuation signal is only an anticipatory start signal; the DGs are only needed during a LOCA if a loss of offsite power occurs concurrently. The DGs are also required to autostart if a loss of offsite power occurs. The requirement to autostart the required DG(s) on a loss of offsite power signal is being maintained in the ITS (ITS SR 3.8.1.12). Thus, when in these conditions (associated ECCS subsystem(s) not required to be OPERABLE), there is no reason to require the DGs to be capable of automatically starting on an ESF actuation signal (either by itself or concurrent with a loss of offsite power signal). The margin of safety is not affected by this change because the ESF actuation signal is only an anticipatory start signal; the DGs are only needed during a LOCA if a loss of offsite power occurs concurrently (and this SR is being maintained). Therefore, the proposed change does not involve a significant reduction in a margin of safety.

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.2, AC SOURCES - SHUTDOWN

Based on the above, I&M concludes that the proposed change presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

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ATTACHMENT 3

ITS 3.8.3, Diesel Fuel Oil

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

ITS

A.1

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

Add proposed LCO 3.8.3 — A.2

3.8.1.1 ~~As a minimum, the following A.C. electrical power sources shall be OPERABLE~~

a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and

b. Two separate and independent diesel generators, each with:

See ITS 3.8.1

1. A separate day fuel tank containing a minimum of 70 gallons of fuel,

LA.1

SR 3.8.3.1 2. A separate fuel storage system* containing a minimum indicated volume of 46,000 gallons of fuel, and

See ITS 3.8.1

3. A separate fuel transfer pump.

APPLICABILITY: ~~MODES 1, 2, 3 and 4.~~ When associated DG is required to be OPERABLE — A.2

ACTION: Add proposed ACTIONS A and D and ACTIONS Note for fuel oil storage tank volume — L.1

a. With an offsite circuit of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. offsite source by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; restore at least two offsite circuits and two diesel generators to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

See ITS 3.8.1

b. With a diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the A.C. offsite sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and if the diesel generator became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours, unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated; restore diesel generators to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. At the number of failures for the inoperable diesel indicated in Table 4.8-1 perform the Additional Reliability Actions prescribed in Table 4.8-1.

~~*Tanks are separate between diesels but shared between Units 1 and 2.~~ — LA.1

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE: L.2

a. ~~In accordance with the frequency specified in Table 4.8-1~~ on a STAGGERED TEST BASIS by: L.3

1. Verifying the fuel level in the day tank. See ITS 3.8.1

SR 3.8.3.1 2. Verifying the fuel level in the fuel storage tank. every 31 days L.2

3. Verifying that the fuel transfer pump can be started and that it transfers fuel from the storage system to the day tank.

4. Verifying that the diesel starts from standby conditions and achieves in less than or equal to 10 seconds, voltage = 4160±420 V, and frequency = 60±1.2 Hz.* See ITS 3.8.1

5. Verifying the diesel is synchronized and loaded and operates for greater than or equal to 60 minutes at a load of 3500 kw**, and

6. Verifying that the diesel generator is aligned to provide standby power to the associated emergency busses.

b. By removing accumulated water***: A.3

1) From the day tank at least once per 31 days and after each occasion when the diesel is operated for greater than 1 hour, and See ITS 3.8.1

SR 3.8.3.3 2) From the storage tanks at least once per 31 days. Add proposed SR 3.8.3.2 A.4

c. By sampling new fuel oil*** in accordance with the applicable guidelines of ASTM D4057-81 prior to adding new fuel to the storage tanks and M.1

1) By verifying, in accordance with the tests specified in ASTM D975-81 and prior to adding the new fuel to the storage tanks, that the sample has: See ITS 5.5

* The diesel generator start (10 seconds) from standby conditions shall be performed at least once per 184 days in these surveillance tests. All other engine starts for the purpose of this surveillance testing and compensatory action may be at reduced acceleration rates as recommended by the manufacturer so that mechanical stress and wear on the diesel engine are minimized. See ITS 3.8.1

** Momentary load transients do not invalidate this test.

*** The actions to be taken should any of the properties be found outside of specified limits are defined in the Bases. A.3

Add proposed ACTION C

Add proposed ACTION D for accumulated water

M.1

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

a) A kinematic viscosity of greater than or equal to 1.9 centistokes but less than or equal to 4.1 centistokes at 40°C (alternatively, Saybolt viscosity, SUS at 100°F of greater than or equal to 32.6 but less than or equal to 40.1), if gravity was not determined by comparison with supplier's certification.

b) A flash point equal to or greater than 125°F.

2) By verifying, in accordance with the test specified in ASTM D1298-80 and prior to adding the new fuel to the storage tanks, that the sample has either an API gravity of greater than or equal to 30 degrees but less than or equal to 40 degrees at 60°F or an absolute specific gravity at 60/60°F of greater than or equal to 0.82 but less than or equal to 0.88, or an API gravity of within 0.3 degrees at 60°F when compared to the supplier's certificate or a specific gravity of within 0.0016 at 60/60° when compared to the supplier's certificate.

See ITS 5.5

3) By verifying, in accordance with the test specified in ASTM D4176-82 and prior to adding new fuel to the storage tanks, that the sample has a clear and bright appearance with proper color.

4) By verifying within 31 days of obtaining the sample that the other properties specified in Table 1 of ASTM D975-81 are within the appropriate limits when tested in accordance with ASTM D975-81 except that the analysis for sulfur may be performed in accordance with ASTM D2622-82.

d. At least once per 31 days by obtaining a sample of fuel oil from the storage tanks in accordance with ASTM D2276-83, and verifying that total particulate contamination is less than 10 mg/liter when tested in accordance with ASTM D2276-83, Method A~~*~~.

M.1

e. At least once per 18 months, during shutdown, by:

1. Subjecting the diesel engine to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service.

See ITS 3.8.1

~~*The actions to be taken should any of the properties be found outside of the specified limits are defined in the Bases.~~

Add proposed ACTION B

M.1

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SURVEILLANCE REQUIREMENTS (Continued)

c) Verifying that all automatic diesel generator trips, except engine overspeed and generator differential, are automatically bypassed upon loss of voltage on the emergency bus and/or Safety Injection actuation signal.

7. Verifying that the diesel generator operates at a power factor of less than or equal to 0.86 for at least 8 hours.* During this test the diesel generator shall be loaded to 3500 kw. Within 5 minutes after completing this 8-hour test, perform Surveillance Requirement 4.8.1.1.2.a.4 (at existing conditions).**

8. Determine that the auto-connected loads to each diesel generator do not exceed 3500 kw.

9. Verifying the diesel generator's capability to:

a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power.

b) Transfer its loads to the offsite power source, and

c) Be restored to its standby status.

10. Verifying that with the diesel generator operating in a test mode while connected to its test load, a simulated Safety Injection signal overrides the test mode by:

a) Returning the diesel generator to standby operation, and

b) Verifying the emergency loads are serviced by offsite power.

11. Verifying that the automatic sequence timing relays are OPERABLE with each load sequence time within plus or minus 5% of its required value and that each load is sequenced on within the design allowable time limit.

See ITS 3.8.1

~~f. At least once per 10 years by:~~

~~1. Employing one of the following cleaning methods to clean the fuel oil storage tanks:~~

~~a) Drain each fuel oil storage tank, remove the accumulated sediment, and clean the tank, or~~

LA.2

* Momentary transients outside the load and power factor range do not invalidate this test.

** If Surveillance Requirement 4.8.1.1.2.a.4 is not satisfactorily completed, it is not necessary to repeat the preceding 8-hour test. Instead, the diesel generator may be operated at 3500 kw for 2 hours or until operating temperature has stabilized.

See ITS 3.8.1

A.1

ITS

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

b) ~~Agitate the fuel oil in the storage tank while pumping the oil from the bottom of the tank through a 5-micron filter, and back to the opposite end of the tank. Three successive samples shall be taken and analyzed according to ASTM D2276-83. If the contaminant level in any of the samples is greater than 10 mg per liter, the agitation, filtration, and sampling processes shall be repeated. If the contaminant level remains above 10 mg per liter after 3 iterations, the draining and cleaning method described in surveillance requirement 4.8.1.1.2.f.1.a shall be employed.~~

2) ~~Performing a precision leak detection test to verify that the leakage rate from the fuel oil system is less than or equal to .05 gallons per hour.~~

LA.2

3) Starting both diesel generators simultaneously, during shutdown, and verifying that both diesel generators accelerate to at least 514 RPM in less than or equal to 10 seconds.*

See ITS 3.8.1

*Shall be performed after any modifications which could affect diesel generator interdependence.

See ITS 3.8.1

ITS 3.8.3

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

TABLE 4.8-1

DIESEL GENERATOR TEST SCHEDULE

Number of Failures in Last 20 Valid Tests*	Test Frequency
Less than or equal to 1	At least once per 31 days
Greater than or equal to 2	At least once per 7 days**

L.2

* Criteria for determining number of failures and valid tests shall be in accordance with Regulatory Position C.2.1 of Regulatory Guide 1.9, Revision 3, where the number of tests and failures is determined on a per diesel generator basis. For the purposes of this test schedule, only valid tests conducted after the OL issuance date shall be included in the computation of the "last 20 valid tests."

** This test frequency shall be maintained until seven consecutive failure free demands have been performed and the number of failures in the last 20 valid demands has been reduced to one or less.

L.2

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SHUTDOWN

Add proposed LCO 3.8.3 — A.2

LIMITING CONDITION FOR OPERATION

LCO 3.8.3 3.8.1.2 ~~As a minimum, the following A.C. electrical power sources shall be OPERABLE:~~

a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and

b. One diesel generator with:

1. A day fuel tank containing a minimum of 70 gallons of fuel.

See ITS 3.8.2

SR 3.8.3.1 2. A fuel storage system containing a minimum indicated volume of 46,000 gallons of fuel, and

3. A fuel transfer pump.

See ITS 3.8.2

APPLICABILITY: ~~MODES 5 and 6~~ — When associated DG is required to be OPERABLE — A.2

ACTION: Add proposed ACTIONS A and D and ACTIONS Note for fuel oil storage tank volume — L.1

With less than the above minimum required A.C. electrical power sources OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2.

See ITS 3.8.2

SURVEILLANCE REQUIREMENTS

SR 3.8.3.1, SR 3.8.3.2, SR 3.8.3.3 4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.5.

See CTS markup pages 2 of 14 through 5 of 14

Commencing in 1999 during the extended shutdown initiated in 1997, the 18-month surveillance requirements 4.8.1.1.2.e.4.a) and b); 4.8.1.1.2.e.6.a), b) and c); 4.8.1.1.2.e.8; 4.8.1.1.2.e.9.a), b) and c); 4.8.1.1.2.e.10.a) and b); and 4.8.1.1.2.e.11, may be delayed one time until just prior to the first entry into MODE 4 following the shutdown.

See ITS 3.8.2

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ITS 3.8.3

A.1

ITS

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

Add proposed LCO 3.8.3 — A.2

3.8.1.1 ~~As a minimum, the following A.C. electrical power sources shall be OPERABLE:~~

a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and — See ITS 3.8.1

b. Two separate and independent diesel generators, each with:

1. A separate day fuel tank containing a minimum of 70 gallons of fuel,

LA.1

2. A separate fuel storage system* containing a minimum indicated volume of 46,000 gallons of fuel, and

See ITS 3.8.1

3. A separate fuel transfer pump.

When associated DG is required to be OPERABLE — A.2

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

Add proposed ACTIONS A and D and ACTIONS Note for fuel oil storage tank volume — L.1

ACTION:

a. With an offsite circuit of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. offsite source by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; restore at least two offsite circuits and two diesel generators to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

See ITS 3.8.1

b. With a diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the A.C. offsite sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and if the diesel generator became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours, unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated; restore diesel generators to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. At the number of failures for the inoperable diesel indicated in Table 4.8-1 perform the Additional Reliability Actions prescribed in Table 4.8-1.

~~*Tanks are separate between diesels but shared between Units 1 and 2.~~ — LA.1

ITS 3.8.3

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE: L.2

a. ~~In accordance with the frequency specified in Table 4.8-1~~ ~~on a STAGGERED TEST BASIS by:~~ L.3

~~1. Verifying the fuel level in the day tank,~~ See ITS 3.8.1

SR 3.8.3.1 2. Verifying the fuel level in the fuel storage tank, every 31 days L.2

3. Verifying that the fuel transfer pump can be started and that it transfers fuel from the storage system to the day tank,

4. Verifying that the diesel starts from standby conditions and achieves in less than or equal to 10 seconds, voltage = 4160±420 V, and frequency = 60±1.2 Hz,*

5. Verifying the diesel is synchronized and loaded and operates for greater than or equal to 60 minutes at a load of 3500 kw**, and

6. Verifying that the diesel generator is aligned to provide standby power to the associated emergency busses.

See ITS 3.8.1

b. By removing accumulated water*** A.3

~~1) From the day tank at least once per 31 days and after each occasion when the diesel is operated for greater than 1 hour, and~~ See ITS 3.8.1

SR 3.8.3.3 2) From the storage tanks at least once per 31 days. Add proposed SR 3.8.3.2 A.4

c. By sampling new fuel oil*** in accordance with the applicable guidelines of ASTM D4057-81 prior to adding new fuel to the storage tanks and M.1

1) By verifying, in accordance with the tests specified in ASTM D975-81 and prior to adding the new fuel to the storage tanks, that the sample has: See ITS 5.5

* The diesel generator start (10 seconds) from standby conditions shall be performed at least once per 184 days in these surveillance tests. All other engine starts for the purpose of this surveillance testing and compensatory action may be at reduced acceleration rates as recommended by the manufacturer so that mechanical stress and wear on the diesel engine are minimized.

** Momentary load transients do not invalidate this test.

See ITS 3.8.1

~~*** The actions to be taken should any of the properties be found outside of specified limits are defined in the Bases.~~ A.3

Add proposed ACTION C

Add proposed ACTION D for accumulated water

M.1

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

a) A kinematic viscosity of greater than or equal to 1.9 centistokes but less than or equal to 4.1 centistokes at 40°C (alternatively, Saybolt viscosity, SUS at 100°F of greater than or equal to 32.6 but less than or equal to 40.1), if gravity was not determined by comparison with supplier's certification.

b) A flash point equal to or greater than 125°F.

2) By verifying, in accordance with the test specified in ASTM D1298-80 and prior to adding the new fuel to the storage tanks, that the sample has either an API gravity of greater than or equal to 30 degrees but less than or equal to 40 degrees at 60°F or an absolute specific gravity at 60/60°F of greater than or equal to 0.82 but less than or equal to 0.88, or an API gravity of within 0.3 degrees at 60°F when compared to the supplier's certificate or a specific gravity of within 0.0016 at 60/60°F when compared to the supplier's certificate.

See ITS 5.5

3) By verifying, in accordance with the test specified in ASTM D4176-82 and prior to adding new fuel to the storage tanks, that the sample has a clear and bright appearance with proper color.

4) By verifying within 31 days of obtaining the sample that the other properties specified in Table 1 of ASTM D975-81 are within the appropriate limits when tested in accordance with ASTM D975-81 except that the analysis for sulfur may be performed in accordance with ASTM D2622-82.

d. At least once per 31 days by obtaining a sample of fuel oil from the storage tanks in accordance with ASTM D2276-83, and verifying that total particulate contamination is less than 10 mg/liter when tested in accordance with ASTM D2276-83, Method A.

M.1

e. At least once per 18 months, during shutdown, by:

1. Subjecting the diesel engine to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service.

See ITS 3.8.1

Add proposed ACTION B

M.1

- ~~The actions to be taken should any of the properties be found outside of the specified limits are defined in the Bases.~~

ITS 3.8.3

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

c) Verifying that all automatic diesel generator trips, except engine overspeed and generator differential, are automatically bypassed upon loss of voltage on the emergency bus and/or Safety Injection actuation signal.

7. Verifying that the diesel generator operates at a power factor of less than or equal to 0.86 for at least 8 hours.* During this test the diesel generator shall be loaded to 3500 kw. Within 5 minutes after completing this 8-hour test, perform Surveillance Requirement 4.8.1.1.2.a.4 (at existing conditions).**

8. Determine that the auto-connected loads to each diesel generator do not exceed 3500 kw.

9. Verifying the diesel generator's capability to:

a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power.

b) Transfer its loads to the offsite power source, and

c) Be restored to its standby status.

10. Verifying that with the diesel generator operating in a test mode while connected to its test load, a simulated Safety Injection signal overrides the test mode by:

a) Returning the diesel generator to standby operation, and

b) Verifying the emergency loads are serviced by offsite power.

11. Verifying that the automatic sequence timing relays are OPERABLE with each load sequence time within plus or minus 5% of its required value and that each load is sequenced on within the design allowable time limit.

See ITS 3.8.1

f. At least once per 10 years by:

1) Employing one of the following cleaning methods to clean the fuel oil storage tanks:

a) Drain each fuel oil storage tank, remove the accumulated sediment, and clean the tank, or

LA.2

* Momentary transients outside the load and power factor range do not invalidate this test.

** If Surveillance Requirement 4.8.1.1.2.a.4 is not satisfactorily completed, it is not necessary to repeat the preceding 8-hour test. Instead, the diesel generator may be operated at 3500 kw for 2 hours or until operating temperature has stabilized.

See ITS 3.8.1

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A.1

ITS

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

b) ~~Agitate the fuel oil in the storage tank while pumping the oil from the bottom of the tank through a 5-micron filter, and back to the opposite end of the tank. Three successive samples shall be taken and analyzed according to ASTM D2276-83. If the contaminant level in any of the samples is greater than 10 mg per liter, the agitation, filtration, and sampling processes shall be repeated. If the contaminant level remains above 10 mg per liter after 3 iterations, the draining and cleaning method described in surveillance requirement 4.8.1.1.2.f.1.a shall be employed.~~

2) ~~Performing a precision leak detection test to verify that the leakage rate from the fuel oil system is less than or equal to .05 gallons per hour.~~

LA.2

3) Starting both diesel generators simultaneously, during shutdown, and verifying that both diesel generators accelerate to at least 514 RPM in less than or equal to 10 seconds.*

See ITS 3.8.1

*Shall be performed after any modifications which could affect diesel generator interdependence.

See ITS 3.8.1

ITS 3.8.3

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

TABLE 4.8-1

DIESEL GENERATOR TEST SCHEDULE

Number of Failures in Last 20 Valid Tests*	Test Frequency
Less than or equal to 1	At least once per 31 days
Greater than or equal to 2	At least once per 7 days**

L.2

* Criteria for determining number of failures and valid tests shall be in accordance with Regulatory Position C.2.1 of Regulatory Guide 1.9, Revision 3, where the number of tests and failures is determined on a per diesel generator basis. For the purposes of this test schedule, only valid tests conducted after the OL issuance date shall be included in the computation of the "last 20 valid tests."

** This test frequency shall be maintained until seven consecutive failure free demands have been performed and the number of failures in the last 20 valid demands has been reduced to one or less.

L.2

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SHUTDOWN

Add proposed LCO 3.8.3 — A.2

LIMITING CONDITION FOR OPERATION

LCO 3.8.3 3.8.1.2 ~~As a minimum, the following A.C. electrical power sources shall be OPERABLE:~~

a. ~~One circuit between the offsite transmission network and the onsite Class 1E distribution system, and~~

b. ~~One diesel generator with:~~

1. ~~A day fuel tank containing a minimum of 70 gallons of fuel,~~

See ITS 3.8.2

SR 3.8.3.1 2. A fuel storage system containing a minimum indicated volume of 46,000 gallons of fuel, and

3. ~~A fuel transfer pump.~~ — See ITS 3.8.2

APPLICABILITY: ~~MODES 5 and 6~~ — When associated DG is required to be OPERABLE — A.2

ACTION: Add proposed ACTIONS A and D and ACTIONS Note for fuel oil storage tank volume — L.1

With less than the above minimum required A.C. electrical power sources OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2.

See ITS 3.8.2

SURVEILLANCE REQUIREMENTS

SR 3.8.3.1, SR 3.8.3.2, SR 3.8.3.3 4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.5.

See CTS markup pages 9 of 14 through 14 of 14

Commencing in 1999 during the extended shutdown initiated in 1997, the 18-month surveillance requirements 4.8.1.1.2.e.4.a) and b); 4.8.1.1.2.e.6.a), b) and c); 4.8.1.1.2.e.8; 4.8.1.1.2.e.9.a), b) and c); 4.8.1.1.2.e.10.a) and b); and 4.8.1.1.2.e.11, may be delayed one time until just prior to the first entry into MODE 4 following the shutdown.

See ITS 3.8.2

COOK NUCLEAR PLANT-UNIT 2 Page 3/4 8-9 AMENDMENT ~~112~~, ~~132~~, ~~169~~, ~~211~~, 213

DISCUSSION OF CHANGES
ITS 3.8.3, DIESEL FUEL OIL

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A.2 CTS LCOs 3.8.1.1 and 3.8.1.2 state the requirements for the AC Sources during operating and shutdown conditions, respectively. These requirements are used to form the LCO and Applicability for the ITS diesel fuel oil Specification. ITS LCO 3.8.3, "Diesel Fuel Oil," states that the stored diesel fuel oil shall be within limits for each required DG. The Applicability for this requirement is when associated DG is required to be OPERABLE. This changes the CTS by combining the requirements for diesel fuel oil into one Specification.

This change is acceptable because the current requirements are translated into ITS form with no technical changes. Diesel fuel oil is a support system for each DG. The CTS and ITS maintain this relationship between the DGs and the Diesel Fuel Oil System without any changes in the technical requirements. This change is designated as administrative because it does not result in a technical change to the CTS.

A.3 CTS 4.8.1.1.2.b.2 requires the removal of accumulated water from the diesel fuel oil storage tanks at least once per 31 days. CTS 4.8.1.1.2.b footnote *** states that the actions to be taken should any of the properties be found outside of specified limits are defined in the Bases. For CTS 4.8.1.1.2.b.2, the Bases state that the removal of accumulated water as required by CTS 4.8.1.1.2.b.2 is performed by drawing the contents off the bottom of the tank until acceptable results are obtained for either a tape test or a water and sediment test. An acceptable result for the water and sediment content is a measured value less than 0.05 percent volume. ITS SR 3.8.3.3 specifies to check and remove accumulated water from each fuel oil storage tank. ITS 3.8.3 ACTION D states that with one or more DGs with diesel fuel oil not within limits for reasons other than Condition A, B, or C, to immediately declare the associated DG inoperable. ITS 3.8.3 Conditions A, B, and C are not related to accumulated water, therefore, if for some reason accumulated water could not be removed, then ITS 3.8.3 ACTION D would be entered and the associated DG could be declared inoperable. This changes the CTS by providing an ACTION for diesel fuel oil not within limits (in this case, fuel oil accumulated water present).

The purpose of CTS 4.8.1.1.2.b.2 is to check and remove any accumulated water to help ensure microbiological fouling does not cause fuel oil degradation. The CTS 4.8.1.1.2.b Footnote *** and associated Bases do not really provide any specific action for accumulated water. ITS 3.8.3 ACTION D requires entry for diesel fuel oil not within limit for reasons other than Condition A, B, or C. The ITS SR 3.8.3.3 Bases state that the presence of water does not necessarily represent failure of this SR, provided the accumulated water is removed during performance of the Surveillance. The ITS 3.8.3 guidance is consistent with the current intent of the CTS. If accumulated water could not be removed, the DG would be declared inoperable. This change is designated as administrative because it does not result in a technical change to the CTS.

A.4 CTS 4.8.1.1.2.c and CTS 4.8.1.1.2.d specify the requirements for the properties of new and stored fuel oil, respectively. The technical content of CTS 4.8.1.1.2.c and CTS 4.8.1.1.2.d is being moved to ITS 5.5.11. A Surveillance Requirement is added (ITS SR 3.8.3.2) to clarify that the tests of the Diesel Fuel Oil Testing Program must also be completed and passed for determining OPERABILITY of the DG fuel oil subsystem.

The purpose of CTS 4.8.1.1.2.c and CTS 4.8.1.1.2.d are to ensure the new and stored diesel fuel oil properties are consistent with the specified standards. This change simply moves the actual properties to ITS 5.5.11. Any technical changes will be addressed in the Discussion of Changes for ITS 5.5. This change is acceptable since this is a presentation preference that maintains current requirements except for those discussed in the Discussion of Changes for ITS 5.5. This change is designated as administrative because it does not result in a technical change to the CTS.

MORE RESTRICTIVE CHANGES

M.1 CTS 4.8.1.1.2.c and CTS 4.8.1.1.2.d specify the requirements for the properties of new and stored fuel oil, respectively. CTS 4.8.1.1.2.c footnote *** and CTS 4.8.1.1.2.d footnote * state that the actions to be taken should any of the properties be found outside of specified limits are defined in the Bases. The requirements in CTS 4.8.1.1.2.c.1), 2), and 3) apply to properties associated with the new fuel oil. The properties must be met before adding the new fuel to the storage tank. There are no actions specified in the Bases for these properties since the new fuel will not be added to the storage tank unless these properties are within limits. CTS 4.8.1.1.2.c.4) applies to the new fuel oil properties which must be evaluated within 31 days after the fuel is added to the storage tank. The CTS 3/4.8 Bases provides the following guidance and actions for CTS 4.8.1.1.2.c.4): a) The sample specified in CTS 4.8.1.1.2.c.4) is sent offsite for testing; b) A serious attempt will be made to meet the 31 day limit on the offsite tests; however, if for reason this limit is not met (e.g., if the sample is lost or broken or if the results are not received in 31 days), the DGs should not be considered inoperable; c) If the sample is lost, broken, or fails the offsite tests and the new oil has already been put into the storage tank, the offsite tests will be performed on a sample taken from the storage tank; and d) If the results on the subsequent storage tank sample are not within specified limits, the DGs should be considered OPERABLE and the out-of-spec properties should be returned to within specification as soon as possible. CTS 4.8.1.1.2.d applies to particulate contamination of the fuel in the storage tank. The CTS 3/4.8 Bases provides the following guidance and actions for CTS 4.8.1.1.2.d. If the monthly storage tank sample taken fails the particulate contamination test, the DG should be considered inoperable and the contamination level should be restored to below 10 mg/liter as soon as possible. ITS 3.8.3 ACTION B specifies the compensatory actions for one or more DG with stored fuel oil total particulates

DISCUSSION OF CHANGES
ITS 3.8.3, DIESEL FUEL OIL

not within limits. ITS 3.8.3 Required Action B.1 requires the restoration of the fuel oil total particulates to within limits in 7 days. ITS 3.8.3 ACTION C specifies the compensatory actions for one or more DGs with new fuel oil properties not within limits. ITS 3.8.3 Required Action C.1 requires the restoration of the stored fuel oil properties to within limits within 30 days. This changes the CTS by providing explicit ACTIONS for fuel oil total particulates and new fuel oil properties limits not met.

The purpose of CTS 4.8.1.1.2.c and associated Bases is to provide the appropriate property limits for new and stored fuel and to provide the appropriate compensatory actions for when the stored fuel oil properties are not within limits. The purpose of CTS 4.8.1.1.2.d and associated Bases is to provide the appropriate limit for total particulate contamination and to provide the appropriate compensatory actions for when the total particulate contamination is not within limit. This change provides explicit Required Actions and Completion Times for restoring both total particulates and fuel oil properties to within limits. ITS 3.8.3 ACTION B is entered as a result of a failure to meet the acceptance criterion of total particulate concentration specified in ITS 5.5.11.c. 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, 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 DG inoperable. The 7 day Completion Time allows for further evaluation, re-sampling and re-analysis of the DG fuel oil. ITS 3.8.3 ACTION C is entered as a result of failure to meet the requirements specified in ITS 5.5.11.b. With the new fuel oil properties defined in the Bases for ITS 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 did not cause the stored fuel oil to be outside of the required limits, or to restore the stored fuel oil properties to within limits. This restoration may involve feed and bleed procedures, filtering, or combinations of these procedures. Even if a DG start and load was required during this time interval and the stored fuel oil properties were outside limits, there is a high likelihood that the DG would still be capable of performing its intended function. This change is designated as more restrictive because explicit Required Actions and Completion Times are included in the Technical Specifications for stored fuel oil total particulates and new diesel fuel oil properties not within limits.

<u>RELOCATED SPECIFICATIONS</u>

None

DISCUSSION OF CHANGES
ITS 3.8.3, DIESEL FUEL OIL

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description including Design Limits)* CTS LCO 3.8.1.1.b.2 requires a "separate" fuel storage system for each required DG. CTS 3.8.1.1.b.2 footnote * states that the tanks are "separate between diesels but shared between Units 1 and 2." ITS 3.8.3 does not state that the fuel oil storage tanks are separate between diesels, or that they are shared between Units 1 and 2. This changes the CTS by moving these details to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement that the required fuel storage tank contains the specified volume of diesel fuel oil. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.2 *(Type 6 – Removal of LCO, SR, or other TS requirement to the TRM, UFSAR, ODCM, QAPD, or IIP)* CTS 4.8.1.1.2.f.1 requires a cleaning of the fuel oil storage tanks by one of two methods every 10 years. CTS 4.8.1.1.2.f.2 requires the performance of a precision leak detection test to verify that the leakage rate from the fuel oil system is $\leq$ .05 gallons/hour. ITS 3.8.3 does not include these requirements for the fuel oil storage tanks. This changes the CTS by moving these fuel oil storage tank requirements from the Technical Specifications to the Technical Requirements Manual (TRM).

The removal of these details from the Technical Specifications is acceptable because this type of information is not necessary to provide adequate protection of public health and safety. The purpose of CTS 4.8.1.1.2.f.1 is to ensure the contaminant level is below 10 mg/l. The purpose of CTS 4.8.1.1.2.f.2 is to satisfy the requirements of the National Fire Protection Association (NFPA) 329 and to ensure the leak tightness of the tank. The criteria and Frequencies established in the ITS 5.5.11, "Diesel Fuel Oil Testing Program," and ITS SR 3.8.3.3 will ensure the diesel fuel oil is at a quality that will ensure proper operation of the DG during a design basis accident. Also, this change is acceptable because the removed information will be adequately controlled in the TRM. The TRM is incorporated by reference into the UFSAR and any changes to the TRM are made under 10 CFR 50.59, which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because information is being removed from the Technical Specifications.

DISCUSSION OF CHANGES
ITS 3.8.3, DIESEL FUEL OIL

LESS RESTRICTIVE CHANGES

L.1 *(Category 4 – Relaxation of Required Action)* The CTS 3.8.1.1 and 3.8.1.2 Actions do not provide explicit compensatory actions if the volume of fuel oil in the storage tank is less than the specified limit. Thus, if the minimum indicated volume is not met, the associated DG must be declared inoperable and CTS 3.8.1.1 Action b or the CTS 3.8.1.2 Action must be entered, as applicable. ITS 3.8.3 ACTION A allows the unit to not declare the associated DG inoperable as long as the volume of stored fuel oil is greater than a six day limit (i.e., > 39,500 gallons). In this situation, ITS 3.8.3 Required Action A.1 allows 48 hours to restore the fuel oil volume to within limits. If this Required Action and associated Completion Time is not met or if the DG fuel oil storage tank volume is ≤ to 39,500 gallons, the associated DG must be declared inoperable immediately (ITS 3.8.3 ACTION D). In addition, a Note has been added to the ITS 3.8.3 ACTIONS that allows separate Condition entry for each DG. This changes the CTS by allowing each DG not to be declared inoperable with the fuel oil storage tank volume not within the specified Surveillance limit as long as each DG has enough fuel oil for 6 days (> 39,500 gallons) of operation at full load.

The purpose of ITS 3.8.3 ACTION A is to allow time to restore the stored diesel fuel oil volume to within the specified limit. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the repair period. The addition of ITS 3.8.3 ACTION A will allow the associated DG not to be declared inoperable with the stored diesel fuel oil volume not within the specified Surveillance limit as long as each DG has enough fuel oil for 6 days operation at full load. In this Condition, the 7 day fuel oil supply for a DG is not available. However, the Condition is restricted to fuel oil volume reductions that maintain at least a 6 day supply. These circumstances may be caused by events such as full load operation required after an inadvertent start while at minimum required level, or feed and bleed operations, which may be necessitated by increasing particulate levels or any number of other oil quality degradations. This restriction allows sufficient time for obtaining the requisite replacement volume and performing the analyses required prior to addition of diesel fuel oil to the tank. A period of 48 hours is considered sufficient to complete restoration of the required volume prior to declaring the affected DG inoperable. This period is acceptable based on the remaining capacity (> 6 days), the fact that procedures will be initiated to obtain replenishment, and the low probability of an event during this brief period. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.2 *(Category 7 – Relaxation Of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.8.1.1.2.a specifies that each DG shall be demonstrated OPERABLE in accordance with the frequency specified in Table 4.8-1 on a

DISCUSSION OF CHANGES
ITS 3.8.3, DIESEL FUEL OIL

STAGGERED TEST BASIS. CTS Table 4.8-1 specifies the test frequency based on the number of failures that have occurred in testing each DG during the previous 20 tests. If the number of failures do not exceed the specified limit, testing is to be performed every 31 days. If failure occurs above the specified limit, then testing is conducted every 7 days. CTS 4.8.1.1.2.a.2 requires the verification of the fuel level in the fuel storage tank. ITS SR 3.8.3.1 requires the verification that each fuel oil storage tank contains the specified volume limit every 31 days. This changes the CTS by deleting the requirement to verify the fuel oil storage tank level at an increasing frequency based on the number of DG failures. The deletion of the STAGGERED TEST BASIS requirement is discussed in DOC L.3.

The purpose of CTS 4.8.1.1.2.a.2 is to ensure the DG has the appropriate amount of diesel fuel oil for continuous operation for 7 days. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. The CTS test frequency has been changed by deleting the requirement to perform the Surveillance in accordance with the DG Test Schedule Table and includes a Frequency of 31 days. This change is acceptable because the DG failures that result in a more frequent DG test frequency have no impact on the fuel oil storage tank's ability to perform their intended functions because the fuel oil storage tank is normally maintained well above the minimum. The 31 day Frequency is adequate to ensure that a sufficient supply of diesel fuel oil is available, since low level alarms are provided and unit operators would be aware of any large uses of diesel fuel oil during this period. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.3 *(Category 7 – Relaxation Of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.8.1.1.2.a states that each DG shall be demonstrate OPERABLE in accordance with the frequency specified in Table 4.8-1 "on a STAGGERED TEST BASIS." CTS 4.8.1.1.2.a.2 requires the verification of the fuel level in the fuel storage tank. ITS SR 3.8.3.1 requires the verification that each fuel oil storage tank contains the specified volume limit every 31 days. The Surveillance Frequency for ITS SR 3.8.3.1 is every 31 days, but does not include the "STAGGERED TEST BASIS" requirement. This changes the CTS by deleting the requirement to test on a STAGGERED TEST BASIS. The deletion to monitor the fuel oil storage tank volume more frequently based on the number of DG failures is discussed in DOC L.2.

The purpose of CTS 4.8.1.1.2.a is to demonstrate the OPERABILITY of the DG(s) and the associated support equipment (fuel oil day tank and fuel oil transfer system). The purpose of CTS 4.8.1.1.2.a.2 is to ensure the DG has the appropriate amount of diesel fuel oil for continuous operation for 7 days. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. This change deletes the requirement to perform CTS 4.8.1.1.2.a.2 (SR 3.8.3.1) on a STAGGERED TEST BASIS. The intent of a requirement for staggered testing is to increase reliability of the component/system being tested. A number of studies have been performed that have demonstrated that staggered testing has negligible impact on component reliability. These analytical and subjective

DISCUSSION OF CHANGES
ITS 3.8.3, DIESEL FUEL OIL

analyses have determined that staggered testing 1) is operationally difficult, 2) has negligible impact on component reliability, 3) is not as significant as initially thought, 4) has no impact on failure frequency, 5) introduces additional stress on components such as DGs potentially causing increased component failures rates and component wearout, 6) results in reduced redundancy testing, and 7) increases likelihood of human error by increasing testing intervals. Therefore, the DG System staggered testing requirements have been deleted. This change is designated as less restrictive because the Surveillance is not required to be performed on a STAGGERED TEST BASIS in the ITS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

CTS

3.8 ELECTRICAL POWER SYSTEMS

3.8.3 Diesel Fuel Oil ~~Lube Oil, and Starting Air~~ 1

3.8.1.1
3.8.1.2

LCO 3.8.3 The stored diesel fuel oil ~~lube oil, and starting air~~ subsystem shall be within limits for each required diesel generator (DG). 1

DOC. A2

APPLICABILITY: When associated DG is required to be OPERABLE.

ACTIONS

DOC L.J

- NOTE -
Separate Condition entry is allowed for each DG.

CTS	CONDITION	REQUIRED ACTION	COMPLETION TIME	
DOC L.1	A. One or more DGs with fuel ~~level~~ Volume < ~~[33,000]~~ 46,000 gal and > ~~[28,285]~~ 39,500 gal in storage tank.	A.1 Restore fuel oil ~~level~~ Volume to within limits.	48 hours	2
	~~B. One or more DGs with lube oil inventory < [500] gal and > [425] gal.~~	~~B.1 Restore lube oil inventory to within limits.~~	~~48 hours~~	1
4.8.1.1.2.d footnote*	~~C~~ B. One or more DGs with stored fuel oil total particulates not within limit.	~~C~~ B.1 Restore fuel oil total particulates to within limits.	7 days	1
4.8.1.1.2.c footnote **	~~D~~ C. One or more DGs with new fuel oil properties not within limits.	~~D~~ C.1 Restore stored fuel oil properties to within limits.	30 days	1
	~~E. One or more DGs with starting air receiver pressure < [225] psig and ≥ [125] psig.~~	~~E.1 Restore starting air receiver pressure to ≥ [225] psig.~~	~~48 hours~~	1

CTS

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
4.8.1.1.2.c footnote ***, DOC L.1	(D) ~~G~~. Required Action and associated Completion Time not met. OR One or more DGs with diesel fuel oil, lube oil, or starting air subsystem not within limits for reasons other than Condition A, B, C, D or E. (C) (1)	~~G~~.1 (D) Declare associated DG inoperable.	Immediately	(1)

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
3.8.1.1.b.2, 3.8.1.2.b.2, 4.8.1.1.2.a.2	SR 3.8.3.1	Verify each fuel oil storage tank contains ≥ ~~[33,000]~~ 46,000 gal of fuel.	31 days	(2)
	~~SR 3.8.3.2~~	~~Verify lubricating oil inventory is ≥ [500] gal.~~	~~31 days~~	(1)
DOC A.4	SR 3.8.3.~~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.	In accordance with the Diesel Fuel Oil Testing Program	(1)
	~~SR 3.8.3.4~~	~~Verify each DG air start receiver pressure is ≥ [225] psig.~~	~~31 days~~	(1)
4.8.1.1.2.b.2	SR 3.8.3.~~5~~ (3)	Check for and remove accumulated water from each fuel oil storage tank.	[31] days	(1) (2)

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.3, DIESEL FUEL OIL

1. The ISTS 3.8.3 requirements for lube oil and starting air subsystems have not been included in ITS 3.8.3. The starting air subsystem requirements have been incorporated into ITS 3.8.1. Each DG has two air start receivers, and the pressure limit included in the ITS is the pressure needed for one DG start sequence. The ITS considers the DG to be OPERABLE when one air start receiver has the capacity for one DG start sequence. Therefore, CNP does not consider it appropriate to adopt the starting air subsystem allowances in ISTS 3.8.3. DG lube oil storage requirements are administratively controlled to ensure a sufficient supply of lube oil is available onsite to support at least 7 days of DG operation, similar to the ISTS requirements. Therefore, the ACTIONS and Surveillance Requirements for lube oil are not being retained in ITS 3.8.3. The ITS 3.8.3 title and requirements have been revised, and subsequent requirements are renumbered, as required, to reflect his change.

2. The brackets are removed and the proper plant specific information/value is provided.

Improved Standard Technical Specifications (ISTS) Bases Markup and Justification for Deviations (JFDs)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air 1

BASES

BACKGROUND

Each diesel generator (DG) is provided with a storage tank having a fuel oil capacity sufficient to operate that diesel for a period of 7 days while the DG is supplying maximum post loss of coolant accident load demand discussed in the FSAR, Section [9.5.4.2] 8.4 (Ref. 1). The maximum load demand is calculated using the assumption that a minimum of ~~any two~~ one DGs is available. This onsite fuel oil capacity is sufficient to operate the DGs for longer than the time to replenish the onsite supply from outside sources. 2 3 a INSERT 1

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 unit DG. All outside tanks, ~~pumps,~~ and piping are located underground. 3

For proper operation of the standby DGs, 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 (or Saybolt viscosity), specific gravity (or API gravity), and impurity level. 3

~~The DG lubrication system is designed to provide sufficient lubrication to permit proper operation of its associated DG under all loading conditions. The system is required to circulate the lube oil to the diesel engine working surfaces and to remove excess heat generated by friction during operation. Each engine oil sump contains an inventory capable of supporting a minimum of [7] days of operation. [The onsite storage in addition to the engine oil sump is sufficient to ensure 7 days of continuous operation.] This supply is sufficient to allow the operator to replenish lube oil from outside sources.~~ 1

~~Each DG has an air start system with adequate capacity for five successive start attempts on the DG without recharging the air start receiver(s).~~

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3

INSERT 1

However, while each storage tank is separate between the DGs of a unit, each storage tank is shared with a DG on the other unit.

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BASES

APPLICABLE SAFETY ANALYSES (14)

The initial conditions of Design Basis Accident (DBA) and transient (v) (3) analyses ~~in the FSAR, Chapter [6] (Ref. 4), and~~ in the FSAR, (4) (2) Chapter [15] (Ref. 5), assume Engineered Safety Feature (ESF) systems are OPERABLE. The DGs 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~~, lube oil, and the air start~~ subsystem support~~s~~ the operation of the standby AC power sources, they satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii). (1)

LCO

Stored diesel fuel oil is required to have sufficient supply for 7 days of full load operation. It is also required to meet specific standards for quality. ~~Additionally, sufficient lubricating oil supply must be available to ensure the capability to operate at full load for 7 days.~~ (1) This requirement, in conjunction with an ability to obtain replacement supplies within 7 days, supports the availability of DGs required to shut down the reactor and to maintain it in a safe condition for an anticipated operational ~~occurrence (AOO)~~ transient (3) or a postulated DBA with loss of offsite power. DG day tank fuel requirements, as well as 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 for five successive DG start attempts without recharging the air start receivers.~~ (1)

APPLICABILITY

anticipated operational transient

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 (3) stored diesel fuel oil~~, lube oil, and the starting air subsystem~~ support~~s~~ (5) (1) LCO 3.8.1 and LCO 3.8.2, stored diesel fuel oil~~, lube oil, and starting air~~ (15) is ~~are~~ required to be within limits when the associated DG is required to be OPERABLE.

ACTIONS

The ACTIONS Table is modified by a Note indicating that separate Condition entry is allowed for each DG. This is acceptable, since the Required Actions for each Condition provide appropriate compensatory actions for each inoperable DG subsystem. Complying with the Required Actions for one inoperable DG subsystem may allow for continued

BASES

ACTIONS (continued)

operation, and subsequent inoperable DG subsystem(s) are governed by separate Condition entry and application of associated Required Actions.

A.1

4

In this ~~C~~ondition, the 7 day fuel oil supply for a DG is not available. However, the Condition is restricted to fuel oil level reductions that maintain at least a 6 day supply. These circumstances may be caused by events, such as full load operation required after an inadvertent start while at minimum required level, or feed and bleed operations, which may be necessitated by increasing particulate levels or any number of other oil quality degradations. This restriction allows sufficient time for obtaining the requisite replacement volume and performing the analyses required prior to addition of fuel oil to the tank. A period of 48 hours is considered sufficient to complete restoration of the required level prior to declaring the DG inoperable. This period is acceptable based on the remaining capacity (> 6 days), the fact that procedures will be initiated to obtain replenishment, and the low probability of an event during this brief period.

~~B.1~~

~~With lube oil inventory < 500 gal, sufficient lubricating oil to support 7 days of continuous DG operation at full load conditions may not be available. However, the Condition is restricted to lube oil volume reductions that maintain at least a 6 day supply. This restriction allows sufficient time to obtain the requisite replacement volume. A period of 48 hours is considered sufficient to complete restoration of the required volume prior to declaring the DG inoperable. This period is acceptable based on the remaining capacity (> 6 days), the low rate of usage, the fact that procedures will be initiated to obtain replenishment, and the low probability of an event during this brief period.~~ 1

B ~~C~~.1 1

2 This Condition is entered as a result of a failure to meet the acceptance criterion of SR 3.8.3.~~3~~. 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 1 6

BASES

ACTIONS (continued)

performance has been recently demonstrated (within 31 days), it is prudent to allow a brief period prior to declaring the associated DG inoperable. The 7 day Completion Time allows for further evaluation, resampling and re-analysis of the DG fuel oil.

C ~~D~~.1 (1)

With the new fuel oil properties defined in the Bases for SR 3.8.3.~~4~~ (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 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 DG start and load was required during this time interval and the fuel oil properties were outside limits, there is a high likelihood that the DG would still be capable of performing its intended function. (1)

~~E.1~~

~~With starting air receiver pressure < [225] psig, sufficient capacity for five successive DG start attempts does not exist. However, as long as the receiver pressure is > [125] psig, there is adequate capacity for at least one start attempt, and the DG can be considered OPERABLE while the air receiver pressure is restored to the required limit. A period of 48 hours is considered sufficient to complete restoration to the required pressure prior to declaring the DG inoperable. This period is acceptable based on the remaining air start capacity, the fact that most DG starts are accomplished on the first attempt, and the low probability of an event during this brief period.~~ (1)

D ~~F~~.1

With a Required Action and associated Completion Time not met, or one or more DG's fuel oil ~~lube oil, or starting air~~ subsystem not within limits for reasons other than addressed by Condition~~s~~ A ~~through E~~, B or C (1) the associated DG may be incapable of performing its intended function and must be immediately declared inoperable.

BASES

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 each DG's operation for 7 days at full load. The 7 day period is sufficient time 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

This Surveillance ensures that sufficient lube oil inventory is available to support at least 7 days of full load 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.

1

SR 3.8.3.3 2

1

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: 6

81 2

a. Sample the new fuel oil in accordance with ASTM D4057-[ ] (Ref. 6) 5

5

b. Verify in accordance with the tests specified in ASTM D975-[ ] (Ref. 6) that the sample has an absolute specific gravity at 60/60°F

INSERT 1A 4 3

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3 4 **INSERT 1A**

: (1) when tested in accordance with ASTM D1298-80 (Ref. 5)

INSERT 2

BASES

SURVEILLANCE REQUIREMENTS (continued)

(82) (88) (3) (30) (40) (3) (4)

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

INSERT 3 (2) (31) INSERT 4 (5)

c. Verify that the new fuel oil has a clear and bright appearance with proper color when tested in accordance with ASTM D4176-(7) (Ref. 6). (5) (82) (2)(3)

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.

(6) INSERT 5 (6) (6)

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. 6) 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.

(81) (5) (2)(3) (82) (2)(3) (5)

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.

(5) (83) (2)(3)

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.~~ (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.

3

INSERT 2

, an API gravity of within 0.3 degrees at 60°F when compared to the supplier's certificate, or a specific gravity of within 0.0016 at 60/60° when compared to the supplier's certificate; (2)

3

INSERT 3

or Saybolt viscosity at 100°F of ≥ 32.6 and ≤ 40.1, if gravity was not determined by comparison with supplier's certification, when tested in accordance with ASTM 975-81 (Ref. 5)

3

INSERT 4

when tested in accordance with ASTM D975-81 (Ref. 5);

6

INSERT 5

within 31 days following addition of the new fuel oil to the fuel oil storage tank(s)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.3.4

~~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. [A start cycle is defined by the DG vendor, but usually is measured in terms of time (seconds of cranking) or engine cranking speed.] The pressure specified in this SR is intended to reflect the lowest value at which the [five] starts can be accomplished.~~ 1

~~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.~~

3 SR 3.8.3.6

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 [31] 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 DG 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. 2

REFERENCES

1. U FSAR, Section [9.5.4.2]. 8.4 2 3
2. Regulatory Guide 1.137. October 1979
3. ANSI N195-1976, Appendix B.
4. ~~FSAR, Chapter [6].~~ 3
4 5. U FSAR, Chapter [15]. 14 2 3

BASES

REFERENCES (continued)

INSERT 6 INSERT 7 INSERT 8 INSERT 9

(5) 6. ASTM Standards: D4057-[ ], D975-[ ], D4176-[ ], ~~D1552-[ ]~~, D2622-[ ], and D2276-[ ], Method A. (2) (3)

INSERT 10 INSERT 11

(6) 7. ASTM Standards, D975-[ ], Table 1. (2) (3)

INSERT 12

INSERT 6

81 (Standard Practice for Manual Sampling of Petroleum and Petroleum Products)

INSERT 7

D1298-80 (Standard Test Method for Density, Relative Density (Specific Gravity), or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method),

INSERT 8

81 (Standard Specification for Diesel Fuel Oils)

INSERT 9

82 (Standard Test Method for Free Water and Particulate Contamination in Distillate Fuels (Visual Inspection Procedures))

INSERT 10

82 (Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-ray Fluorescence Spectrometry)

INSERT 11

83 (Standard Test Method for Particulate Contaminant in Aviation Fuel by Line Sampling)

INSERT 12

81 (Standard Specification for Diesel Fuel Oils),

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JUSTIFICATION FOR DEVIATIONS
ITS 3.8.3 BASES, DIESEL FUEL OIL

1. Changes are made to the Bases to reflect changes made to the Specifications.

2. The brackets are removed and the proper plant specific information/value is provided.

3. Changes are made (additions, deletions, and/or changes) to the ISTS Bases that reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

4. Editorial change made for enhanced clarity.

5. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

6. Changes are made to the Bases to reflect the actual Specification.

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.3, DIESEL FUEL OIL

There are no specific NSHC discussions for this Specification.

ATTACHMENT 4

ITS 3.8.4, DC Sources - Operating

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

LA.1

electrical power subsystems

See ITS 3.8.9

LCO 3.8.4.a 3.8.2.3 The following D.C. ~~bus trains~~ shall be ~~energized and~~ OPERABLE ~~with tie breakers between bus trains open~~:

See ITS 3.8.9

B TRAIN ~~AB~~ ~~consisting of 250-volt D.C. bus AB~~, 250-~~volt~~ D.C. ~~battery~~ bank ~~No.~~ 1AB, and ~~a full capacity charger, and~~ LA.1

See ITS 3.8.9

A TRAIN ~~CD~~ ~~consisting of 250-volt D.C. bus CD~~, 250-~~volt~~ D.C. ~~battery~~ bank ~~No.~~ 1CD, and ~~a full capacity charger.~~ LA.1

Add proposed LCO 3.8.4.c

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

ACTION

a. With one 250-volt D.C. bus inoperable, restore the inoperable bus to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

See ITS 3.8.9

L.1

ACTIONS A and B b. With one 250-volt D.C. battery ~~and/or its charger~~ inoperable, restore the inoperable battery and/or charger to OPERABLE status within ~~2 hours~~ ~~or~~ be in at least HOT

ACTION C STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Add proposed ACTION E A.2

Add proposed SR Notes 1 and 2 M.1

SURVEILLANCE REQUIREMENTS

4.8.2.3.1 Each D.C. bus train shall be determined OPERABLE and energized with tie breakers open at least once per 7 days by verifying correct breaker alignment and indicated power availability.

See ITS 3.8.9

4.8.2.3.2 Each 250-volt battery bank and charger shall be demonstrated OPERABLE

SR 3.8.4.1 a. At least once per 7 days by verifying that:

1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,

2. The pilot cell specific gravity, corrected to 77°F, and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200,

3. The pilot cell voltage is greater than or equal to 2.13 volts, and

See ITS 3.8.6

SR 3.8.4.1 4. The overall battery voltage is greater than or equal to ~~250 volts~~ to the minimum established float voltage L.5

Add proposed SR 3.8.4.4 M.1

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

b. At least once per 92 days by verifying that:

1. The voltage of each connected cell is greater than or equal to 2.13 volts under float charge.

2. The specific gravity, corrected to 77°F, and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test, and — See ITS 3.8.6

3. The electrolyte level of each connected cell is between the top of the minimum level indication mark and the bottom of the maximum level indication mark.

SR 3.8.4.2 — c. At least once per ~~18~~ 24 ~~months~~ by: — L.2

1. Verifying that the cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance, — L.3

2. Removing visible corrosion and verifying that the cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material.

SR 3.8.4.2 — 3. Verifying that the battery charger will supply at least 300 amperes at greater than or equal to 250 volts for at least 4 hours.

SR 3.8.4.3 — d. At least once per ~~18~~ 24 ~~months~~, ~~perform~~ a battery service test during shutdown (MODES 5 or 6) by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the actual or simulated emergency loads for the design duty cycle. The battery charger will be disconnected throughout the test. — L.2 A.3 L.4 LA.2

e. At least once per 60 months, conduct a performance test of battery capacity during shutdown (MODES 5 or 6), by verifying that the battery capacity is at least 80% of the manufacturer's rating. — See ITS 3.8.6

Note 1 to SR 3.8.4.3 — When this test is performed in place of a battery service test, a modified performance test shall be conducted.

Annual performance tests of battery capacity shall be given to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% from its capacity on the previous performance test, or is below 90% of the manufacturer's rating. If the battery has reached 85% of service life, delivers a capacity of 100% or greater of the manufacturer's rated capacity, and has shown no signs of degradation, performance testing at two year intervals is acceptable until the battery shows signs of degradation. — See ITS 3.8.6

A.1

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ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING - TRAIN N BATTERY SYSTEM

LIMITING CONDITION FOR OPERATION

electrical power subsystems

LCO 3.8.4.b 3.8.2.5 The following D.C ~~bus train~~ shall be ~~energized and~~ OPERABLE: — See ITS 3.8.9

TRAIN N ~~consisting of 250-volt D.C. bus N~~, 250-volt D.C. battery bank N, and a full capacity charger. — LA.1

LA.1

APPLICABILITY: MODES 1, 2 and 3.

ACTION

ACTION D With the Train N battery system inoperable, declare the turbine driven Auxiliary Feedwater Pump inoperable ~~and follow the ACTION statement of Specification 3.7.1.2~~. — A.4

SURVEILLANCE REQUIREMENTS

4.8.2.5.1 The D.C. bus train N shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability. — See ITS 3.8.9

4.8.2.5.2 The 250-volt battery bank and charger shall be demonstrated OPERABLE:

SR 3.8.4.1 a. At least once per 7 days by verifying that:

1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,

2. The pilot cell specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200, — See ITS 3.8.6

3. The pilot cell voltage is greater than or equal to 2.13 volts, and

SR 3.8.4.1 4. The overall battery voltage is greater than or equal ~~to 250 volts~~ to the minimum established float voltage. — L.5

b. At least once per 92 days by verifying that:

1. The voltage of each connected cell is greater than or equal to 2.13 volts under float charge.

2. The specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test, and — See ITS 3.8.6

3. The electrolyte level of each connected cell is between the top of the minimum level indication mark and the bottom of the maximum level indication mark.

ITS

A.1

3/4.8 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.8.4.2 c. At least once per ~~18~~ 24 months by: L.2

1. ~~Verifying that the cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance.~~ L.3

2. ~~Removing visible corrosion and verifying that the cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material.~~

SR 3.8.4.2 3. Verifying that the battery charger will supply at least 25 amperes at greater than or equal to 250 volts for at least 4 hours.

SR 3.8.4.3 d. At least once per ~~18~~ 24 months perform a battery service test, ~~during shutdown (MODES 5 or 6),~~ by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the actual or simulated emergency loads for the design duty cycle ~~with the battery charger disconnected.~~ L.2 A.3 L.4 LA.2

e. ~~At least once per 60 months, conduct a performance test of battery capacity during shutdown (MODES 5 or 6), by verifying that the battery capacity is at least 80% of the manufacturer's rating.~~ When this test is performed in place of a battery service test, a modified performance test shall be conducted. See ITS 3.8.6

Note 1 to SR 3.8.4.3

Annual performance tests of battery capacity shall be given to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% from its capacity on the previous performance test, or is below 90% of the manufacturer's rating. If the battery has reached 85% of service life, delivers a capacity of 100% or greater of the manufacturer's rated capacity, and has shown no signs of degradation, performance testing at two year intervals is acceptable until the battery shows signs of degradation. See ITS 3.8.6

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

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ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING

LA.1

LIMITING CONDITION FOR OPERATION

electrical power subsystems

See ITS 3.8.9

LCO 3.8.4.a 3.8.2.3 The following D.C. ~~bus trains~~ shall be energized and OPERABLE with tie breakers between bus trains open:

B

TRAIN ~~AB~~ consisting of 250-volt D.C. bus AB, 250-volt D.C. battery bank No. 2AB, and a full capacity charger, and

See ITS 3.8.9

LA.1

A

TRAIN ~~CD~~ consisting of 250-volt D.C. bus CD, 250-volt D.C. battery bank No. 2CD, and a full capacity charger.

See ITS 3.8.9

LA.1

Add proposed LCO 3.8.4.c

A.2

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION

a. With one 250-volt D.C. bus inoperable, restore the inoperable bus to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

See ITS 3.8.9

L.1

ACTIONS A and B

b. With one 250-volt D.C. battery ~~and/or its charger~~ inoperable, restore the inoperable battery and/or charger to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION C

Add proposed ACTION E

A.2

SURVEILLANCE REQUIREMENTS

Add proposed SR Notes 1 and 2

M.1

4.8.2.3.1 Each D.C. bus train shall be determined OPERABLE and energized with tie breakers open at least once per 7 days by verifying correct breaker alignment and indicated power availability.

See ITS 3.8.9

4.8.2.3.2 Each 250-volt battery bank and charger shall be demonstrated OPERABLE

SR 3.8.4.1

a. At least once per 7 days by verifying that:

1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,

2. The pilot cell specific gravity, corrected to 77°F, and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200,

3. The pilot cell voltage is greater than or equal to 2.13 volts, and

See ITS 3.8.6

SR 3.8.4.1

4. The overall battery voltage is greater than or equal to ~~250 volts~~

to the minimum established float voltage

L.5

Add proposed SR 3.8.4.4

M.1

ITS

A.1

3/4.8 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

b. At least once per 92 days by verifying that:

1. The voltage of each connected cell is greater than or equal to 2.13 volts under float charge.

2. The specific gravity, corrected to 77°F, and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test, and

3. The electrolyte level of each connected cell is between the top of the minimum level indication mark and the bottom of the maximum level indication mark.

See ITS 3.8.6

SR 3.8.4.2 — c. At least once per ~~18~~ 24 months by: — L.2

1. ~~Verifying that the cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance,~~

2. ~~Removing visible corrosion and verifying that the cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material,~~

L.3

SR 3.8.4.2 — 3. Verifying that the battery charger will supply at least 300 amperes at greater than or equal to 250 volts for at least 4 hours.

L.2

SR 3.8.4.3 — d. At least once per ~~18~~ 24 months, perform a battery service test during shutdown (MODES 5 or 6), by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the actual or simulated emergency loads for the design duty cycle. The battery charger will be disconnected throughout the test.

A.3

L.4

LA.2

e. At least once per 60 months, conduct a performance test of battery capacity during shutdown (MODES 5 or 6), by verifying that the battery capacity is at least 80% of the manufacturer's rating. When this test is performed in place of a battery service test, a modified performance test shall be conducted.

See ITS 3.8.6

Note 1 to SR 3.8.4.3

Annual performance tests of battery capacity shall be given to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% from its capacity on the previous performance test, or is below 90% of the manufacturer's rating. If the battery has reached 85% of service life, delivers a capacity of 100% or greater of the manufacturer's rated capacity, and has shown no signs of degradation, performance testing at two year intervals is acceptable until the battery shows signs of degradation.

See ITS 3.8.6

ITS

A.1

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ITS 3.8.4

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING - TRAIN N BATTERY SYSTEM

LIMITING CONDITION FOR OPERATION

electrical power subsystems — LA.1

LCO 3.8.4.b — 3.8.2.5 The following D.C ~~bus train~~ shall be ~~energized and~~ OPERABLE: — See ITS 3.8.9

TRAIN N ~~consisting of 250-volt D.C. bus N,~~ 250-volt D.C. battery bank N, and a full capacity charger. — LA.1

APPLICABILITY: MODES 1, 2 and 3.

ACTION

ACTION D — With the Train N battery system inoperable, declare the turbine driven Auxiliary Feedwater Pump inoperable ~~and follow the ACTION statement of Specification 3.7.1.2.~~ — A.4

SURVEILLANCE REQUIREMENTS

4.8.2.5.1 The D.C. bus train N shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability. — See ITS 3.8.9

4.8.2.5.2 The 250-volt battery bank and charger shall be demonstrated OPERABLE:

SR 3.8.4.1 — a. At least once per 7 days by verifying that:

1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,

2. The pilot cell specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200,

3. The pilot cell voltage is greater than or equal to 2.13 volts, and

See ITS 3.8.6

SR 3.8.4.1 — 4. The overall battery voltage is greater than or equal ~~to 250 volts~~ to the minimum established float voltage — L.5

b. At least once per 92 days by verifying that:

1. The voltage of each connected cell is greater than or equal to 2.13 volts under float charge.

2. The specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test, and

3. The electrolyte level of each connected cell is between the top of the minimum level indication mark and the bottom of the maximum level indication mark.

See ITS 3.8.6

ITS 3.8.4

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.8.4.2 c. At least once per ~~18~~ 24 months by: L.2

1. ~~Verifying that the cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance.~~ L.3

2. ~~Removing visible corrosion and verifying that the cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material.~~

SR 3.8.4.2 3. Verifying that the battery charger will supply at least 25 amperes at greater than or equal to 250 volts for at least 4 hours.

SR 3.8.4.3 d. At least once per ~~18~~ 24 months perform a battery service test, during shutdown (MODES 5 or 6), by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the actual or simulated emergency loads for the design duty cycle with the battery charger disconnected. L.2 A.3 L.4 LA.2

e. At least once per 60 months, conduct a performance test of battery capacity during shutdown (MODES 5 or 6), by verifying that the battery capacity is at least 80% of the manufacturer's rating. When this test is performed in place of a battery service test, a modified performance test shall be conducted. See ITS 3.8.6

Note 1 to SR 3.8.4.3

Annual performance tests of battery capacity shall be given to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% from its capacity on the previous performance test, or is below 90% of the manufacturer's rating. If the battery has reached 85% of service life, delivers a capacity of 100% or greater of the manufacturer's rated capacity, and has shown no signs of degradation, performance testing at two year intervals is acceptable until the battery shows signs of degradation. See ITS 3.8.6

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

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DISCUSSION OF CHANGES
ITS 3.8.4, DC SOURCES - OPERATING

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A.2 CTS 3.8.2.3 only provides requirements for the unit DC Sources; it does not provide any requirements for the opposite unit DC Sources. CTS LCO 3.7.4.1 requires two independent essential service water loops to be OPERABLE. The CTS 3/4.7.4 Bases state that the LCO also ensures that an inoperable opposite unit ESW pump does not result in flow being diverted from an OPERABLE unit ESW pump sharing the same header. Therefore, if the header between the two units is not isolated, both ESW pumps on the same header support both units. The CTS definition of OPERABILITY requires all attendant equipment (including both the normal and emergency electrical power sources) to be capable of performing its required function. Thus, the opposite unit DC Sources may be required to be OPERABLE. In addition, this would require declaring the affected ESW train inoperable when an associated opposite unit DC Source is inoperable. ITS LCO 3.8.4.c requires opposite unit Train A and Train B 250 VDC electrical power subsystems capable of supplying the opposite unit Essential Service Water (ESW) components required by LCO 3.7.8, "Essential Service Water (ESW) System," to be OPERABLE. Also, ITS 3.8.4 ACTION E has been added and covers the situation when a required opposite unit Train A or Train B or both electrical power subsystems are inoperable. ITS 3.8.4 ACTION E requires the immediate declaration that the associated ESW train(s) are inoperable. This changes the CTS by providing an explicit LCO and ACTION for the opposite unit Train A and B 250 VDC Sources.

The purpose of ITS LCO 3.8.4.c is to ensure the appropriate DC Sources are available to support the ESW System when the ESW System headers between the units are not isolated. This change is acceptable because safety related equipment is shared between both units when an ESW header between the two units is open. The added LCO requirement is consistent with the CTS since the definition of OPERABLE - OPERABILITY requires all attendant equipment to be capable of performing its required function, and the added ACTION is also consistent with the CTS. This change is designated as administrative because the CTS requirements remain unchanged.

A.3 CTS 4.8.2.3.2.d requires the performance of a battery service test on the Train A and Train B batteries. CTS 4.8.2.5.2.d requires the performance of a battery service test on the Train N battery. These tests must be performed during shutdown (MODES 5 or 6). ITS SR 3.8.4.3 requires the verification that the 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. Note 2 to ITS SR 3.8.4.3 specifies that this Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. In addition, Note 2 states that

DISCUSSION OF CHANGES
ITS 3.8.4, DC SOURCES - OPERATING

credit may be taken for unplanned events that satisfy this SR. This changes the CTS by adding the allowance that credit may be taken for unplanned events that satisfy the associated SR. Additional changes to CTS 4.8.2.3.2.d and CTS 4.8.2.5.2.d are discussed in DOC L.4.

The ITS Note clearly presents the allowance of the current practice of taking credit for unplanned events, provided the necessary data is obtained. This change is designated as administrative because it does not result in technical changes to the CTS.

A.4 CTS 3.8.2.5 Action states that with the Train N 250 VDC battery and/or its charger inoperable, to declare the turbine driven auxiliary feedwater pump inoperable "and follow the Action statement of Specification 3.7.1.2." ITS 3.8.4 ACTION D covers the situation when the Train N 250 VDC electrical power subsystem is inoperable. ITS 3.8.4 Required Action D.1 is to immediately declare the turbine driven auxiliary feedwater train inoperable. This changes the CTS by deleting the detail to follow the Action statement of Specification 3.7.1.2.

The purpose of the CTS 3.8.2.5 Action to follow the Action Statement of Specification 3.7.1.2 is to alert the user of the appropriate Specification to enter when the turbine driven auxiliary feedwater train is declared inoperable. It is an ITS convention to not include these types of cross-references. This change is designated as administrative as it incorporates an ITS convention with no technical change to the CTS.

MORE RESTRICTIVE CHANGES

M.1 CTS 4.8.2.3.2 specifies the DC Source Surveillance requirements associated with the given unit. It does not explicitly specify the Surveillance Requirements for the DC Sources associated with the opposite unit. CTS LCO 3.7.4.1 requires two independent essential service water loops to be OPERABLE. The CTS 3/4.7.4 Bases state that the LCO also ensures that an inoperable opposite unit ESW pump does not result in flow being diverted from an OPERABLE unit ESW pump sharing the same header. Therefore, if the header between the two units is not isolated, both ESW pumps on the same header support both units. The CTS definition of OPERABLE - OPERABILITY requires all attendant equipment (including both the normal and emergency electrical power sources) to be capable of performing its required function. However, there are no specific requirements in the CTS requiring testing of the opposite unit DC Sources. ITS LCO 3.8.4.c requires opposite unit Train A and Train B 250 VDC electrical power subsystem(s) capable of supplying the opposite unit ESW components required by LCO 3.7.8, "Essential Service Water (ESW) System," to be OPERABLE. This change is discussed in DOC A.2. An explicit Surveillance Requirement has been added (ITS SR 3.8.4.4) that requires certain Surveillance Requirements to be met for the opposite unit 250 VDC Sources. This Surveillance specifies that the opposite unit Train A and Train B 250 VDC electrical power subsystem SRs are applicable. Two Notes have been added to the Surveillance Table to clarify which Surveillances apply to the unit DC Sources and which are applicable to the opposite unit DC Sources. This changes the CTS by adding explicit Surveillance Requirements for these opposite unit 250 VDC Sources.

DISCUSSION OF CHANGES
ITS 3.8.4, DC SOURCES - OPERATING

The purpose of Surveillance Requirements is to ensure the OPERABILITY of required equipment. An explicit SR (ITS SR 3.8.4.4) has been added which requires the opposite unit DC Sources SRs to be applicable. The added Surveillance helps to ensure the required opposite unit 250 VDC electrical power subsystems remain OPERABLE. This change is designated as more restrictive because an additional Surveillance Requirement will be applicable to the CTS.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.8.2.3 states that DC bus trains AB and CD shall be energized and OPERABLE with tie breakers between bus trains open. The details of what constitutes Train AB and Train CD are also listed. Train AB consists of 250 VDC bus AB, 250 VDC battery bank No. 1AB (Unit 1) and 2AB (Unit 2), and a full capacity charger. Train CD consists of 250 VDC bus CD, 250 VDC battery bank No. 1CD (Unit 1) and 2CD (Unit 2), and a full capacity charger. CTS 3.8.2.5 states that DC bus Train N shall be energized and OPERABLE. The details of what constitutes the N train are also listed. Train N consists of the 250 VDC bus N, 250 VDC battery bank N, and a full capacity charger. ITS LCO 3.8.4 requires the DC electrical power subsystems to be OPERABLE, which include the Train A and Train B 250 VDC electrical power subsystems (LCO 3.8.4.a), and the Train N 250 VDC electrical power subsystem (LCO 3.8.4.b). This changes the CTS by moving the details of the components of the DC Sources (battery and charger) from the CTS to the Bases. The 250 VDC buses are part of the Distribution System Specification (ITS 3.8.9) and all aspects of the buses are addressed in ITS 3.8.9.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the OPERABILITY statement for the Train A and Train B 250 VDC electrical power subsystems and the Train N 250 VDC electrical power subsystem. Also this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.2 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.8.2.3.2.d requires the performance of a battery service test on the Train A and Train B batteries. CTS 4.8.2.5.2.d requires the performance of a battery service test on the Train N battery. Each of these Surveillance Requirements specifies that the battery charger must be

DISCUSSION OF CHANGES
ITS 3.8.4, DC SOURCES - OPERATING

disconnected throughout the test. ITS SR 3.8.4.3 requires the verification that the 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. This changes the CTS by moving details concerning the status of the battery charger (disconnected throughout the test) from the CTS to the ITS Bases.

The removal of these details for performing Surveillance Requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement to perform the battery service test on the Train A, Train B, and Train N batteries. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications to the ITS Bases.

LESS RESTRICTIVE CHANGES

L.1 *(Category 4 – Relaxation of Required Action)* CTS 3.8.2.3 Action b states that with one Train A or Train B 250 VDC battery and/or its charger inoperable, to restore the inoperable battery and/or charger to OPERABLE status within 2 hours. ITS 3.8.4 ACTION A has been added which covers the condition for one required Train A or Train B battery charger inoperable. ITS 3.8.4 Required Action A.1 requires the restoration of the battery terminal voltage to greater than or equal to the minimum established float voltage within 2 hours. ITS 3.8.4 Required Action A.2 requires the verification that the battery float current is $\leq$ 2 amps once per 12 hours and ITS 3.8.4 Required Action A.3 requires the restoration of the battery charger to OPERABLE status within 7 days. This changes the CTS by extending the time a required battery charger may be inoperable.

The purpose of CTS 3.8.2.3 is to ensure that the Train A and Train B DC Sources are capable of supplying the associated loads during a design bases accident. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the repair period. The proposed ITS 3.8.4 ACTION A provides a 7 day restoration time for an inoperable Train A or Train B battery charger. However, this time is contingent on a focused and tiered approach to assuring adequate battery capability is maintained. The first priority for the operator is to minimize the battery discharge, which is required to be terminated within 2 hours (ITS 3.8.4 Required Action A.1). Presuming that the battery discharge (if occurring) can be terminated and that the DC bus remains energized (as required by a separate LCO), there is reasonable basis for extending the restoration time for an inoperable charger beyond the 2 hour limit. The second tiered action proposes 12 hours to establish that the battery has sufficient capacity to perform its assumed duty cycle (which may involve some recharging of lost capacity that occurred during the initial hours). Given the choice of a unit shutdown in this condition (as currently required) versus a 12 hour determination (at the end of which it is reasonable to assume the battery can be shown to have its assumed capacity) followed by a 7 day restoration period, this appears to be an acceptable relaxation. Since the focus of this allowance is that battery capacity be preserved and assured, the means of accomplishing this may be to utilize the spare battery charger that could be employed within the initial 2 hours, while in other cases it may be the degraded inservice charger that can continue to float the battery. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.2 *(Category 10 – 18 to 24 Month Surveillance Frequency Change, Non-Channel Calibration Type)* CTS 4.8.2.3.2.c.3 requires the verification that the required Train A and Train B battery chargers will supply at least 300 amperes at greater than or equal to 250 VDC for at least 4 hours. CTS 4.8.2.3.2.d requires the performance of a battery service test on the Train A and Train B batteries by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the actual or simulated emergency loads for the design duty cycle. CTS 4.8.2.5.2.c.3 requires the verification that the Train N battery charger will supply at least 25 amperes at greater than or equal to 250 VDC for at least 4 hours. CTS 4.8.2.5.2.d requires the performance of a battery service test on the Train N battery by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the actual or simulated emergency loads for the design duty cycle. The Frequency of performance of these Surveillances is every 18 months. ITS SR 3.8.4.2 requires the verification that each required Train A and Train B battery charger supplies $\geq$ 300 amps and the required Train N battery charger supplies $\geq$ 25 amps at $\geq$ 250 VDC for $\geq$ 4 hours. ITS SR 3.8.4.3 requires the verification that the 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. The Frequency of testing of ITS SR 3.8.4.2 and ITS SR 3.8.4.3 is once every 24 months. This changes the CTS by extending the Frequency of the Surveillance from 18 months (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2) to 24 months (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2).

The purpose of CTS 4.8.2.3.2.c.3 and CTS 4.8.2.5.2.c.3 is to ensure the associated battery chargers can perform their associated design function. The purpose of CTS 4.8.2.3.2.d and CTS 4.8.2.5.2.d is to ensure the batteries can perform their associated design function. This change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical surveillance

DISCUSSION OF CHANGES
ITS 3.8.4, DC SOURCES - OPERATING

data and maintenance data sufficient to determine failure modes have shown that these tests normally pass their Surveillances at the current Frequency. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. Extending the Surveillance test interval for the charger test and the battery service test is acceptable because the battery and charger are checked during the cycle by ensuring the battery terminal voltage is greater than or equal to the minimum established float voltage. Additional justification for extending the Surveillance test interval is that the 250 VDC Sources are designed to be single failure proof, therefore ensuring system availability in the event of a failure of a 250 VDC train. Based on the inherent system and component reliability and the testing performed during the operating cycle, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 24 month Surveillance Frequency, if performed at the maximum interval allowed by ITS SR 3.0.2 (30 months) does not invalidate any assumptions in the plant licensing basis. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.3 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.8.2.3.2.c.1, for the Train A and Train B batteries, and CTS 4.8.2.5.2.c.1, for the Train N battery, require the verification that the cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance. CTS 4.8.2.3.2.c.2, for the Train A and Train B batteries, and CTS 4.8.2.5.2.c.2, for the Train N battery, require the removal of visible corrosion and verifying that the cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material. ITS 3.8.4 does not include these requirements for battery inspections, the removal of visible corrosion, and the verification that the cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material. This changes the CTS by deleting the explicit battery requirements from the Technical Specifications.

The purpose of CTS 4.8.2.3.2.c.1 and CTS 4.8.2.3.2.c.2, for the Train A and Train B batteries, and CTS 4.8.2.5.2.c.1 and CTS 4.8.2.5.2.c.2, for the Train N battery, is to ensure that the proper preventative maintenance type of battery activities are performed. In accordance with ITS SR 3.0.1, when any SR is not met, the LCO is not met. This is based on the premise that SRs represent the minimum acceptable requirements for OPERABILITY of the required equipment. However, the failure to meet these specific Surveillances do not necessarily mean that the equipment is not capable of performing its safety function. When the Train A and Train B batteries are capable of meeting ITS SR 3.8.4.1, the battery terminal voltage verification and ITS SR 3.8.4.3, the battery capacity test, they are considered to be able to meet their safety function. This also applies to the equivalent Train N SRs. The Surveillances that are proposed to be deleted are considered preventative maintenance type activities and are not considered the minimum acceptable requirements for OPERABILITY of the batteries. This change is acceptable because the SR requirements proposed in ITS 3.8.4 continue to ensure that the batteries are maintained consistent with the safety analyses and licensing basis. In addition, ITS 5.5.15 "Battery Monitoring and Maintenance Program," requires a program for battery maintenance based on the recommendations of IEEE 450-1995. The requirement to perform these battery preventative maintenance activities are consistent with IEEE 450-1995, and as such, will be maintained in the CNP procedures implementing ITS 5.5.15. This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

L.4 *(Category 12 – Deletion of Surveillance Requirement Shutdown Performance Requirements)* CTS 4.8.2.3.2.d requires the performance of a battery service test on the Train A and Train B batteries. CTS 4.8.2.5.2.d requires the performance of a battery service test on the Train N battery. These tests must be performed during shutdown (MODES 5 or 6). ITS SR 3.8.4.3 requires the verification that the 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. Note 2 to ITS SR 3.8.4.3 specifies that this Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the unit is maintained or enhanced. This changes the CTS by allowing the test to be performed in MODES other than MODE 5 or 6 as long as an assessment determines the safety of the unit is maintained or enhanced.

The purpose of the shutdown restrictions in CTS 4.8.2.3.2.d and CTS 4.8.2.5.2.d is to ensure the batteries are not tested in a condition that may compromise unit safety. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. The proposed Surveillance does not include the strict restriction on unit conditions. The control of the unit conditions appropriate to perform the test is an issue for procedures and scheduling, and has been determined by the NRC Staff to be unnecessary as a Technical Specification restriction. As indicated in Generic Letter 91-04, allowing this control is consistent with the vast majority of other Technical Specification Surveillances that do not dictate unit conditions for the Surveillance. This change is designated as less restrictive because the Surveillance may be performed at plant conditions other than shutdown.

L.5 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.8.2.3.2.a.4 requires the Train A and Train B 250 VDC batteries to have an overall voltage of greater than or equal to 250 VDC. CTS 4.8.2.5.2.a.4 requires the Train N 250 VDC battery overall voltage to be greater than or equal is 250 VDC. ITS SR 3.8.4.1 requires the verification that the battery terminal voltage is greater than or equal to the minimum established float voltage. This changes the CTS by deleting the actual value for the minimum overall battery voltage.

The purpose of CTS 4.8.2.3.2.a.4 and 4.8.2.5.2.a.4 is to help ensure the effectiveness of the batteries to perform their intended function. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. This changes the CTS by deleting the actual battery terminal voltage limit (250 VDC) and replacing it with the minimum established design limit. This change is acceptable since the proposed value will continue to ensure that the battery

DISCUSSION OF CHANGES
ITS 3.8.4, DC SOURCES - OPERATING

remains OPERABLE to perform its specified safety function. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

CTS

3.8 ELECTRICAL POWER SYSTEMS

3.8.4 DC Sources - Operating

LCO 3.8.2.3
LCO 3.8.2.5

LCO 3.8.4 The [Train A and Train B] DC electrical power subsystems shall be OPERABLE. following : ①

INSERT 1 ①

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

INSERT 2 ①

ACTIONS

DOC L.1

CONDITION (required)	REQUIRED ACTION	COMPLETION TIME
A. One [or two] battery charger[s on one train] inoperable. (Train A or Train B)	A.1 Restore battery terminal voltage to greater than or equal to the minimum established float voltage.	2 hours ②
	AND	
	A.2 Verify battery float current ≤ [2] amps.	Once per [12] hours ②
	AND	
	A.3 Restore (required) battery charger[s] to OPERABLE status.	7 days ②
[B. One [or two] batter[y][ies on one train] inoperable. (LCO 3.8.2.3 Action b)	B.1 Restore batter[y][ies] to OPERABLE status	[2] hours] ⑦
C. B. One DC electrical power subsystem inoperable for reasons other than Condition A [or B]. (LCO 3.8.2.3 Action b)	C.1 B.1 Restore DC electrical power subsystem to OPERABLE status.	[2] hours ① ② ⑦ ② ⑦
D. C. Required Action and Associated Completion Time (of Condition A or B) not met. (LCO 3.8.2.3 Action b) ①	D.1 Be in MODE 3.	6 hours ⑦ ①
	AND C	
	D.2 Be in MODE 5.	36 hours ⑦

INSERT 3 ①

1 **INSERT 1**

LCO 3.8.2.3 a. Train A and Train B 250 VDC electrical power subsystems;

LCO 3.8.2.5 b. Train N 250 VDC electrical power subsystem; and

DOC A.2 c. Unit 2 (Unit 1) and Unit 1 (Unit 2) Train A and Train B 250 VDC electrical power subsystems capable of supplying the Unit 2 (Unit 1) and Unit 1 (Unit 2) Essential Service Water System components required by LCO 3.7.8, "Essential Service Water (ESW) System."

1 **INSERT 2**

-NOTE-
Train N 250 VDC electrical power subsystem is not required to be OPERABLE in MODE 4.

1 **INSERT 3**

3.8.2.5 Action	D. Train N DC electrical power subsystem inoperable.	D.1 Declare the turbine driven auxiliary feedwater train inoperable.	Immediately
DOC A.2	E. One or both required Unit 2 (Unit 1) and Unit 1 (Unit 2) Train A and Train B electrical power subsystems inoperable.	E.1 Declare the associated ESW train(s) inoperable.	Immediately

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CTS

SURVEILLANCE REQUIREMENTS INSERT 4 (1)

CTS		SURVEILLANCE	FREQUENCY	
4.8.2.3.2.a.4, 4.8.2.5.2.a.4	SR 3.8.4.1	Verify battery terminal voltage is greater than or equal to the minimum established float voltage.	7 days	
4.8.2.3.2.c.3, 4.8.2.5.2.c.3 INSERT 4A INSERT 4B	SR 3.8.4.2	Verify each battery charger supplies ≥ [400] 300 amps at ~~greater than or equal to the minimum established~~ ~~float voltage~~ ≥ 250 VDC for ≥ [8] 4 hours. (4) (6) ~~OR~~ ~~Verify each battery charger can recharge the battery to the fully charged state within [24] hours while supplying the largest combined demands of the various continuous steady state loads, after a battery discharge to the bounding design basis event discharge state.~~ (6)	[18] 24 months	(1) (2) (3) (2) (1)
4.8.2.3.2.e, 4.8.2.5.2.e	SR 3.8.4.3	- NOTES - 1. The modified performance discharge test in SR 3.8.6.6 may be performed in lieu of SR 3.8.4.3. 2. This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the ~~plant~~ unit is maintained or enhanced. INSERT 5		(4) (5)
4.8.2.3.2.d, 4.8.2.5.2.d		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] 24 months	(2)

INSERT 6 (1)

1 **INSERT 4**

-NOTES-

DOC M.1 1. SR 3.8.4.1 though SR 3.8.4.3 are applicable only to Unit 1 (Unit 1) and Unit 2 (Unit 2) DC electrical power subsystems.

2. SR 3.8.4.4 is applicable only to the required Unit 2 (Unit 1) and Unit 1 (Unit 2) DC electrical powér subsystem(s).

1 3 **INSERT 4A**

required Train A and Train B

1 3 **INSERT 4B**

and the required Train N battery charger supplies $\geq$ 25 amps

5 **INSERT 5**

Credit may be taken for unplanned events that satisfy this SR.

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1 INSERT 6

DOC M.1	SR 3.8.4.4	-NOTE- When Unit 2 (Unit 1) and Unit 1 (Unit 2) is in MODE 5 or 6, or moving irradiated fuel assemblies in the containment or auxiliary building, the following Unit 2 (Unit 1) and Unit 1 (Unit 2) SRs are not required to be performed: SR 3.8.4.3. For the Unit 2 (Unit 1) and Unit 1 (Unit 2) Train A and Train B 250 VDC electrical power subsystems, the SRs of the Unit 2 (Unit 1) and Unit 1 (Unit 2) Specification 3.8.4 are applicable.	In accordance with applicable SRs

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.4, DC SOURCES - OPERATING

1. Additional requirements were added to ISTS LCO 3.8.4 to ensure the appropriate DC Sources are OPERABLE during unit operation in MODES 1, 2, 3 and 4. The new requirements were added as LCO 3.8.4.b and LCO 3.8.4.c. LCO 3.8.4.b and the Applicability Note have been added to reflect existing requirements associated with the Train N 250 VDC Source, which supports the turbine driven auxiliary feedwater train. The Applicability of this DC electrical power subsystem is consistent with the turbine driven auxiliary feedwater train. LCO 3.8.4.c has been added due to a shared system (Essential Service Water System) between both units. ITS 3.8.4 Conditions A, B, and C have been modified to apply only for Train A and Train B 250 VDC Sources. ACTION D has been added to cover the condition when the Train N 250 VDC Source is inoperable and ACTION E has been added to cover inoperabilities associated with opposite unit DC Source inoperabilities. The Required Actions are to declare the associated components inoperable. This is consistent with the current licensing basis. Two Notes have been added to the Surveillance Requirements Table and an additional Surveillance (SR 3.8.4.4) has been added to clearly define the Applicability of the Surveillances for both units and to ensure the opposite unit DC Sources are OPERABLE, when required.

2. The brackets have been removed and the proper plant specific information/value has been provided.

3. The term "required" has been added since each DC Source has two battery chargers, but only one is required to be OPERABLE.

4. Changes are made (additions, deletions, and/or changes) to the ISTS, which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

5. TSTF-283, Rev. 3, was approved by the NRC on April 13, 2000. However, when NUREG-1431, Rev. 2, was issued, this TSTF was not completely included. Therefore, changes approved by TSTF-283, Rev. 3, have been made.

6. The current licensing basis battery charger design voltage output is being provided, consistent with the current value in CTS 4.8.2.3.2.c.3 and CTS 4.8.2.5.2.c.3. In addition, the alternate charger testing method is not being included, consistent with current licensing basis.

7. The bracketed ISTS 3.8.4 ACTION B has been deleted since it is not necessary. ISTS 3.8.4 ACTION C (ITS 3.8.4 ACTION B) covers the condition of an inoperable battery. Due to this deletion, the subsequent ACTIONS have been renumbered.

Improved Standard Technical Specifications (ISTS) Bases Markup and Justification for Deviations (JFDs)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.4 DC Sources - Operating

BASES

INSERT 1 (1)

BACKGROUND

The station DC electrical power system provides the AC emergency power system with control power. It also provides both motive and control power to selected safety related equipment and preferred AC vital bus power (via inverters). As required by 10 CFR 50, Appendix A, GDC 17 (Ref. 1), the DC electrical power system is designed to have sufficient independence, redundancy, and testability to perform its safety functions, assuming a single failure. The DC electrical power system also conforms to the recommendations of Regulatory Guide 1.6 (Ref. 2) and IEEE-308 (Ref. 3).

Train A and Train B 250V

INSERT 2 (1)

Trains A, B, and N -   s   3   are   one full capacity

The [125/250] VDC electrical power system consists of two independent ~~and redundant~~ safety related Class 1E DC electrical power subsystems ([Train A and Train B]). Each subsystem consists of two [125] VDC batteries ([each battery [50]% capacity]), ~~the associated~~ battery charger(s) (~~for each battery~~) and all the associated control equipment and interconnecting cabling.

INSERT 2A   250   two   INSERT 2B   (1) (2)

Each Train A and Train B   one   250

The 250 VDC source is obtained by use of the two 125 VDC batteries connected in series. Additionally there is one spare battery charger per subsystem, which provides backup service in the event that the preferred battery charger is out of service. If the spare battery charger is substituted for one of the preferred battery chargers, then the requirements of independence and redundancy between subsystems are maintained.

consisting of 116 lead acid cells   normal   INSERT 3   Standby   normal   Train A, Train B, or Train N   (1) (2)

During normal operation, the [125/250] VDC load is powered from the battery chargers with the batteries floating on the system. In case of loss of normal power to the battery charger, the DC load is automatically powered from the station batteries.

associated   associated   (2) (1)

The [Train A and Train B] DC electrical power subsystems provide the control power for its associated Class 1E AC power load group, [4.16] kV switchgear, and [480] V load centers. The DC electrical power subsystems also provide DC electrical power to the inverters, which in turn power the AC vital buses.

, 600 V, and 480V   120V   Train A and Train B 250 V   (2) (1)

The DC power distribution system is described in more detail in Bases for LCO 3.8.9, "Distribution System - Operating," and LCO 3.8.10, "Distribution Systems - Shutdown."

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1

INSERT 1

The DC electrical power system consists of the Train A and Train B 250 VDC electrical power subsystems and the Train N 250 VDC electrical power system. Unit 2 (Unit 1) and Unit 1 (Unit 2) also has an identical set of DC electrical power subsystems. When the Essential Service Water (ESW) trains are not isolated from Unit 2 (Unit 1) and Unit 1 (Unit 2) ESW trains, the associated Unit 2 (Unit 1) and Unit 1 (Unit 2) Train A and Train B 250 VDC electrical power distribution subsystems are required to support Unit 1 (Unit 1) and Unit 2 (Unit 2) ESW operation.

1

INSERT 2

The Train N 250 VDC electrical power subsystem provides a reliable source for power and control of the turbine driven auxiliary feedwater train.

1

INSERT 2A

The Trains A and B 250 VDC electrical power subsystems are also redundant.

1

INSERT 2B

supplying power to the associated bus within the train

1

INSERT 3

The Train N 250 VDC source is obtained by use of one 250 VDC battery consisting of 117 lead acid cells connected in series.

BASES

BACKGROUND (continued)

Each [125/]250 VDC battery is separately housed in a ventilated room apart from its charger and distribution centers. Each subsystem is located in an area separated physically and electrically from the other subsystem to ensure that a single failure in one subsystem does not cause a failure in a redundant subsystem. There is no sharing between redundant Class 1E subsystems, such as batteries, battery chargers, or distribution panels.

DC electrical power

Each battery has adequate storage capacity to meet the duty cycle(s) discussed in the FSAR, Chapter [8] (Ref 4). The battery is designed with additional capacity above that required by the design duty cycle to allow for temperature variations and other factors.

Train A and Train B

Section 8.3.4

Each

INSERT 4

The batteries for Train A and Train B DC electrical power subsystems are sized to produce required capacity at 80% of nameplate rating, corresponding to warranted capacity at end of life cycles and the 100% design demand. The minimum design voltage limit is 105/210 V.

and Train N

INSERT 5

The battery cells are of flooded lead acid construction with a nominal specific gravity of [1.215]. This specific gravity corresponds to an open circuit battery voltage of approximately 120 V for a [58] cell battery (i.e., cell voltage of [2.065] volts per cell (Vpc)). The open circuit voltage is the voltage maintained when there is no charging or discharging. Once fully charged with its open circuit voltage ≥ [2.0654] Vpc, the battery cell will maintain its capacity for [30] days without further charging per manufacturer's instructions. Optimal long term performance however, is obtained by maintaining a float voltage [2.20 to 2.25] Vpc. This provides adequate over-potential, which limits the formation of lead sulfate and self discharge. The nominal float voltage of [2.22] Vpc corresponds to a total float voltage output of [128.8] V for a [58] cell battery as discussed in the FSAR, Chapter [8] (Ref. 4).

some time

Each Train A and Train B DC electrical power subsystem battery charger has ample power output capacity for the steady state operation of connected loads required during normal operation, while at the same time maintaining its battery bank fully charged. Each battery charger also has sufficient excess capacity to restore the battery from the design minimum charge to its fully charged state within 24 hours while supplying normal steady state loads discussed in the FSAR, Chapter [8] (Ref. 4).

, and Train N

4 and 5

Sections 8.3.4 and 8.3.6

Each required

The battery charger is normally in the float-charge mode. Float-charge is the condition in which the charger is supplying the connected loads and the battery cells are receiving adequate current to optimally charge the

1

INSERT 4

The Train N 250 VDC battery has adequate storage capacity to meet the duty cycle(s) discussed in the UFSAR, Section 8.3.6 (Ref. 5).

1

INSERT 5

Also, the batteries are sized to provide the minimum required voltage for essential components in the system.

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BASES

BACKGROUND (continued)

battery. This assures the internal losses of a battery are overcome and the battery is maintained in a fully charged state.

When desired, the charger can be placed in the equalize mode. The equalize mode is at a higher voltage than the float mode and charging current is correspondingly higher. The battery charger is operated in the equalize mode after a battery discharge or for routine maintenance. Following a battery discharge, the battery recharge characteristic accepts current at the current limit of the battery charger (if the discharge was significant, ~~e.g.~~, following a battery service test) until the battery terminal voltage approaches the charger voltage setpoint. Charging current then reduces exponentially during the remainder of the recharge cycle. ~~Lead-calcium~~ batteries ~~have~~ recharge efficiencies of greater than 95%, ~~so~~ once at least 105% of the ampere-hours discharged have been returned, the battery capacity would be restored to the same condition as it was prior to the discharge. This can be monitored by direct observation of the exponentially decaying charging current or by evaluating the amp-hours discharged from the battery and amp-hours returned to the battery.

For example, since (1)

Nominal

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in the ~~F~~SAR, ~~Chapter [6] (Ref. 5) and~~ Chapter [15] (Ref. 6), assume that Engineered Safety Feature (ESF) systems are OPERABLE. The DC electrical power system provides normal and emergency DC electrical power for the DGs, emergency auxiliaries, and control and switching during all MODES of operation. (1) (2)

U 14

The OPERABILITY of the DC sources is consistent with the initial assumptions of the accident analyses and is based upon meeting the design basis of the unit. This includes maintaining the DC sources OPERABLE during accident conditions in the event of:

a. An assumed loss of all offsite AC power or all onsite AC power ~~and~~ (9)

; j

b. A worst-case single failure.

The DC ~~s~~ources - Operating ~~satisfy~~ satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii). (2)

LCO

~~The DC electrical power subsystems, each subsystem consisting of [two] batteries, battery charger [for each battery] and the corresponding control equipment and interconnecting cabling supplying power to the associated bus within the train~~ are required to be OPERABLE to ensure the availability of the required power to shut down the reactor and maintain it

INSERT 6 (3)

3

INSERT 6

The DC electrical power subsystems—with a) each Train A and Train B 250 VDC subsystem consisting of one 250 VDC battery, one battery charger and the corresponding control equipment and interconnecting cabling supplying power to the associated bus within the train, b) the Train N 250 VDC subsystem consisting of one 250 VDC battery, one battery charger, and the corresponding control equipment and interconnecting cabling supplying power to the associated bus, and c) the required Unit 2 (Unit 1) and Unit 1 (Unit 2) Train A and Train B 250 VDC electrical power subsystems capable of supplying the ESW System components when required by LCO 3.7.8, "Essential Service Water (ESW) System each consisting of one 250 VDC battery, one battery charger and the corresponding control equipment and interconnecting cabling supplying power to the associated bus within the train

BASES

LCO (continued)

associated with the | transient | 7 | 1

in a safe condition after an anticipated operational occurrence (AOO) or a postulated DBA. Loss of any train DC electrical power subsystem does not prevent the minimum safety function from being performed (Ref. 4).

4 | a | 1

An OPERABLE DC electrical power subsystem requires all required batteries and respective chargers to be operating and connected to the associated DC buses.

one

APPLICABILITY

INSERT 7 | 3

The DC electrical power sources are required to be OPERABLE in MODES 1, 2, 3, and 4 to ensure safe unit operation and to ensure that:

9 | 1

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

anticipated operational transients | 3

INSERT 8

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

INSERT 9 | 4

The DC electrical power requirements for MODES 5 and 6 are addressed in the Bases for LCO 3.8.5, "DC Sources - Shutdown."

ACTIONS

A.1, A.2, and A.3

required Train A or Train B | 3

Condition A represents one train with one or two battery chargers inoperable (e.g., the voltage limit of SR 3.8.4.1 is not maintained). The ACTIONS provide a tiered response that focuses on returning the battery to the fully charged state and restoring a fully qualified charger to OPERABLE status in a reasonable time period. Required Action A.1 requires that the battery terminal voltage be restored to greater than or equal to the minimum established float voltage within 2 hours. This time provides for returning the inoperable charger to OPERABLE status or providing an alternate means of restoring battery terminal voltage to greater than or equal to the minimum established float voltage. Restoring the battery terminal voltage to greater than or equal to the minimum established float voltage provides good assurance that, within [12] hours, the battery will be restored to its fully charged condition (Required Action A.2) from any discharge that might have occurred due to the charger inoperability.

2

(specified in SR 3.8.4.1 Bases) | 6

3

INSERT 7

Train A and Train B 250 VDC electrical power subsystems and the Unit 2 (Unit 1) and Unit 1 (Unit 2) Train A and Train B DC electrical power subystems

3

INSERT 8

The Train N 250 VDC electrical power subsystem is required to be OPERABLE in MODES 1, 2, and 3 to support the turbine driven auxiliary feedwater train in the event that it is called upon to function when the Main Feedwater System is lost.

4

INSERT 9

and other conditions in which DC electrical power subsystems are required

BASES

ACTIONS (continued)

- REVIEWER'S NOTE -
A plant that cannot meet the 12-hour Completion Time due to an inherent battery charging characteristic can propose an alternate time equal to 2 hours plus the time experienced to accomplish the exponential charging current portion of the battery charge profile following the service test (SR 3.8.4.3). 5

A discharged battery having terminal voltage of at least the minimum established float voltage indicates that the battery is on the exponential charging current portion (the second part) of its recharge cycle. The time to return a battery to its fully charged state under this condition is simply a function of the amount of the previous discharge and the recharge characteristic of the battery. Thus there is good assurance of fully recharging the battery within [12] hours, avoiding a premature shutdown with its own attendant risk. 2

If established battery terminal float voltage cannot be restored to greater than or equal to the minimum established float voltage within 2 hours, and the charger is not operating in the current-limiting mode, a faulty charger is indicated. A faulty charger that is incapable of maintaining established battery terminal float voltage does not provide assurance that it can revert to and operate properly in the current limit mode that is necessary during the recovery period following a battery discharge event that the DC system is designed for. 8

If the charger is operating in the current limit mode after 2 hours that is an indication that the battery is partially discharged and its capacity margins will be reduced. The time to return the battery to its fully charged condition in this case is a function of the battery charger capacity, the amount of loads on the associated DC system, the amount of the previous discharge, and the recharge characteristic of the battery. The charge time can be extensive, and there is not adequate assurance that it can be recharged within [12] hours (Required Action A.2).

Required Action A.2 requires that the battery float current be verified as less than or equal to [2] amps. This indicates that, if the battery had been discharged as the result of the inoperable battery charger, it has now been fully recharged. If at the expiration of the initial [12] hour period the battery float current is not less than or equal to [2] amps this indicates there may be additional battery problems ~~and the battery must be declared inoperable~~ and ACTION C must be entered. 2 2 1 4

BASES

ACTIONS (continued)

Required Action A.3 limits the restoration time for the inoperable battery charger to 7 days. This action is applicable if an alternate means of restoring battery terminal voltage to greater than or equal to the minimum established float voltage has been used (e.g., balance of plant non-Class 1E battery charger). The 7 day Completion Time reflects a reasonable time to effect restoration of the qualified battery charger to OPERABLE status.

B.1

~~- REVIEWER'S NOTE -~~
~~The 2 hour Completion Times of Required Actions B.1 and C.1 are in brackets. Any licensee wishing to request a longer Completion Time will need to demonstrate that the longer Completion Time is appropriate for the plant in accordance with the guidance in Regulatory Guide (RG) 1.177, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications."~~ 5

~~Condition B represents one train with one [or two] batter[y][ies] inoperable. With one [or two] batter[y][ies] inoperable, the DC bus is being supplied by the OPERABLE battery charger[s]. Any event that results in a loss of the AC bus supporting the battery charger[s] will also result in loss of DC to that train. Recovery of the AC bus, especially if it is due to a loss of offsite power, will be hampered by the fact that many of the components necessary for the recovery (e.g., diesel generator control and field flash, AC load shed and diesel generator output circuit breakers, etc.) likely rely upon the batter[y][ies]. In addition the energization transients of any DC loads that are beyond the capability of the battery charger[s] and normally require the assistance of the batter[y][ies] will not be able to be brought online. The [2] hour limit allows sufficient time to effect restoration of an inoperable battery given that the majority of the conditions that lead to battery inoperability (e.g., loss of battery charger, battery cell voltage less than [2.07] V, etc.) are identified in Specifications 3.8.4, 3.8.5, and 3.8.6 together with additional specific completion times.~~ 3

B ~~C~~.1 INSERT 10. 3 3

Condition B ~~C~~ represents one ~~train~~ with a loss of ability to completely respond to an event, and a potential loss of ability to remain energized during normal operation. It is therefore, imperative that the operator's attention focus on stabilizing the unit, minimizing the potential for complete loss of DC power to the affected train. The 2 hour limit is

3

INSERT 10

Train A or Train B 250 VDC electrical power subsystem

BASES

ACTIONS (continued) electrical power

sub

consistent with the allowed time for an inoperable DC distribution system train. (1)

Train A or Train B 250V inoperable battery or (3)

If one of the ~~required~~ DC electrical power subsystems is inoperable for reasons other than Condition A or B (e.g., inoperable battery charger and associated inoperable battery), the remaining DC electrical power subsystem has the capacity to support a safe shutdown and to mitigate an accident condition. Since a subsequent worst- case single failure could, however, result in the loss of minimum necessary DC electrical subsystems to mitigate a worst case accident, continued power operation should not exceed 2 hours. The 2 hour Completion Time is based on Regulatory Guide 1.93 (Ref. 8) and reflects a reasonable time to assess unit status as a function of the inoperable DC electrical power subsystem and, if the DC electrical power subsystem is not restored to OPERABLE status, to prepare to effect an orderly and safe unit shutdown. (3) (1) (8)

C D.1 and D.2 (3)

INSERT 11

If ~~the inoperable DC electrical power subsystem 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~~ unit systems. The Completion Time to bring the unit to MODE 5 is consistent with the time required in Regulatory Guide 1.93 (Ref. 8). INSERT 12 (3)

SURVEILLANCE REQUIREMENTS

SR 3.8.4.1

Verifying battery terminal voltage while on float charge for the batteries helps to ensure the effectiveness of the battery chargers, which support the ability of the batteries to perform their intended function. Float charge is the condition in which the charger is supplying the continuous charge required to overcome the internal losses of a battery and maintain the battery in a fully charged state while supplying the continuous steady state loads of the associated DC subsystem. On float charge, battery cells will receive adequate current to optimally charge the battery. The voltage requirements are based on the nominal design voltage of the battery and are consistent with the minimum float voltage established by the battery manufacturer (2.20 Vpc or 127.6 V at the battery terminals). This voltage maintains the battery plates in a condition that supports maintaining the grid life (expected to be approximately 20 years). The

255.2 (2) INSERT 14 (3)(2) DC (1)

3 **INSERT 11**

any Required Action and associated Completion Time of Condition A or B is not met

3 **INSERT 12**

D.1

If the Train N DC electrical power subsystem is inoperable, the Train N powered system is not capable of performing its intended function. Immediately declaring the affected supported feature, e.g., the turbine driven AFW train, inoperable allows the ACTIONS of LCO 3.7.5, "Auxiliary Feedwater System (AFW)," to apply appropriate limitations on continued reactor operation.

E.1

If one or both required Unit 2 (Unit 1) and Unit 1 (Unit 2) Train A and Train B DC electrical power subsystems are inoperable, the associated ESW train(s) are not capable of performing their intended function. Immediately declaring the affected supported feature, e.g., ESW train, inoperable allows the ACTIONS of LCO 3.7.8 to apply appropriate limitations on continued reactor operation.

3 **INSERT 13**

NOT USED

3 **INSERT 14**

of the Train A and Train B batteries and 2.20 Vpc or 257.4 VDC at the battery terminals for the Train N battery.

BASES

SURVEILLANCE REQUIREMENTS (continued) conservative when compared (1)

7 day Frequency is ~~consistent~~ with manufacturer recommendations and IEEE-450 (Ref. ~~8~~ 8). (1)

SR 3.8.4.2

This SR verifies the design capacity of the battery chargers. According to Regulatory Guide 1.32 (Ref. 9), the battery charger supply is recommended to be based on the largest combined demands of the various steady state loads and the charging capacity to restore the battery from the design minimum charge state to the fully charged state, irrespective of the status of the unit during these demand occurrences. The minimum required amperes and duration ensure that these requirements can be satisfied.

Train A and Train B required (3)

This SR ~~provides two options. One option~~ requires that each battery charger be capable of supplying ~~400~~ ≥ 300 amps at ~~the minimum established float voltage~~ ≥ 250 VDC for ~~8~~ ≥ 24 hours. The ampere requirements are based on the output rating of the chargers. The voltage requirements are based on the charger voltage level after a response to a loss of AC power. The time period ~~is~~ sufficient ~~for the charger temperature to have stabilized and to have been maintained for at lease [2] hours~~. (2) (3) INSERT 15 (3) (6) (15) INSERT 15A (1)

~~The other option requires that each battery charger be capable of recharging the battery after a service test coincident with supplying the largest coincident demands of the various continuous steady state loads (irrespective of the status of the plant during which these demands occur). This level of loading may not normally be available following the battery service test and will need to be supplemented with additional loads. The duration for this test may be longer than the charger sizing criteria since the battery recharge is affected by float voltage, temperature, and the exponential decay in charging current. The battery is recharged when the measured charging current is ≤ [2] amps.~~ (3)

The Surveillance Frequency is acceptable, given the unit conditions required to perform the test and the other administrative controls existing to ensure adequate charger performance during these ~~18~~ 24 month intervals. ~~In addition, this Frequency is intended to be consistent with expected fuel cycle lengths.~~ (2) (3)

SR 3.8.4.3

A battery service test is a special test of the battery capability, as found, to satisfy the design requirements (battery duty cycle) of the DC electrical

3

INSERT 15

and the Train N battery charger is capable of supplying $\geq$ 25 amps at $\geq$ 250 VDC for $\geq$ 4 hours

1

INSERT 15A

to detect significant charger failures

BASES

SURVEILLANCE REQUIREMENTS (continued) INSERT 16 1

power system. The discharge rate and test length should correspond to the design duty cycle requirements as specified in ~~Reference 4~~. the applicable design documents 1

The Surveillance Frequency of 18 24 2 months is ~~consistent with the recommendations of Regulatory Guide 1.32 (Ref. 9) and Regulatory Guide 1.129 (Ref. 10), which state that the battery service test should be performed during refueling operations, or at some other outage, with intervals between tests not to exceed [18 months].~~ INSERT 17 1

This SR is modified by two Notes. Note 1 allows the performance of a modified performance discharge test in lieu of a service test.

The reason for Note 2 is that performing the Surveillance would perturb the electrical distribution system and challenge safety systems. This restriction from normally performing the Surveillance in MODE 1, or 2, 2, 3, 4 is further amplified to allow portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines ~~plant~~ unit 1 safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a ~~plant~~ unit 1 shutdown and startup to determine that ~~plant~~ safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1, or 2, 3, 4. Risk insights or deterministic methods may be used for the assessment. INSERT 18 7

INSERT 19 3 6

REFERENCES

1. 10 CFR 50, Appendix A, GDC 17.
2. Regulatory Guide 1.6, March 10, 1971. 1 2
3. IEEE-308-~~[1978]~~ 1980.
4. U FSAR, ~~Chapter [8]~~ Section 8.3.1. 1
5. ~~FSAR, Chapter [6].~~ 5. UFSAR, Section 8.3.6. 1
6. U FSAR, Chapter ~~15~~ 14. 1 2
7. UFSAR, Section 8.5.

1 **INSERT 16**

The battery charger must be disconnected throughout the performance of the battery service test.

1 **INSERT 17**

based on engineering judgement, taking into consideration unit conditions required to perform the Surveillance. Operating experience has shown that these components usually pass the SR when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

7 **INSERT 18**

Credit may be taken for unplanned events that satisfy this SR.

3 **INSERT 19**

SR 3.8.4.4

With the exception of this Surveillance, all other Surveillances of this Specification (SR 3.8.4.1 through 3.8.4.3) are applied to the Unit 1 (Unit 1) and Unit 2 (Unit 2) DC sources. This Surveillance is provided to direct that appropriate Surveillances for the required Unit 2 (Unit 1) and Unit 1 (Unit 2) DC sources are governed by the applicable Unit 2 (Unit 1) and Unit 1 (Unit 2) Technical Specifications. Performance of the applicable opposite unit Surveillances will satisfy the opposite unit requirements as well as satisfy the given unit Surveillance Requirement.

The Frequency required by the applicable Unit 2 (Unit 1) and Unit 1 (Unit 2) SR also governs performance of that SR for Unit 1 (Unit 1) and Unit 2 (Unit 2).

As noted, when Unit 2 (Unit 1) and Unit 1 (Unit 2) is in MODE 5 or 6, or moving irradiated fuel assemblies in the containment or auxiliary building, SR 3.8.4.3 is not required to be performed. This ensures that a Unit 1 (Unit 1) and Unit 2 (Unit 2) SR will not require a Unit 2 (Unit 1) and Unit 1 (Unit 2) SR to be performed, when Unit 2 (Unit 1) and Unit 1 (Unit 2) Technical Specifications exempts performance of a Unit 2 (Unit 1) and Unit 1 (Unit 2) SR (however, as stated in the Unit 2 (Unit 1) and Unit 1 (Unit 2) SR 3.8.5.1 Bases, while performance of an SR is exempted, the SR must still be met).

BASES

REFERENCES (continued)

8 ~~9~~. Regulatory Guide 1.93, December 1974. 1

9 ~~10~~. IEEE-450-1995. 1 2

10 ~~11~~. Regulatory Guide 1.32, February 1977. 1

~~10. Regulatory Guide 1.129, December 1974.~~ 1

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JUSTIFICATION FOR DEVIATIONS
ITS 3.8.4 BASES, DC SOURCES - OPERATING

1. Changes are made (additions, deletions, and/or changes) to the ISTS Bases, which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. The brackets have been removed and the proper plant specific information/value has been provided.

3. Changes are made to the Bases which reflect changes to the Specification.

4. Changes are made to be consistent with the actual Specification.

5. The "Reviewer's Note" has been deleted since it is not intended to be included in the plant specific ITS submittals.

6. Grammatical/editorial/spelling error corrected.

7. TSTF-283, Rev. 3, was approved by the NRC on April 13, 2000. However, when NUREG-1431, Rev. 2, was issued, this TSTF was not completely included. Therefore, changes approved by TSTF-283, Rev. 3, have been made.

8. These two paragraphs have been deleted. ITS 3.8.4 ACTION A provides actions for when a battery charger is inoperable. The discussion provided in the two paragraphs is related to why a charger is inoperable if Required Action A.1 cannot be met, or if the charger is operating in the current limit mode, why Required Action A.2 might not be able to be met within the 12 hour Completion Time. These two paragraphs are not necessary. ACTION A is applicable when a charger is inoperable; thus stating the charger is inoperable if the battery float voltage cannot be restored within 2 hours is redundant. In addition, stating that Required Action A.2 might not be able to be met if the charger is in the current limit mode is unnecessary. If the charger is OPERABLE and in service, then ACTION A is not applicable. Thus, Required Action A.2 does not have to be met and the discussion concerning the condition of the battery charger is moot. The remaining paragraphs in the Bases for ACTION A are sufficient to discuss the requirements of ITS 3.8.4 ACTION A.

9. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

10. These battery design values have been deleted, since they are more specific than necessary and are not required to provide sufficient background for this Specification.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.4, DC SOURCES - OPERATING

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 5

ITS 3.8.5, DC Sources - Shutdown

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

ITS 3.8.5

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - SHUTDOWN

to support one train of the DC Electrical Power Distribution System required by LCO 3.8.10, "Distribution Systems - Shutdown." M.1

LIMITING CONDITION FOR OPERATION

One

power subsystem

LCO 3.8.5 3.8.2.4 ~~As a minimum, the following~~ D.C. electrical ~~equipment and bus~~ shall be ~~energized and~~ OPERABLE: LA.1

~~1 - 250-volt D.C. bus, and~~ See ITS 3.8.10

~~1 - 250-volt battery bank and charger associated with the above D.C. bus.~~ LA.1

APPLICABILITY: MODES 5 and 6, and ~~during movement of irradiated fuel.~~ A.4

ACTION: Add ACTIONS Note A.2

ACTION A With less than the above complement of D.C. equipment ~~and bus~~ OPERABLE See ITS 3.8.10

a. Immediately suspend all operations involving CORE ALTERATIONS, movement of irradiated fuel assemblies, and positive reactivity changes ~~except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6 and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2.~~ that could result in loss of required SDM or boron concentration. L.1

b. Immediately initiate actions to restore the required D.C. electrical equipment ~~and bus~~ to OPERABLE status.

c. Immediately declare associated required residual heat removal loop(s) inoperable. See ITS 3.8.10

SURVEILLANCE REQUIREMENTS

4.8.2.4.1 ~~The above required 250-volt D.C. bus shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.~~ See ITS 3.8.10

SR 3.8.5.1 4.8.2.4.2 The above required 250-volt battery bank and charger shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2. Add proposed Note to SR 3.8.5.1 L.2

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - SHUTDOWN

LIMITING CONDITION FOR OPERATION

to support one train of the DC Electrical Power Distribution System required by LCO 3.8.10, "Distribution Systems - Shutdown." M.1

One

power subsystem

LCO 3.8.5 3.8.2.4 ~~As a minimum, the following~~ D.C. electrical ~~equipment and~~ ~~bus~~ shall be ~~energized~~ ~~and~~ OPERABLE: LA.1

1 - 250-volt D.C. bus, and — See ITS 3.8.10

1 - 250-volt battery bank and ~~charger~~ associated with the above D.C. bus. LA.1

APPLICABILITY: MODES 5 and 6. — and during movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 1 containment A.3

ACTION: Add ACTIONS Note A.2

ACTION A With less than the above complement of D.C. equipment ~~and bus~~ OPERABLE. See ITS 3.8.10

a. Immediately suspend all operations involving CORE ALTERATIONS, movement of irradiated fuel assemblies, and positive reactivity changes ~~except 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2.~~ that could result in loss of required SDM or boron concentration. L.1

b. Immediately initiate actions to restore the required D.C. electrical equipment ~~and bus~~ to OPERABLE status.

c. Immediately declare associated required residual heat removal loop(s) inoperable. See ITS 3.8.10

SURVEILLANCE REQUIREMENTS

4.8.2.4.1 The above required 250-volt D.C. bus shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability. See ITS 3.8.10

SR 3.8.5.1 4.8.2.4.2 The above required 250-volt battery bank and charger shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2. Add proposed Note to SR 3.8.5.1 L.2

DISCUSSION OF CHANGES
ITS 3.8.5, DC SOURCES - SHUTDOWN

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A.2 CTS 3.8.2.4 (Unit 1) is applicable during MODES 5 and 6, and during the movement of irradiated fuel. CTS 3.8.2.4 (Unit 2) is applicable only during MODES 5 and 6, however CTS 3.8.2.4 Action a (Unit 2) requires movement of irradiated fuel assemblies to be suspended if the required DC electrical equipment is inoperable. ITS 3.8.5 is applicable in MODES 5 and 6, and during the movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment. In addition, a Note has been added to the ACTIONS which states that LCO 3.0.3 is not applicable. This changes the CTS by adding the Note to the ACTIONS stating that LCO 3.0.3 is not applicable. The change to the Unit 1 Applicability is discussed in DOC A.4 and the change to the Unit 2 Applicability is discussed in DOC A.3.

The purpose of CTS 3.8.2.4 is to ensure that at least one 250 VDC battery bank and associated charger is OPERABLE to support equipment required to be OPERABLE. This change adds a clarification Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODES 5 or 6, LCO 3.0.3 is not applicable and would not specify any action. If moving irradiated fuel assemblies while in MODES 1, 2, 3, or 4, the fuel movement is independent of reactor operations and the inability to suspend movement in accordance with the ITS 3.8.5 Required Actions would not be sufficient reason to require a reactor shutdown. This Note has been added for clarification and is necessary since defaulting to LCO 3.0.3 would require the reactor to be shutdown it would not require suspension of the activities with a potential for releasing radioactive materials. This change is designated as administrative as it is a clarification of the intent of CTS LCO 3.0.3 that does not result in a technical change to the CTS.

A.3 (Unit 2 only) CTS 3.8.2.4 is applicable during MODES 5 and 6. However, CTS 3.8.2.4 Action a requires movement of irradiated fuel assemblies to be suspended if the required DC electrical equipment is inoperable. ITS 3.8.5 is applicable in MODES 5 and 6, and during the movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 1 containment. This changes the Unit 2 CTS by adding the explicit Applicability of during movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 1 containment.

The purpose of CTS 3.8.2.4 is to ensure that at least one 250 VDC battery bank and associated charger is OPERABLE to support equipment required to be OPERABLE. This change adds the explicit Applicability of during movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 1

DISCUSSION OF CHANGES
ITS 3.8.5, DC SOURCES - SHUTDOWN

containment. This Applicability is consistent with the Applicability of Unit 1 CTS 3.8.2.4 and consistent with CTS 3.8.2.4 Action a of Unit 2, which states to suspend movement of irradiated fuel when the required 250 VDC battery bank and associated charger is inoperable. This change is designated as administrative as it is a clarification of the intent of Unit 2 CTS 3.8.2.4 that does not result in a technical change to the Unit 2 CTS.

A.4 (Unit 1 only) CTS 3.8.2.4 Applicability includes "during movement of irradiated fuel." ITS 3.8.5 Applicability includes "During movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 2 containment." This changes the Unit 1 CTS by clarifying the locations that fuel movement is taking place.

The purpose of CTS 3.8.2.4, with respect to fuel handling, is to ensure adequate DC Sources are available to power equipment required to mitigate a fuel handling accident. This protection is required during irradiated fuel movement in three locations: the unit containment, the auxiliary building, and the opposite unit containment. Therefore, for clarity, all three locations are specified in the ITS Applicability, in lieu of the current wording which just specifies irradiated fuel movement. This change is designated as administrative because it does not result in any technical changes to the Unit 1 CTS.

MORE RESTRICTIVE CHANGES

M.1 CTS LCO 3.8.2.4 requires one 250 VDC battery bank and charger associated with the specified 250 VDC bus to be OPERABLE. ITS LCO 3.8.5 requires the Train A or Train B 250 VDC electrical power subsystem to be OPERABLE to support one train of the DC Electrical Power Distribution System required by LCO 3.8.10, "Distribution Systems - Shutdown." This changes the CTS by being specific as to what the required DC electrical power subsystem must be powering.

The purpose of CTS LCO 3.8.2.4 is to ensure the Train A or Train B 250 VDC electrical power subsystem is OPERABLE to support the specified 250 VDC bus. The existing requirement of CTS LCO 3.8.2.4 is not specific as to what the 250 VDC bus must be powering. The requirement in ITS LCO 3.8.5 specifies that the DC electrical power subsystem must support one train of the DC Electrical Power Distribution System required by LCO 3.8.10, "Distribution Systems - Shutdown." This change is acceptable since the added restriction conservatively assures the required DC electrical power subsystem is capable of powering at least one required train to support equipment required by other LCOs. This change is designated as more restrictive because more explicit DC electrical power subsystem requirements are specified (i.e., supporting equipment required to be OPERABLE) in the ITS than in the CTS.

RELOCATED SPECIFICATIONS

None

DISCUSSION OF CHANGES
ITS 3.8.5, DC SOURCES - SHUTDOWN

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.8.2.4 requires one "250 VDC battery bank and charger" associated with the specified 250 VDC bus to be OPERABLE. ITS LCO 3.8.5 requires one Train A or Train B 250 VDC electrical power subsystem to be OPERABLE to support one train of the DC Electrical Power Distribution System required by LCO 3.8.10, "Distribution Systems - Shutdown." This changes the CTS by moving the details of what constitutes the required Train A or Train B 250 VDC electrical power subsystem to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. ITS retains the requirement that the Train A or Train B 250 VDC electrical power subsystem to be OPERABLE to support one train of the DC Electrical Power Distribution System required by LCO 3.8.10, "Distribution Systems - Shutdown." Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to the system design is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L.1 *(Category 4 – Relaxation of Required Action)* CTS 3.8.2.4 Action a specifies the compensatory action for an inoperable required DC Source. One of the compensatory actions is the suspension of positive reactivity "changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2." ITS 3.8.5 Required Action A.3 requires the immediate suspension of operations involving positive reactivity "additions that could result in loss of required SDM or boron concentration." This changes the CTS compensatory actions by deleting the limitation on the heatup and cooldown rates of 50°F or less in any one hour period in MODE 5 and allows the addition of water from any source including the RWST as long as SDM and boron concentration limitations are met.

The purpose of CTS 3.8.2.4 Action a is to suspend any positive reactivity additions that could affect the SDM of the reactor core. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair

DISCUSSION OF CHANGES
ITS 3.8.5, DC SOURCES - SHUTDOWN

inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the repair period. The CTS allows two types of positive reactivity changes (heatup/cooldown and addition of water). Heatup and cooldown of the reactor coolant volume are allowed provided SDM is sufficient to accommodate the change in temperature in accordance with CTS 3.1.1.2 in MODE 5 or CTS 3.9.1 in MODE 6. The requirements of these Specifications are included in ITS LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," and ITS LCO 3.9.1, "Boron Concentration," respectively. Therefore, there is no technical change in this portion of the change. The Bases provides the appropriate cross-reference to the appropriate LCOs. The CTS also allows positive reactivity changes by the addition of water from the RWST provided the boron concentration in the RWST is greater than or equal to the minimum required by CTS 3.1.2.7.b.2. CTS 3.1.2.7.b.2 has been relocated to the TRM as indicated in the Discussion of Changes for CTS LCO 3/4.1.2.7. CTS 3/4.1.2.7 is applicable during MODE 5 and 6 operations. The proposed Required Actions require the suspension of operations involving positive reactivity additions that could result in loss of required SDM or boron concentration. The requirements for SDM are specified in ITS LCO 3.1.1 while the requirements for boron concentration are specified in ITS LCO 3.9.1. The current and proposed actions may result in an overall reduction in SDM or RCS boron concentration, but provide acceptable margin to maintaining subcritical operation. The CTS compensatory action restricted the heatup and cooldown rates of the RCS to 50°F or less in any one-hour period in MODE 5. This limitation has been deleted. The proposed Required Action is to suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration. These limitations are considered acceptable. The Bases also indicate that introduction of temperature changes including temperature increases when operating with a positive moderator temperature coefficient must be evaluated to ensure they do not result in a loss of required SDM. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.2 *(Category 7 – Relaxation Of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.8.2.4.2 requires the demonstration of the OPERABILITY of the 250 VDC battery and charger in accordance with the Surveillance Requirements of CTS 4.8.2.3.2. ITS SR 3.8.5.1 requires SR 3.8.4.1, SR 3.8.4.2, and SR 3.8.4.3 to be applicable. However, a Note has been added that states ITS SR 3.8.4.3 does not have to be performed. This changes the CTS by allowing a certain SR not to be performed. Changes to the Surveillances of CTS 4.8.2.3.2 are discussed in the Discussion of Changes for ITS 3.8.4, "DC Sources - Operating."

The purpose of the ITS SR 3.8.5.1 Note is to ensure that required equipment is not made inoperable by testing when the equipment is the only OPERABLE equipment available to support unit operations. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. ITS SR 3.8.4.3 is the battery

DISCUSSION OF CHANGES
ITS 3.8.5, DC SOURCES - SHUTDOWN

capacity test. The performance of SR 3.8.4.3 involve tests that would cause the only required OPERABLE Train A or Train B 250 VDC electrical power subsystem to be rendered inoperable. This condition presents a significant risk if an event were to occur during the test. The NRC has previously provided Surveillance exceptions in the CNP Unit 1 and Unit 2 CTS to avoid a similar condition for the AC Sources, but the exceptions have not been applied to DC Sources. In an effort to consistently address this concern, ITS SR 3.8.5.1 has a Note that excludes performance requirements of Surveillances that would require the required OPERABLE DC electrical power subsystem to be rendered inoperable. This allowance does not take exception to the requirement for the DC electrical power subsystem to be capable of performing the particular function, but just to the requirement to demonstrate that capability while that source of power is being relied on to support meeting the LCO. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

CTS

3.8 ELECTRICAL POWER SYSTEMS

3.8.5 DC Sources - Shutdown

3.8.2.4

LCO 3.8.5 ~~[DC electrical power subsystem shall be OPERABLE to support the DC electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems - Shutdown."]~~ (1)

Train A or Train B 250V One DC electrical power subsystem shall be OPERABLE. INSERT 1 (2) (3)

~~- REVIEWER'S NOTE -~~
~~This second option above applies for plants having a pre-ITS licensing basis (CTS) for electrical power requirements during shutdown conditions that required only one DC electrical power subsystem to be OPERABLE. Action A the bracketed optional wording in Condition B are also eliminated for this case. The first option above is adopted for plants that have a licensing basis (CTS) requiring the same level of DC electrical power subsystem support as is required for power operating conditions.~~ (1)

APPLICABILITY: MODES 5 and 6,
During movement of ~~[recently]~~ irradiated fuel assemblies. (3)

INSERT 2 (6)

ACTIONS

DOC A.2

- NOTE -
LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~[A. One [or two] battery charger[s on one train] inoperable.~~ ~~AND~~	~~A.1 Restore battery terminal voltage to greater than or equal to the minimum established float voltage.~~ ~~AND~~	~~2 hours~~ (1)

2 **INSERT 1**

to support one train of the DC Electrical Power Distribution System required by LCO 3.8.10, "Distribution Systems - Shutdown."

6 **INSERT 2**

in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

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CTS

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
The redundant train battery and charger[s] OPERABLE.	A.2 Verify battery float current ≤ [2] amps. AND A.3 Restore battery charger[s] to OPERABLE status.	Once per [12] hours 7 days]
A B. One or more required DC electrical power subsystem(s) inoperable for reasons other than Condition A OR Required Action and associated Completion Time of Condition A not met.	B.1 Declare affected required feature(s) inoperable. OR B.2.1 Suspend CORE ALTERATIONS. AND B.2.2 Suspend movement of recently irradiated fuel assemblies. AND B.2.3 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration. AND B.2.4 Initiate action to restore required DC electrical power subsystem(s) to OPERABLE status.	Immediately Immediately Immediately Immediately Immediately

Act...

1 3 4 3 1 4 4 1 4 3 4 1 4 4 1 4 1

CTS

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.5.1	is - NOTE - The following SRs are not required to be performed: SR 3.8.4.2 and SR 3.8.4.3. For DC sources required to be OPERABLE, the following SRs are applicable: SR 3.8.4.1, SR 3.8.4.2, and SR 3.8.4.3.	In accordance with applicable SRs

4.8.2.4.2

7

5

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.5, DC SOURCES - SHUTDOWN

1. The bracketed optional ISTS LCO 3.8.5 and "Reviewer's Note" have been deleted since the current licensing basis only requires one DC electrical power subsystem to be OPERABLE. ISTS 3.8.5 ACTION A has been deleted since only one required DC electrical power subsystem is specified in the LCO. This allowance is only acceptable if the first option of the LCO is used. The subsequent Condition and Required Actions have been renumbered and modified, as applicable.

2. The second option of ISTS LCO 3.8.5 is not specific as to what the DC electrical power subsystem must be powering. The LCO has been modified to require the Train A or Train B 250 VDC electrical power subsystem to be powering a DC train required OPERABLE by LCO 3.8.10.

3. The brackets are removed and the proper plant specific information/value is provided.

4. ISTS 3.8.5 Required Action B.1 provides an option to declare affected required feature(s) inoperable with one or more required DC electrical power subsystems inoperable. The ISTS Bases states that this is acceptable because the remaining train with DC power available may be capable of supporting sufficient features to allow continuation of CORE ALTERATIONS and fuel movement. Thus, this Required Action assumes two DC power sources are required by the LCO. This option has been deleted since only one Train A or Train B 250 VDC electrical power subsystem is required to be OPERABLE by the LCO. Subsequent Required Actions have been renumbered and modified, as applicable.

5. Change made to be consistent with the Writers Guide for the Improved Standard Technical Specifications, NEI 01-03.

6. The Applicability has been clarified, since CNP has two units and irradiated fuel movement can occur in three different locations.

7. The allowance to not perform SR 3.8.4.2 has been deleted. The CNP design includes two battery chargers per train. Therefore, the battery charger SR can be performed without making the train inoperable.

Improved Standard Technical Specifications (ISTS) Bases Markup and Justification for Deviations (JFDs)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.5 DC Sources - Shutdown

BASES

BACKGROUND

A description of the DC sources is provided in the Bases for LCO 3.8.4, "DC Sources - Operating." 4

APPLICABLE SAFETY ANALYSES

(DBA)

4 The initial conditions of Design Basis Accident and transient analyses in the FSAR, ~~Chapter [6] (Ref. 1) and~~ Chapter ~~[15]~~ 14 (Ref. 1), assume that Engineered Safety Feature systems are OPERABLE. The DC electrical power system provides normal and emergency DC electrical power for the diesel generators, emergency auxiliaries, and control and switching during all MODES of operation. 1 2

The OPERABILITY of the DC subsystems is consistent with the initial assumptions of the accident analyses and the requirements for the supported systems' OPERABILITY.

5 INSERT 1

The OPERABILITY of the minimum DC electrical power sources during MODES 5 and 6 and during movement of ~~[recently]~~ irradiated fuel assemblies ensures that: 1

a. The unit can be maintained in the shutdown or refueling condition for extended periods; 3

b. Sufficient instrumentation and control capability is available for monitoring and maintaining the unit status; and 3

c. Adequate DC electrical power is provided to mitigate events postulated during shutdown, such as a fuel handling accident. ~~[involving handling recently irradiated fuel. Due to radioactive decay, DC electrical power is only required to mitigate fuel handling accidents involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [ ] days)].~~ 1

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 because the energy contained 1

5

INSERT 1

In the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

BASES

APPLICABLE SAFETY ANALYSES (continued)

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.

The shutdown Technical Specification requirements are designed to ensure that the unit has the capability to mitigate the consequences of certain postulated accidents. Worst case ~~Design Basis Accidents~~ DBAs which are analyzed for operating MODES are generally viewed not to be a significant concern during shutdown MODES due to the lower energies involved. The Technical ~~S~~specifications therefore require a lesser complement of electrical equipment to be available during shutdown than is required during operating MODES. More recent work completed on the potential risks associated with shutdown, however, have found significant risk associated with certain shutdown evolutions. As a result, in addition to the requirements established in the Technical Specifications, the industry has adopted NUMARC 91-06, "Guidelines for Industry Actions to Assess Shutdown Management," as an industry initiative to manage shutdown tasks and associated electrical support to maintain risk at an acceptable low level. This may require the availability of additional equipment beyond that required by the shutdown Technical Specifications. (4) (7)

~~The~~ DC ~~s~~ources Shutdown satisf~~y~~ies Criterion 3 of 10 CFR 50.36(c)(2)(ii). (2)

LCO

The DC electrical power subsystem~~s~~, ~~each required~~ ~~the required~~ ~~subsystem~~ One consisting of ~~two~~ batter~~ies~~, one battery charger ~~per battery~~, and the corresponding control equipment and interconnecting cabling ~~within~~ ~~one~~ ~~the train~~, ~~are~~ is required to be OPERABLE to support ~~required~~ one train~~s~~ of the distribution system~~s~~ sub required OPERABLE by LCO 3.8.10, "Distribution Systems - Shutdown." This ensures the availability of sufficient DC electrical power sources to operate the unit in a safe manner and to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents ~~involving handling recently irradiated fuel~~). (1) (1)

Train A or Train B 250 V

APPLICABILITY

The DC electrical power sources required to be OPERABLE in MODES 5 and 6, and during movement of ~~recently~~ irradiated fuel assemblies, INSERT 2 provide assurance that: (1) (5)

5 **INSERT 2**

in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

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BASES

APPLICABILITY (continued)

a. Required features to provide adequate coolant inventory makeup are available for the irradiated fuel assemblies in the core, 1 3

b. Required features needed to mitigate a fuel handling accident [involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [ ] days)] are available, 1 1

c. Required features necessary to mitigate the effects of events that can lead to core damage during shutdown are available, and 1 3

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

The DC electrical power requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.4.

ACTIONS

LCO 3.0.3 is not applicable while in MODE 5 or 6. However, since irradiated fuel assembly movement can occur in MODE 1, 2, 3, or 4, the ACTIONS have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 5 or 6, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, 3, or 4, the fuel movement is independent of reactor operations. Entering LCO 3.0.3, while in MODE 1, 2, 3, or 4 would require the unit to be shutdown unnecessarily.

<u>A.1, A.2, and A.3</u>

- REVIEWER'S NOTE -

ACTION A is included only when plant-specific implementation of LCO 3.8.5 includes the potential to require both trains of the DC System to be OPERABLE. If plant-specific implementation results in LCO 3.8.5 requiring only one trains of the DC System to be OPERABLE, then ACTION A is omitted and ACTION B is renumbered as ACTION A.

Condition A represents one train with one [or two] battery chargers inoperable (e.g., the voltage limit of SR 3.8.4.1 is not maintained). The ACTIONS provide a tiered response that focuses on returning the battery to the fully charged state and restoring a fully qualified charger to OPERABLE status in a reasonable time period. Required Action A.1 requires that the battery terminal voltage be restored to greater than or 5

BASES

ACTIONS (continued)

equal to the minimum established float voltage within 2 hours. This time provides for returning the inoperable charger to OPERABLE status or providing an alternate means of restoring battery terminal voltage to greater than or equal to the minimum established float voltage. Restoring the battery terminal voltage to greater than or equal to the minimum established float voltage provides good assurance that, within [12] hours, the battery will be restored to its fully charged condition (Required Action A.2) from any discharge that might have occurred due to the charger inoperability.

- REVIEWER'S NOTE -

A plant that cannot meet the 12-hour Completion Time due to an inherent battery charging characteristic can propose an alternate time equal to 2 hours plus the time experienced to accomplish the exponential charging current portion of the battery charge profile following the service test (SR 3.8.4.3).

5

A discharged battery having terminal voltage of at least the minimum established float voltage indicates that the battery is on the exponential charging current portion (the second part) of its recharge cycle. The time to return a battery to its fully charged state under this condition is simply a function of the amount of the previous discharge and the recharge characteristic of the battery. Thus there is good assurance of fully recharging the battery within [12] hours.

If established battery terminal float voltage cannot be restored to greater than or equal to the minimum established float voltage within 2 hours, and the charger is not operating in the current-limiting modes, a faulty charger is indicated. A faulty charger that is incapable of maintaining established battery terminal float voltage does not provide assurance that it can revert to and operate properly in the current limit modes that is necessary during the recovery period following a battery discharge event that the DC system is designed for.

If the charger is operating in the current limit mode after 2 hours that is an indication that the battery is partially discharged and its capacity margins will be reduced. The time to return the battery to its fully charged condition in this case is a function of the battery charger capacity, the amount of loads on the associated DC system, the amount of the previous discharge, and the recharge characteristic of the battery. The charge time can be extensive, and there is not adequate assurance that it can be recharged within [12] hours (Required Action A.2).

BASES

ACTIONS (continued)

Required Action A.2 requires that the battery float current be verified as less than or equal to [2] amps. This indicates that, if the battery had been discharged as the result of the inoperable battery charger, it has now been fully recharged. If at the expiration of the initial [12] hour period the battery float current is not less than or equal to [2] amps this indicates there may be additional battery problems and the battery must be declared inoperable. (5)

Required Action A.3 limits the restoration time for the inoperable battery charger to 7 days. This action is applicable if an alternate means of restoring battery terminal voltage to greater than or equal to the minimum established float voltage has been used (e.g. balance of plant non-Class 1E battery charger). The 7 day Completion Time reflects a reasonable time to effect restoration of the qualified battery charger to OPERABLE status.

A.1, A.2, A.3, and A.4 ~~B.1, B.2.1, B.2.2, B.2.3, and B.2.4~~ (5)

~~[If two trains are required by LCO 3.8.10, the remaining train with DC power available may be capable of supporting sufficient systems to allow continuation of CORE ALTERATIONS and fuel movement] [involving handling recently irradiated fuel]. By allowing the option to declare required features inoperable with the associated DC power source(s) inoperable, appropriate restrictions will be implemented in accordance with the affected required features LCO ACTIONS. In many instances this option may involve undesired administrative efforts. Therefore, the allowance for sufficiently conservative actions is made (i.e., to suspend~~ INSERT 3 (5)

INSERT 4 CORE ALTERATIONS, movement of ~~[recently]~~ irradiated fuel assemblies, and operations involving positive reactivity additions that could result in ~~failure to meet the minimum SDM or boron concentration limit~~ is required to assure continued safe operation. Introduction of coolant inventory must be from sources that have a boron concentration greater than ~~that~~ what would be required in the Reactor Coolant System (RCS) for minimum SDM or refueling boron concentration. This may result in an overall reduction in RCS boron concentration, but provides acceptable margin to maintaining subcritical operation. Introduction of temperature changes including temperature increases when operating with a positive Moderator Temperature Coefficient (MTC) must also be evaluated to ensure they do not result in a loss of required SDM. (1) (5) (5) (6) (4) (4)

Suspension of these activities shall not preclude completion of actions to establish a safe conservative condition. These actions minimize probability of the occurrence of postulated events. It is further required to immediately initiate action to restore the required DC electrical power

5

INSERT 3

With the required Train A or Train B 250 VDC electrical power subsystem inoperable, the minimum required DC power sources are not available. Therefore, suspension of

6

INSERT 4

7

8

loss of required SDM (Mode 5) specified in LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," or boron concentration (Mode 6) specified in LCO 3.9.1, "Boron Concentration," Suspending positive reactivity additions that could result in failure to meet the minimum SDM or boron concentration limit is required to assure continued safe operation.

5

BASES

ACTIONS (continued)

subsystem(s) and to continue this action until restoration is accomplished in order to provide the necessary DC electrical power to the unit safety systems. (1)

The Completion Time of Immediately is consistent with the required times for actions requiring prompt attention. The restoration of the required DC electrical power subsystems 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 3.8.5.1

SR 3.8.5.1 requires performance of all Surveillances required by SR 3.8.4.1 through SR 3.8.4.3. Therefore, see the corresponding Bases for LCO 3.8.4 for a discussion of each SR.

This SR is modified by a Note. The reason for the Note is to preclude requiring the OPERABLE DC sources from being discharged below their capability to provide the required power supply or otherwise rendered inoperable during the performance of SRs. It is the intent that these SRs must still be capable of met, but actual performance is not required. (15) (5)

REFERENCES

~~1. FSAR, Chapter [6].~~

(1) 2. FSAR, Chapter [15]. (14) (4) (2) (1)

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.5 BASES, DC SOURCES - SHUTDOWN

1. The brackets have been removed and the proper plant specific information/value has been provided.

2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases, which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

4. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 3.2.2.

5. Changes are made to the Bases which reflect changes made to the Specification.

6. TSTF-286, Rev. 2, was approved by the NRC on April 13, 2000. However, when NUREG-1431, Rev. 2, was issued, this TSTF was not completely included. Therefore, changes approved by TSTF-286, Rev. 2, have been made.

7. Typographical error corrected.

8. Changes made to be consistent with other places in the Bases.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.5, DC SOURCES - SHUTDOWN

There are no specific NSHC discussions for this Specification.

ATTACHMENT 6

ITS 3.8.6, Battery Parameters

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

Add proposed LCO 3.8.6 — A.2

3.8.2.3 The following D.C. bus trains shall be energized and OPERABLE with tie breakers between bus trains open:

TRAIN AB consisting of 250-volt D.C. bus AB, 250-volt D.C. battery bank No. 1AB, and a full capacity charger, and

TRAIN CD consisting of 250-volt D.C. bus CD, 250-volt D.C. battery bank No. 1CD, and a full capacity charger.

See ITS 3.8.4 and 3.8.9

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

ACTION

a. With one 250-volt D.C. bus inoperable, restore the inoperable bus to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

See ITS 3.8.9

b. With one 250-volt D.C. battery and/or its charger inoperable, restore the inoperable battery and/or charger to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

See ITS 3.8.4

Add proposed ACTIONS A, B, C, D, E, and F — L.1

SURVEILLANCE REQUIREMENTS

4.8.2.3.1 Each D.C. bus train shall be determined OPERABLE and energized with tie breakers open at least once per 7 days by verifying correct breaker alignment and indicated power availability.

See ITS 3.8.9

4.8.2.3.2 Each 250-volt battery bank and charger shall be demonstrated OPERABLE

SR 3.8.6.2 a. At least once per ~~7~~ 31 days by verifying that: — L.2

1. ~~The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,~~ — L.3

Add proposed SR 3.8.6.1 — M.1

2. ~~The pilot cell specific gravity, corrected to 77°F, and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200,~~ — L.3

L.4

SR 3.8.6.2 3. The pilot cell voltage is greater than or equal to ~~2.13~~ 2.07 volts, and

4. The overall battery voltage is greater than or equal to 250 volts.

See ITS 3.8.4

Add proposed SR 3.8.6.4 — M.1

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

M.2

b. At least once per ~~92~~ days by verifying that: 31 days for electrolyte level

L.4

SR 3.8.6.5 1. The voltage of each connected cell is greater than or equal to ~~2.13~~ 2.07 volts under float charge.

2. ~~The specific gravity, corrected to 77°F, and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test, and~~ L.3

SR 3.8.6.3 3. The electrolyte level of each connected cell is ~~between the top of the minimum level indication mark and the bottom of the maximum level indication mark~~. greater than or equal to minimum established design limits L.5

c. At least once per 18 months by:

1. Verifying that the cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance,

2. Removing visible corrosion and verifying that the cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material,

3. Verifying that the battery charger will supply at least 300 amperes at greater than or equal to 250 volts for at least 4 hours.

d. At least once per 18 months, perform a battery service test during shutdown (MODES 5 or 6), by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the actual or simulated emergency loads for the design duty cycle. The battery charger will be disconnected throughout the test.

See ITS 3.8.4

A.3

SR 3.8.6.6 e. At least once per 60 months, conduct a performance test of battery capacity ~~during shutdown (MODES 5 or 6)~~ by verifying that the battery capacity is at least 80% of the manufacturer's rating. ~~When this test is performed in place of a battery service test, a modified performance test shall be conducted.~~ L.6

See ITS 3.8.4

or modified performance discharge L.7

Annual performance tests of battery capacity shall be given to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. ~~Degradation is indicated when the battery capacity drops more than 10% from its capacity on the previous performance test, or is below 90% of the manufacturer's rating.~~ If the battery has reached 85% of service life, delivers a capacity of 100% or greater of the manufacturer's rated capacity, and has shown no signs of degradation, performance testing at two year intervals is acceptable until the battery shows signs of degradation. LA.1

ITS 3.8.6

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - SHUTDOWN

LIMITING CONDITION FOR OPERATION

Add proposed LCO 3.8.6 A.2

3.8.2.4 As a minimum, the following D.C. electrical equipment and bus shall be energized and OPERABLE: See ITS 3.8.5 and 3.8.10

1 - 250-volt D.C. bus, and See ITS 3.8.10

1 - 250-volt battery bank and charger associated with the above D.C. bus. See ITS 3.8.10

APPLICABILITY: MODES 5 and 6, and during movement of irradiated fuel. A.2

ACTION:

Add proposed ACTIONS A, B, C, D, E, and F L.1

With less than the above complement of D.C. equipment and bus OPERABLE

a. Immediately suspend all operations involving CORE ALTERATIONS, movement of irradiated fuel assemblies, and positive reactivity changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2. See ITS 3.8.5 and 3.8.10

b. Immediately initiate actions to restore the required D.C. electrical equipment and bus to OPERABLE status.

c. Immediately declare associated required residual heat removal loop(s) inoperable. See ITS 3.8.10

SURVEILLANCE REQUIREMENTS

4.8.2.4.1 The above required 250-volt D.C. bus shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability. See ITS 3.8.10

4.8.2.4.2 The above required 250-volt battery bank and charger shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

See CTS markup pages 1 of 10 and 2 of 10

A.1

ITS

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING - TRAIN N BATTERY SYSTEM

LIMITING CONDITION FOR OPERATION — Add proposed LCO 3.8.6 — A.2

3.8.2.5 The following D.C. bus train shall be energized and OPERABLE:

TRAIN N consisting of 250-volt D.C. bus N, 250-volt D.C. battery bank N, and a full capacity charger. — See ITS 3.8.4 and 3.8.9

APPLICABILITY: MODES 1, 2 and 3. — A.2

ACTION — Add proposed ACTIONS A, B, C, D, E, and F — L.1

With the Train N battery system inoperable, declare the turbine driven Auxiliary Feedwater Pump inoperable and follow the ACTION statement of Specification 3.7.1.2. — See ITS 3.8.4 and 3.8.9

SURVEILLANCE REQUIREMENTS

4.8.2.5.1 The D.C. bus train N shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability. — See ITS 3.8.9

4.8.2.5.2 The 250-volt battery bank and charger shall be demonstrated OPERABLE: — L.2

SR 3.8.6.2 a. At least once per ~~7~~ 31 days by verifying that:

1. ~~The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,~~ — L.3

Add proposed SR 3.8.6.1 — M.1

2. ~~The pilot cell specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200,~~ — L.3

SR 3.8.6.2 3. The pilot cell voltage is greater than or equal to ~~2.13~~ 2.07 volts, and — L.4

4. The overall battery voltage is greater than or equal to 250 volts. — See ITS 3.8.4

b. At least once per ~~92~~ days by verifying that: — 31 days for electrolyte level — M.2 — L.4

SR 3.8.6.5 1. The voltage of each connected cell is greater than or equal to ~~2.13~~ 2.07 volts under float charge.

2. ~~The specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test, and~~ — L.3

SR 3.8.6.3 3. The electrolyte level of each connected cell is ~~between the top of the minimum level indication mark and the bottom of the maximum level indication mark.~~ greater than or equal to minimum established design limits — L.5

Add proposed SR 3.8.6.4 — M.1

ITS 3.8.6

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

c. At least once per 18 months by:

1. Verifying that the cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance.

2. Removing visible corrosion and verifying that the cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material.

3. Verifying that the battery charger will supply at least 25 amperes at greater than or equal to 250 volts for at least 4 hours. — See ITS 3.8.4

d. At least once per 18 months perform a battery service test, during shutdown (MODES 5 or 6), by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the actual or simulated emergency loads for the design duty cycle with the battery charger disconnected.

SR 3.8.6.6

e. At least once per 60 months, conduct a performance test [or modified performance discharge] of battery capacity ~~during shutdown (MODES 5 or 6)~~ by verifying that the battery capacity is at least 80% of the manufacturer's rating. ~~When this test is performed in place of a battery service test, a modified performance test shall be conducted.~~ — A.3, L.6, L.7, See ITS 3.8.4

Annual performance tests of battery capacity shall be given to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. ~~Degradation is indicated when the battery capacity drops more than 10% from its capacity on the previous performance test, or is below 90% of the manufacturer's rating.~~ If the battery has reached 85% of service life, delivers a capacity of 100% or greater of the manufacturer's rated capacity, and has shown no signs of degradation, performance testing at two year intervals is acceptable until the battery shows signs of degradation. — LA.1

A.1

ITS

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

Add proposed LCO 3.8.6 — A.2

3.8.2.3 The following D.C. bus trains shall be energized and OPERABLE with tie breakers between bus trains open:

TRAIN AB consisting of 250-volt D.C. bus AB, 250-volt D.C. battery bank No. 2AB, and a full capacity charger, and

TRAIN CD consisting of 250-volt D.C. bus CD, 250-volt D.C. battery bank No. 2CD, and a full capacity charger.

See ITS 3.8.4 and 3.8.9

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

ACTION

a. With one 250-volt D.C. bus inoperable, restore the inoperable bus to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. — See ITS 3.8.9

b. With one 250-volt D.C. battery and/or its charger inoperable, restore the inoperable battery and/or charger to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. — See ITS 3.8.4

Add proposed ACTIONS A, B, C, D, E, and F — L.1

SURVEILLANCE REQUIREMENTS

4.8.2.3.1 Each D.C. bus train shall be determined OPERABLE and energized with tie breakers open at least once per 7 days by verifying correct breaker alignment and indicated power availability. — See ITS 3.8.9

4.8.2.3.2 Each 250-volt battery bank and charger shall be demonstrated OPERABLE

SR 3.8.6.2 a. At least once per ~~7~~ 31 days by verifying that: — L.2

1. ~~The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,~~ — L.3

Add proposed SR 3.8.6.1 — M.1

2. ~~The pilot cell specific gravity, corrected to 77°F, and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200,~~ — L.3 — L.4

SR 3.8.6.2 3. The pilot cell voltage is greater than or equal to ~~2.13~~ 2.07 volts, and

4. The overall battery voltage is greater than or equal to 250 volts. — See ITS 3.8.4

Add proposed SR 3.8.6.4 — M.1

ITS 3.8.6

A.1

ITS

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

M.2

b. At least once per ~~92~~ 31 days for electrolyte level days by verifying that:

L.4

SR 3.8.6.5 1. The voltage of each connected cell is greater than or equal to ~~2.13~~ 2.07 volts under float charge.

~~2. The specific gravity, corrected to 77°F, and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test, and~~ L.3

SR 3.8.6.3 3. The electrolyte level of each connected cell is ~~between the top of the minimum level indication mark and the bottom of the maximum level indication mark.~~ greater than or equal to minimum established design limits L.5

c. At least once per 18 months by:

1. Verifying that the cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance,

2. Removing visible corrosion and verifying that the cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material,

3. Verifying that the battery charger will supply at least 300 amperes at greater than or equal to 250 volts for at least 4 hours.

d. At least once per 18 months, perform a battery service test during shutdown (MODES 5 or 6), by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the actual or simulated emergency loads for the design duty cycle. The battery charger will be disconnected throughout the test.

See ITS 3.8.4

A.3

SR 3.8.6.6 e. At least once per 60 months, conduct a performance test or modified performance discharge of battery capacity ~~during shutdown (MODES 5 or 6)~~ by verifying that the battery capacity is at least 80% of the manufacturer's rating. ~~When this test is performed in place of a battery service test, a modified performance test shall be conducted.~~ L.6

See ITS 3.8.4

L.7

Annual performance tests of battery capacity shall be given to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. ~~Degradation is indicated when the battery capacity drops more than 10% from its capacity on the previous performance test, or is below 90% of the manufacturer's rating.~~ If the battery has reached 85% of service life, delivers a capacity of 100% or greater of the manufacturer's rated capacity, and has shown no signs of degradation, performance testing at two year intervals is acceptable until the battery shows signs of degradation.

LA.1

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ITS 3.8.6

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - SHUTDOWN

LIMITING CONDITION FOR OPERATION

Add proposed LCO 3.8.6 A.2

3.8.2.4 As a minimum, the following D.C. electrical equipment and bus shall be energized and OPERABLE:

See ITS 3.8.5 and 3.8.10

1 - 250-volt D.C. bus, and

See ITS 3.8.10

1 - 250-volt battery bank and charger associated with the above D.C. bus.

See ITS 3.8.5

APPLICABILITY: MODES 5 and 6. A.2

ACTION:

Add proposed ACTIONS A, B, C, D, E, and F L.1

With less than the above complement of D.C. equipment and bus OPERABLE.

a. Immediately suspend all operations involving CORE ALTERATIONS, movement of irradiated fuel assemblies, and positive reactivity changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2.

See ITS 3.8.5 and 3.8.10

b. Immediately initiate actions to restore the required D.C. electrical equipment and bus to OPERABLE status.

c. ~~Immediately declare associated required residual heat removal loop(s) inoperable.~~

See ITS 3.8.10

SURVEILLANCE REQUIREMENTS

4.8.2.4.1 The above required 250-volt D.C. bus shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

See ITS 3.8.10

4.8.2.4.2 The above required 250-volt battery bank and charger shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

See CTS markup pages 6 of 10 and 7 of 10

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ITS 3.8.6

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING - TRAIN N BATTERY SYSTEM

LIMITING CONDITION FOR OPERATION

Add proposed LCO 3.8.6 — A.2

3.8.2.5 The following D.C. bus train shall be energized and OPERABLE:

TRAIN N consisting of 250-volt D.C. bus N, 250-volt D.C. battery bank N, and a full capacity charger. — See ITS 3.8.4 and 3.8.9

APPLICABILITY: MODES 1, 2 and 3. — A.2

ACTION

Add proposed ACTIONS A, B, C, D, E, and F — L.1

With the Train N battery system inoperable, declare the turbine driven Auxiliary Feedwater Pump inoperable and follow the ACTION statement of Specification 3.7.1.2. — See ITS 3.8.4 and 3.8.9

SURVEILLANCE REQUIREMENTS

4.8.2.5.1 The D.C. bus train N shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability. — See ITS 3.8.9

4.8.2.5.2 The 250-volt battery bank and charger shall be demonstrated OPERABLE: — L.2

SR 3.8.6.2 a. At least once per ~~7~~ 31 days by verifying that:

1. ~~The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,~~ — L.3

Add proposed SR 3.8.6.1 — M.1

2. ~~The pilot cell specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200,~~ — L.3

SR 3.8.6.2 3. The pilot cell voltage is greater than or equal to ~~2.13~~ 2.07 volts, and — L.4

4. The overall battery voltage is greater than or equal to 250 volts. — See ITS 3.8.4

b. At least once per 92 days by verifying that: — 31 days for electrolyte level — M.2

SR 3.8.6.5 1. The voltage of each connected cell is greater than or equal to ~~2.13~~ 2.07 volts under float charge. — L.4

2. ~~The specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test, and~~ — L.3

SR 3.8.6.3 3. The electrolyte level of each connected cell is ~~between the top of the minimum level indication mark and the bottom of the maximum level indication mark.~~ greater than or equal to minimum established design limits — L.5

Add proposed SR 3.8.6.4 — M.1

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A.1

ITS

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

c. At least once per 18 months by:

1. Verifying that the cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance.

2. Removing visible corrosion and verifying that the cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material.

3. Verifying that the battery charger will supply at least 25 amperes at greater than or equal to 250 volts for at least 4 hours.

d. At least once per 18 months perform a battery service test, during shutdown (MODES 5 or 6), by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the actual or simulated emergency loads for the design duty cycle with the battery charger disconnected.

See ITS 3.8.4

A.3

SR 3.8.6.6

e. At least once per 60 months, conduct a performance test of battery capacity during shutdown (MODES 5 or 6), by verifying that the battery capacity is at least 80% of the manufacturer's rating. When this test is performed in place of a battery service test, a modified performance test shall be conducted.

or modified performance discharge

L.6

See ITS 3.8.4

L.7

Annual performance tests of battery capacity shall be given to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% from its capacity on the previous performance test, or is below 90% of the manufacturer's rating. If the battery has reached 85% of service life, delivers a capacity of 100% or greater of the manufacturer's rated capacity, and has shown no signs of degradation, performance testing at two year intervals is acceptable until the battery shows signs of degradation.

LA.1

DISCUSSION OF CHANGES
ITS 3.8.6, BATTERY PARAMETERS

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A.2 CTS 3.8.2.3 is applicable during MODES 1, 2, 3, and 4. CTS 3.8.2.4 (Unit 1) is applicable during MODES 5 and 6 and during movement of irradiated fuel. CTS 3.8.2.4 (Unit 2) is applicable during MODES 5 and 6. CTS 3.8.2.5 is applicable during MODES 1, 2, and 3. ITS LCO 3.8.6 requires the battery parameters for the Trains A, B, and N 250 VDC batteries, and opposite unit Trains A and B 250 VDC batteries to be within limits. ITS 3.8.6, which only covers the requirements for battery parameters, is applicable when the associated DC electrical power subsystems are required to be OPERABLE. This changes the CTS by combining the requirements for the Train A, B, and N 250 VDC battery parameters into one Specification and replacing the actual MODES with the phrase "When associated DC electrical power subsystems are required to be OPERABLE."

The purpose of ITS 3.8.6 is to cover the battery parameter requirements for the Trains A, B, and N 250 VDC batteries in one Specification. This change combines the CTS 3.8.2.3, 3.8.2.4, and 3.8.2.5 requirements for the Trains A, B, and N 250 VDC battery parameters into one Specification. There are no technical changes as a result of this change since it simply converts the Specifications into the format of the ITS. The proposed Applicability ensures the battery parameter requirements are met when the associated battery is required to be OPERABLE. Any technical changes to the battery parameters are discussed below. Any changes to the LCO and Applicability of the Trains A, B, and N 250 VDC, and opposite unit Trains A and B 250 VDC batteries are discussed in the Discussion of Changes for ITS 3.8.4 and 3.8.5. This change is designated as administrative because it does not result in technical changes to the CTS.

A.3 CTS 4.8.2.3.2.e requires the performance test of battery capacity on the Trains A and B 250 VDC batteries. CTS 4.8.2.5.2.e requires the performance test of battery capacity on the Train N 250 VDC battery. These tests must be performed during shutdown (MODES 5 or 6). ITS SR 3.8.6.6 requires the same test, but a Note to SR 3.8.6.6 specifies that this Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. In addition, the Note states that credit may be taken for unplanned events that satisfy this SR. This changes the CTS by adding the allowance that credit may be taken for unplanned events that satisfy the associated SR. Additional changes to CTS 4.8.2.3.2.e and CTS 4.8.2.5.2.e are discussed in DOC L.6.

The ITS Note clearly presents the allowance of the current practice of taking credit for unplanned events, provided the necessary data is obtained. This change is designated as administrative because it does not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

M.1 CTS 4.8.2.3.2 specifies the Surveillances for the Trains A and B 250 VDC batteries while the unit is operating and CTS 4.8.2.4.2 specifies the Surveillances for the Trains A and B 250 VDC batteries during shutdown. CTS 4.8.2.5.2 specifies the Surveillances for the Train N 250 VDC battery. ITS 3.8.6 adds two new Surveillances. ITS SR 3.8.6.1 requires the verification every 7 days that each battery float current is ≤ 2 amps. ITS SR 3.8.6.4 requires the verification every 31 days that each battery pilot cell temperature is greater than or equal to the minimum established design limits. This changes the CTS by adding explicit Surveillances for battery float current and pilot cell temperature.

The purpose of SR 3.8.6.1 is to assist in the determination of the state of charge of the battery while the purpose of SR 3.8.6.4 is to ensure the pilot cell electrolyte temperature is maintained above the limit to assure the battery can provide the required current and voltage to meet the design requirements. The specified float current is based on the float current that is indicative of a charged battery. Temperatures lower than assumed in battery sizing calculations act to inhibit or reduce battery capacity. These Surveillances are consistent with IEEE 450-1995. This change is acceptable since the Surveillances are necessary to help ensure the batteries remain OPERABLE. This change is designated as more restrictive because explicit Surveillance Requirements have been added.

M.2 CTS 4.8.2.3.2.b.3 and CTS 4.8.2.5.2.b.3 require verification that electrolyte level of each battery connected cell be within limit every 92 days. ITS SR 3.8.6.3 requires verification of each battery connected cell electrolyte level is greater than or equal to the established limit every 31 days. This changes the CTS by increasing the Frequency of performance of the Surveillances from 92 days to 31 days.

The purpose of CTS 4.8.2.3.2.b.3 and CTS 4.8.2.5.2.b.3 is to ensure the electrolyte level is within the specified limit to ensure the battery plates suffer no physical damage and maintains adequate electron transfer capability. The applicable IEEE 450-1995 standard recommends a Surveillance Frequency of 31 days. The change is acceptable since it will help ensure the battery plates will not suffer physical damage and maintain adequate electron transfer capability. This change is designated as more restrictive because the Surveillance Requirement Frequency has been increased.

RELOCATED SPECIFICATIONS

None

DISCUSSION OF CHANGES
ITS 3.8.6, BATTERY PARAMETERS

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 4.8.2.3.2.e and CTS 4.8.2.5.2.e require the performance of a battery performance test. The Surveillance requires a more frequent performance if the battery shows signs of "degradation" or has reached 85% of the service life expected for the application. The CTS further states that degradation is indicated when the battery capacity drops more than 10% from its capacity on the previous performance test, or is below 90% of the manufacturer's rating. ITS SR 3.8.6.6 requires verification of the battery capacity when subjected to a performance discharge test or a modified performance discharge test. The Surveillance is also required more frequently when the battery shows degradation or has reached 85% of the expected life, but the definition of what constitutes "degradation" is not included. This changes the CTS by moving the detail on how degradation is determined from the CTS to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. ITS SR 3.8.6.6 retains the requirement to verify the battery capacity when subjected to a performance discharge test or a modified performance discharge test. The Surveillance also requires more frequent performance when the battery shows degradation or has reached 85% of the expected life. This change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L.1 *(Category 4 – Relaxation of Required Action)* CTS 3.8.2.3 Action b specifies the compensatory actions for inoperable batteries associated with the Trains A and B 250 VDC electrical power subsystem during MODES 1, 2, 3, and 4. The compensatory action requires restoration within 2 hours before commencing a reactor shutdown. CTS 3.8.2.4 Actions a and b specify the compensatory actions for inoperable batteries associated with the Trains A and B 250 VDC electrical power subsystem during MODES 5 and 6, and (for Unit 1 only) during movement of irradiated fuel. The compensatory actions require immediate actions to suspend certain activities and to commence actions to restore the inoperable equipment to OPERABLE status. CTS 3.8.2.5 Action specifies the compensatory actions for the battery associated with the Train N 250 VDC electrical power subsystem during MODES 1, 2, and 3. The compensatory action is to immediately declare the associated equipment inoperable and take the appropriate actions for an inoperable turbine driven auxiliary feedwater train. In lieu of immediately declaring the associated battery inoperable, the ITS 3.8.6 ACTIONS provide compensatory actions for when battery parameters are not within limits that may be taken prior to declaring the associated battery

DISCUSSION OF CHANGES
ITS 3.8.6, BATTERY PARAMETERS

inoperable. This changes the CTS by adding compensatory actions specifically designed for battery parameters.

The purpose of the ITS 3.8.6 ACTIONS is to allow a certain amount of time to restore battery parameters to within limits before declaring the associated battery inoperable. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the repair period. ACTIONS have been added to allow a short time period to restore parameters to within limits. ITS 3.8.6 ACTION A covers the condition of one or more batteries with one or more battery cells float voltage less than the specified limit. ITS 3.8.6 ACTION A requires the performance of SR 3.8.4.1 in 2 hours, the performance of SR 3.8.6.1 within 2 hours, and restoration of the affected cell voltage to within limits within 24 hours. ITS 3.8.6 ACTION B covers the condition of one or more batteries with float current not within the specified limit. ITS 3.8.6 ACTION B requires the performance of SR 3.8.4.1 in 2 hours and restoration of the battery float current to within limits within 12 hours. ITS 3.8.6 ACTION C covers the condition of one or more batteries with one or more cells electrolyte level less than minimum established design limits. ITS 3.8.6 ACTION C requires the restoration of electrolyte level to above top of plates within 8 hours, verification that there is no evidence of leakage within 12 hours, and restoration of electrolyte level to greater than or equal to the minimum established design limits within 31 days. ITS 3.8.6 ACTION D covers the condition of one or more batteries with pilot cell electrolyte temperature less than the minimum established design limits. ITS 3.8.6 ACTION D requires the restoration of battery pilot cell temperature to greater than or equal to minimum established design limits within 12 hours. ITS 3.8.6 ACTION E covers the condition of batteries in redundant trains with battery parameters not within limits. ITS 3.8.6 ACTION E requires restoration of the battery parameters for battery in one train to within limits within 2 hours. ITS 3.8.6 ACTION F covers the condition when a Required Action and associated Completion Time of any of the above ACTIONS could not be met, or if one or more batteries with one or more battery cells float voltage and float current are not within limits, or if ITS SR 3.8.6.6 is not met. ITS 3.8.6 ACTION F requires the immediate declaration that the associated battery is inoperable. The allowances are considered acceptable since only a short time is allowed to exist with battery parameters not within limits. In addition, when redundant batteries have battery parameters not within limit, only 2 hours is allowed to restore at least one redundant train before declaring the battery inoperable. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.2 *(Category 7 – Relaxation Of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.8.2.3.2.a.3 and CTS 4.8.2.5.2.a.3 require the verification that the pilot cell voltage is greater than or equal to the specified limit every 7 days. ITS SR 3.8.6.2 requires the verification of each pilot battery cell voltage every

DISCUSSION OF CHANGES
ITS 3.8.6, BATTERY PARAMETERS

31 days. This changes the CTS by extending the Surveillance interval for verification of pilot cell voltage from 7 days to 31 days.

The purpose of ITS 3.8.6.2 is to ensure the cell float voltages are equal to or greater than the short term absolute minimum voltage. This change extends the Surveillance Frequency from 7 days to 31 days for verification of pilot cell voltage. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability , as shown in NRC-approved TSTF-360, Revision 1, and is consistent with the Frequency recommended in IEEE-450, 1995. This change is also acceptable since ITS 5.5.15, "Battery Monitoring and Maintenance Program," has been added which requires actions to be taken to restore battery cells with float voltage < 2.13 V. This program will help ensure the cell voltage will not approach the ITS SR 3.8.6.2 limit of 2.07 V. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.3 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.8.2.3.2.a.1 and CTS 4.8.2.5.2.a.1 require the verification that the electrolyte level of each pilot cell is between the minimum and maximum level indication marks. CTS 4.8.2.3.2.a.2 and CTS 4.8.2.5.2.a.2 require the verification that the pilot cell specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200. CTS 4.8.2.3.2.b.2 and CTS 4.8.2.5.2.b.2 require the verification that the specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test. ITS 3.8.6 does not include these Surveillances. This changes the CTS by deleting these Surveillances.

The purpose of CTS 4.8.2.3.2.a.1 and CTS 4.8.2.5.2.a.1, the electrolyte level verification, is to ensure the battery cells contain sufficient electrolyte level for electron transfer capability and the purpose of CTS 4.8.2.3.2.a.2, CTS 4.8.2.3.2.b.2, CTS 4.8.2.5.2.a.2, and CTS 4.8.2.5.2.b.2, the specific gravity verification, is to ensure the state of charge of each cell. This change is acceptable because the deleted Surveillance Requirements are not necessary to verify that the equipment used to meet the LCO can perform its required functions. Thus, appropriate equipment continues to be tested in a manner and at a Frequency necessary to give confidence that the equipment can perform its assumed safety function. The specified Surveillances have been deleted, however other Surveillances are included which help to ensure the batteries will function as designed. ITS SR 3.8.6.1 (discussed in DOC M.1) requires the verification that each battery float current is $\leq$ 2 amps every 7 days and ITS SR 3.8.6.3 requires the verification that each battery connected cell electrolyte level is greater than or equal to minimum established design limits every 31 days. IEEE 450-1995, Section 4.5 states that the most accurate indicator of return to full charge is a stabilized charging or float current. Specific gravity readings may not be accurate when the battery is on charge following a discharge. The Frequency for verification of electrolyte level in CTS 4.8.2.3.2.b.3 and CTS 4.8.2.5.2.b.3, for each connected cell, has been increased from every

DISCUSSION OF CHANGES
ITS 3.8.6, BATTERY PARAMETERS

92 days to every 31 days as discussed in DOC M.2. These Surveillances give a better indication of the overall battery conditions. This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

L.4 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.8.2.3.2.a.3 and CTS 4.8.2.5.2.a.3 require the verification that the pilot cell voltage is ≥ 2.13 V. CTS 4.8.2.3.2.b.1 and CTS 4.8.2.5.2.b.1 require the verification that the connected cell voltage is ≥ 2.13 V. ITS SR 3.8.6.2 requires the verification of each pilot cell voltage is ≥ 2.07 V. ITS SR 3.8.6.5 requires the verification that each battery connected cell voltage is ≥ 2.07 V. This changes the CTS by reducing the acceptance criteria for pilot cell and battery connected cell voltage limits from ≥ 2.13 V to ≥ 2.07 V.

The purpose of the proposed Surveillance limit in ITS SR 3.8.6.2 and SR 3.8.6.5 is to ensure the cell voltages are greater than or equal to the short term absolute minimum voltage. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. This changes the CTS by reducing the acceptance criteria for pilot cell and battery connected cell voltage limits from ≥ 2.13 V to ≥ 2.07 V. At this lower voltage the cell can still perform its function. The battery is considered OPERABLE when the battery voltage on float is greater than or equal to the minimum establish voltage of ITS SR 3.8.4.1. This change is acceptable since ITS 5.5.15, "Battery Monitoring and Maintenance Program," has been added and requires actions to be taken to restore battery cells with float voltage < 2.13 V. This program will help ensure the cell voltage will not approach the limit of 2.07 V and that the minimum established voltage of ITS SR 3.8.4.1 is maintained. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.5 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.8.2.3.2.b.3 and CTS 4.8.2.5.2.b.3 require the verification that the battery electrolyte level of each connected cell is between the top of the minimum level indication mark and the bottom of the maximum level indication mark. ITS SR 3.8.6.3 requires the verification that the battery connected cell electrolyte level is greater than or equal to minimum established design limits. This changes the CTS by deleting the specific value for the lower electrolyte level limit and deleting the upper electrolyte level limit requirement.

The purpose of the proposed Surveillance limit in ITS SR 3.8.6.3 is to ensure the battery plates do not suffer physical damage and maintain adequate electron transfer capability. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. This changes the CTS by deleting the specific value for the lower electrolyte level limit and replacing it with the minimum established design limit and deleting the upper electrolyte level limit requirement. This change is acceptable since the proposed level will continue to ensure that the battery and the cells remain OPERABLE to perform its specified safety function. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.6 *(Category 12 – Deletion of Surveillance Requirement Shutdown Performance Requirements)* CTS 4.8.2.3.2.e requires the performance of a battery performance test on the Trains A and B 250 VDC batteries. CTS 4.8.2.5.2.e requires the performance of a battery performance test on the Train N 250 VDC battery. These tests must be performed during shutdown (MODES 5 or 6). ITS SR 3.8.6.6 requires the same tests. A Note to SR 3.8.6.6 specifies that this Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the unit is maintained or enhanced. This changes the CTS by allowing the test to be performed in MODES other than MODE 5 or 6 as long as an assessment determines the safety of the unit is maintained or enhanced.

The purpose of the shutdown restriction in CTS 4.8.2.3.2.e and CTS 4.8.2.5.2.e is to ensure the batteries are not tested in a condition that can compromise unit safety. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. The proposed Surveillance does not include the strict restriction on unit conditions. The control of the unit conditions appropriate to perform the test is an issue for procedures and scheduling, and has been determined by the NRC Staff to be unnecessary as a Technical Specification restriction. As indicated in Generic Letter 91-04, allowing this control is consistent with the vast majority of other Technical Specification Surveillances that do not dictate unit conditions for the Surveillance. This change is designated as less restrictive because the Surveillance may be performed at plant conditions other than shutdown.

L.7 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.8.2.3.2.e requires the performance of a battery performance test on the Trains A and B 250 VDC batteries. CTS 4.8.2.5.2.e requires the performance of a battery performance test on the Train N 250 VDC battery. ITS SR 3.8.6.6 requires the performance of a performance discharge test or a modified performance discharge test. This changes the CTS by adding the allowance to perform a modified performance discharge test instead of the performance discharge test.

The purpose of ITS SR 3.8.6.6 is to verify the capacity is $\geq$ 80% of the manufacturer's rating. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. This changes the CTS by adding the allowance to perform a modified performance discharge test instead of the performance discharge test. The modified performance discharge test is performed by testing the battery using the service test profile for the first 4 hours followed by the performance discharge test profile for the remainder of the test. Since the amps removed during the first four hours can be accurately calculated, the test rate can be changed to that of the modified performance discharge test without compromising the results of the performance discharge test. This method has been determined by the system engineer (I&M) and the battery manufacturer to

DISCUSSION OF CHANGES
ITS 3.8.6, BATTERY PARAMETERS

be an acceptable modified performance test procedure, and is consistent with IEEE 450-1995. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

3.8 ELECTRICAL POWER SYSTEMS

3.8.6 Battery Parameters

~~- REVIEWER'S NOTE -~~
~~Licensees must implement a program, as specified in Specification 5.5.17, to monitor battery parameters that is based on the recommendations of IEEE Standard 450-1995, "IEEE Recommended Practice For Maintenance, Testing, And Replacement Of Vented Lead-Acid Batteries For Stationary Applications."~~ 1

DOC A.2

LCO 3.8.6 Battery parameters for Train A ~~and~~ Train B batteries shall be within limits. INSERT 1 2

APPLICABILITY: When associated DC electrical power subsystems are required to be OPERABLE.

ACTIONS

- NOTE -
Separate Condition entry is allowed for each battery.

DOC L.1

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One [or two] batter[y][ies] [on one train] with one or more battery cells float voltage < [2.07] V. (more)	A.1	Perform SR 3.8.4.1.	2 hours
	AND		
	A.2	Perform SR 3.8.6.1.	2 hours
	AND		
	A.3	Restore affected cell voltage ≥ [2.07] V.	24 hours
B. One [or two] batter[y][ies] [on one train] with float current > [2] amps. (more)	B.1	Perform SR 3.8.4.1.	2 hours
	AND		
	B.2	Restore battery float current to ≤ [2] amps.	[12] hours

DOC L.1

3
3
3
3
3

2 **INSERT 1**

, Train N, and Unit 2 (Unit 1) and Unit 1 (Unit 2) Train A and Train B

CTS

ACTIONS (continued)

	CONDITION	REQUIRED ACTION		COMPLETION TIME	
DOC L.1	- NOTE - Required Action C.2 shall be completed if electrolyte level was below the top of plates.		- NOTE - Required Actions C.1 and C.2 are only applicable if electrolyte level was below the top of plates.		
more	C. One or two batteries on one train with one or more cells electrolyte level less than minimum established design limits.	C.1	Restore electrolyte level to above top of plates	8 hours	3
		AND			
		C.2	Verify no evidence of leakage.	12 hours	
		AND			
		C.3	Restore electrolyte level to greater than or equal to minimum established design limits.	31 days	
DOC L.1 more	D. One or two batteries on one train with pilot cell electrolyte temperature less than minimum established design limits.	D.1	Restore battery pilot cell temperature to greater than or equal to minimum established design limits	12 hours	3
DOC L.1	E. One or more batteries in redundant trains with battery parameters not within limits.	E.1	Restore battery parameters for batteries in one train to within limits. 4	2 hours	2

CTS

Battery Parameters
3.8.6

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
DOC L.1	F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met. OR more One or two batteries on one train with one or more battery cells float voltage < 2.07 V and float current > 2 amps. OR SR 3.8.6.6 not met.	F.1 Declare associated battery inoperable.	Immediately	3 5

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
DOC M.1	SR 3.8.6.1	- NOTE - Not required to be met when battery terminal voltage is less than the minimum established float voltage of SR 3.8.4.1. Verify each battery float current is ≤ 2 amps.	7 days	3
4.8.2.3.2.a.3, 4.8.2.5.2.a.3	SR 3.8.6.2	Verify each battery pilot cell voltage is ≥ 2.07 V.	31 days	3
4.8.2.3.2.b.3, 4.8.2.5.2.b.3	SR 3.8.6.3	Verify each battery connected cell electrolyte level is greater than or equal to minimum established design limits.	31 days	
DOC M.1	SR 3.8.6.4	Verify each battery pilot cell temperature is greater than or equal to minimum established design limits.	31 days	

CTS

SURVEILLANCE REQUIREMENTS (continued)

		SURVEILLANCE	FREQUENCY	
4.8.2.3.2.b.1, 4.8.2.5.2.b.1	SR 3.8.6.5	Verify each battery connected cell voltage is ≥ [2.07] V.	92 days	3
4.8.2.3.2.e, 4.8.2.5.2.e	SR 3.8.6.6	- NOTE - normally 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.	INSERT 2	4
		Verify battery capacity is ≥ [80%] of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test.	60 months AND 12 months when battery shows degradation, or has reached [85]% of the expected life with capacity < 100% of manufacturer's rating AND 24 months when battery has reached [85]% of the expected life with capacity ≥ 100% of manufacturer's rating	3

4

INSERT 2

However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the ~~plant~~ is maintained or enhanced.

unit

6

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JUSTIFICATION FOR DEVIATIONS
ITS 3.8.6, BATTERY PARAMETERS

1. The "Reviewer Note" has been deleted since it is not intended to be retained in the plant specific ITS submittal.

2. ISTS LCO 3.8.6 has been modified to be consistent with the requirements specified in ITS LCO 3.8.4. Additional requirements were added to ISTS LCO 3.8.6 to ensure the appropriate DC Sources are OPERABLE. In addition, due to the addition of these DC Sources, ISTS 3.8.6 Conditions A, B, C, D, and F have been modified to allow batteries in two trains to have battery parameters not within limits. ITS 3.8.6 ACTION E will ensure that if batteries in redundant trains have battery parameters not within limits, the restoration time is properly limited consistent with the intent of the ISTS 3.8.6 ACTIONS.

3. The brackets have been removed and the proper plant specific information/value has been provided.

4. TSTF-283, Rev. 3, was approved by the NRC on April 13, 2000. However, when NUREG-1431, Rev. 2, was issued, this TSTF was not completely included. Therefore, changes approved by TSTF-283, Rev. 3, have been made.

5. ISTS SR 3.8.6.6 requires a battery performance discharge or modified performance discharge test to be performed and provides acceptance criteria. However, no ACTION is provided in the ISTS 3.8.6 ACTIONS for when this SR is not met. Thus in the ISTS, LCO 3.0.3 would have to be entered. To preclude an LCO 3.0.3 entry, ISTS 3.8.6 Condition F has been modified to cover the case when SR 3.8.6.6 is not met. ACTION F will require the associated battery to be declared inoperable. This is also consistent with the current licensing basis.

6. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

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Improved Standard Technical Specifications (ISTS) Bases Markup and Justification for Deviations (JFDs)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.6 Battery Parameters

BASES

electrical 7

1 INSERT 1

BACKGROUND

7 cell

This LCO delineates the limits on battery float current as well as electrolyte temperature, level, and float voltage for the DC power subsystem batteries. A discussion of these batteries and their OPERABILITY requirements is provided in the Bases for LCO 3.8.4, "DC Sources - Operating," and LCO 3.8.5, "DC Sources - Shutdown." In addition to the limitations of this Specification, the licensee controlled program also implements a program specified in Specification 5.5.[ ] for monitoring various battery parameters that is based on the recommendations of IEEE Standard 450-1995, "IEEE Recommended Practice For Maintenance, Testing, And Replacement Of Vented Lead-Acid Batteries For Stationary Applications" (Ref. 1). 15 3

The battery cells are of flooded lead acid construction with a nominal specific gravity of [1.215]. ~~This specific gravity corresponds to an open circuit battery voltage of approximately 120 V for [58] cell battery (i.e., cell voltage of [2.065] volts per cell (Vpc)).~~ The open circuit voltage is the voltage maintained when there is no charging or discharging. Once fully charged with its open circuit voltage ≥ [2.065] Vpc, the battery cell will maintain its capacity for [30] days without further charging per manufacturer's instructions. Optimal long term performance however, is obtained by maintaining a float voltage [2.20] to 2.25] Vpc. This provides adequate over-potential which limits the formation of lead sulfate and self discharge. ~~The nominal float voltage of [2.22] Vpc corresponds to a total float voltage output of [128.8] V for a [58] cell battery as discussed in the FSAR, Chapter [8] (Ref. 2).~~

1 9 some time 9 1 2 1 9

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in the FSAR, ~~Chapter [6] (Ref. 4) and~~ Chapter [15] (Ref. 2), assume Engineered Safety Feature systems are OPERABLE. The DC electrical power system provides normal and emergency DC electrical power for the DGs, emergency auxiliaries, and control and switching during all MODES of operation.

U 14 2 1

INSERT 2

~~The OPERABILITY of the DC subsystems is consistent with the initial assumptions of the accident analyses and is based upon meeting the design basis of the unit. This includes maintaining at least one train of DC sources OPERABLE during accident conditions in the event of:~~

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

8

1 **INSERT 1**

Battery Monitoring and Maintenance Program

8 **INSERT 2**

The specific Applicable Safety Analyses for the DC Electrical Power System are provided in the Bases for LCO 3.8.4 and LCO 3.8.5.

BASES

APPLICABLE SAFETY ANALYSES (continued)

b. A worst case single failure. 8

Battery parameters satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii). 2

LCO	Battery parameters must remain within acceptable limits to ensure availability of the required DC power to shut down the reactor and maintain it in a safe condition after an anticipated operational occurrence transient 2 or a postulated DBA. Battery parameter limits are conservatively established, allowing continued DC electrical system function even with limits not met. Additional preventative maintenance, testing, and monitoring performed in accordance with the licensee controlled program INSERT 3 1 is conducted as specified in Specification 5.5.[ ]. 15 3
APPLICABILITY	The battery parameters are required solely for the support of the associated DC electrical power subsystems. Therefore, battery parameter limits are only required when the DC electrical power source subsystem is required to be OPERABLE. Refer to the Applicability discussion in Bases for LCO 3.8.4 and LCO 3.8.5. 7
ACTIONS	A.1, A.2, and A.3

With one or more cells in one or more batteries in one train 3 < [2.07] V, the battery cell is degraded. Within 2 hours verification of the required battery charger OPERABILITY is made by monitoring the battery terminal voltage (SR 3.8.4.1) and of the overall battery state of charge by monitoring the battery float charge current (SR 3.8.6.1). This assures that there is still sufficient battery capacity to perform the intended function. Therefore, the affected battery is not required to be considered inoperable solely as a result of one or more cells in one or more batteries < [2.07] V, and continued operation is permitted for a limited period up to 24 hours. 1 1

Since the Required Actions only specify "perform," a failure of SR 3.8.4.1 or SR 3.8.6.1 acceptance criteria does not result in this Required Action not met. However, if one of the SRs is failed the appropriate Condition(s), depending on the cause of the failures, is entered. If SR 3.8.6.1 is failed then there is not assurance that there is still sufficient battery capacity to perform the intended function and the battery must be declared inoperable immediately.

1 INSERT 3

Battery Monitoring and Maintenance Program

BASES

ACTIONS (continued)

B.1 and B.2

One or more batteries ~~in one train~~ with float > [2] amps indicates that a partial discharge of the battery capacity has occurred. This may be due to a temporary loss of a battery charger or possibly due to one or more battery cells in a low voltage condition reflecting some loss of capacity. Within 2 hours verification of the required battery charger OPERABILITY is made by monitoring the battery terminal voltage. If the terminal voltage is found to be less than the minimum established float voltage there are two possibilities, the battery charger is inoperable or is operating in the current limit mode. ~~Condition A addresses charger inoperability.~~ If the charger is operating in the current limit mode after 2 hours that is an indication that the battery has been substantially discharged and likely cannot perform its required design functions. The time to return the battery to its fully charged condition in this case is a function of the battery charger capacity, the amount of loads on the associated DC system, the amount of the previous discharge, and the recharge characteristic of the battery. The charge time can be extensive, and there is not adequate assurance that it can be recharged within [12] hours (Required Action B.2). The battery must therefore be declared inoperable. 3 1 7 1

If the float voltage is found to be satisfactory ~~but there are one or more battery cells with float voltage less than [2.07] V, the associated "OR" statement in Condition F is applicable and the battery must be declared inoperable immediately. If float voltage is satisfactory and there are no cells less than [2.07] V~~ there is good assurance that, within [12] hours, the battery will be restored to its fully charged condition (Required Action B.2) from any discharge that might have occurred due to a temporary loss of the battery charger. 7 1

~~- REVIEWER'S NOTE -~~
~~A plant that cannot meet the 12-hour Completion Time due to an inherent battery charging characteristic can propose an alternate time equal to 2 hours plus the time experienced to accomplish the exponential charging current portion of the battery charge profile following the service test (SR 3.8.4.3).~~ 4

A discharged battery with float voltage (the charger setpoint) across its terminals indicates that the battery is on the exponential charging current portion (the second part) of its recharge cycle. The time to return a battery to its fully charged state under this condition is simply a function

BASES

ACTIONS (continued)

of the amount of the previous discharge and the recharge characteristic of the battery. Thus there is good assurance of fully recharging the battery within [12] hours, avoiding a premature shutdown with its own attendant risk. 1

If the condition is due to one or more cells in a low voltage condition but still greater than [2.07] V and float voltage is found to be satisfactory, this is not indication of a substantially discharged battery and [12] hours is a reasonable time prior to declaring the battery inoperable. 1 1

Since Required Action B.1 only specifies "perform," a failure of SR 3.8.4.1 acceptance criteria does not result in the Required Action not met. However, if SR 3.8.4.1 is failed, the appropriate Condition(s), depending on the cause of the failure, is entered.

<u>C.1, C.2, and C.3</u>

With one or more batteries in one train with one or more cells electrolyte level above the top of the plates, but below the minimum established design limits, the battery still retains sufficient capacity to perform the intended function. Therefore, the affected battery is not required to be considered inoperable solely as a result of electrolyte level not met. Within 31 days the minimum established design limits for electrolyte level must be re-established. 3

15

With electrolyte level below the top of the plates there is a potential for dryout and plate degradation. Required Actions C.1 and C.2 address this potential (as well as provisions in Specification 5.5.17, Battery Monitoring and Maintenance Program). They are modified by a note that indicates they are only applicable if electrolyte level is below the top of the plates. Within 8 hours level is required to be restored to above the top of the plates. The Required Action C.2 requirement to verify that there is no leakage by visual inspection and the Specification 5.5.17.b item to initiate action to equalize and test in accordance with manufacturer's 15 recommendation are taken from Annex D of IEEE Standard 450-1995. *They are performed following the restoration of the electrolyte level to* above the top of the plates. Based on the results of the manufacturer's recommended testing the battery(ies) may have to be declared inoperable and the affected cell(s) replaced. 11 11 3 5 3 1

BASES

ACTIONS (continued)

D.1

With one or more batteries in one train with pilot cell temperature less than the minimum established design limits, 12 hours is allowed to restore the temperature to within limits. A low electrolyte temperature limits the current and power available. Since the battery is sized with margin, while battery capacity is degraded, sufficient capacity exists to perform the intended function and the affected battery is not required to be considered inoperable solely as a result of the pilot cell temperature not met.

E.1

With one or more batteries in redundant trains with battery parameters not within limits there is not sufficient assurance that battery capacity has not been affected to the degree that the batteries can still perform their required function, given that redundant batteries are involved. With redundant batteries involved this potential could result in a total loss of function on multiple systems that rely upon the batteries. The longer Completion Times specified for battery parameters on non-redundant batteries not within limits are therefore not appropriate, and the parameters must be restored to within limits on at least one train within 2 hours. (3)

F.1

(3) INSERT 3A

With one or more batteries with any battery parameter outside the allowances of the Required Actions for Condition A, B, C, D, or E, sufficient capacity to supply the maximum expected load requirement is not assured and the corresponding battery must be declared inoperable. Additionally, discovering one or more batteries in one train with one or more battery cells float voltage less than [2.07] V and float current greater than [2] amps indicates that the battery capacity may not be sufficient to perform the intended functions. The battery must therefore be declared inoperable immediately. (1)

SURVEILLANCE REQUIREMENTS

SR 3.8.6.1

Verifying battery float current while on float charge is used to determine the state of charge of the battery. Float charge is the condition in which the charger is supplying the continuous charge required to overcome the internal losses of a battery and maintain the battery in a charged state. The float current requirements are based on the float current indicative of

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3 **INSERT 3A**

or failure of the battery performance discharge test (SR 3.8.6.6),

BASES

SURVEILLANCE REQUIREMENTS (continued) more conservative than the recommendations of (2)

a charged battery. Use of float current to determine the state of charge of the battery is consistent with IEEE-450 (Ref. 1). The 7 day Frequency is consistent with IEEE-450 (Ref. 1).

This SR is modified by a Note that states the float current requirement is not required to be met when battery terminal voltage is less than the minimum established float voltage of SR 3.8.4.1. When this float voltage is not maintained the Required Actions of LCO 3.8.4 ACTION A are being taken, which provide the necessary and appropriate verifications of the battery condition. Furthermore, the float current limit of 2 amps is established based on the nominal float voltage value and is not directly applicable when this voltage is not maintained. (1)

INSERT 4 (1)

SR 3.8.6.2 and SR 3.8.6.5

Optimal long term battery performance is obtained by maintaining a float voltage greater than or equal to the minimum established design limits provided by the battery manufacturer, which corresponds to 130.5 V at the battery terminals, or 2.20 Vpc. This provides adequate over-potential, which limits the formation of lead sulfate and self discharge, which could eventually render the battery inoperable. Float voltages in this range or less, but greater than 2.07 Vpc, are addressed in Specification 5.5.17. SRs 3.8.6.2 and 3.8.6.5 require verification that the cell float voltages are equal to or greater than the short term absolute minimum voltage of 2.07 V. The Frequency for cell voltage verification every 31 days for pilot cell and 92 days for each connected cell is consistent with IEEE-450 (Ref. 1). (2) (3) (15) (1) (1) (1)

SR 3.8.6.3

INSERT 4A (2)

The limit specified for electrolyte level ensures that the plates suffer no physical damage and maintains adequate electron transfer capability. The Frequency is consistent with IEEE-450 (Ref. 1).

INSERT 5 (1)

SR 3.8.6.4

This Surveillance verifies that the pilot cell temperature is greater than or equal to the minimum established design limit (i.e., 40°F). Pilot cell electrolyte temperature is maintained above this temperature to assure the battery can provided the required current and voltage to meet the design requirements. Temperatures lower than assumed in battery sizing calculations act to inhibit or reduce battery capacity. The Frequency is consistent with IEEE-450 (Ref. 1). (1)

1 **INSERT 4**

257.5 VDC for a 116 cell battery and 259.7 VDC for a 117 cell battery

2 **INSERT 4A**

(i.e., greater than or equal to the low level mark)

1 **INSERT 5**

60°F for the Train A and Train B 250 VDC batteries and 45°F for the Train N 250 VDC battery

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.6.6

A battery performance discharge test is a test of constant current capacity of a battery, normally done in the as found condition, after having been in service, to detect any change in the capacity determined by the acceptance test. The test is intended to determine overall battery degradation due to age and usage.

Either the battery performance discharge test or the modified performance discharge test is acceptable for satisfying SR 3.8.6.6; however, only the modified performance discharge test may be used to satisfy the battery service test requirements of SR 3.8.4.3.

A modified discharge test is a test of the battery capacity and its ability to provide a high rate, short duration load (usually the highest rate of the duty cycle). This will often confirm the battery's ability to meet the critical period of the load duty cycle, in addition to determining its percentage of rated capacity. Initial conditions for the modified performance discharge test should be identical to those specified for a ~~service~~ test. as specified in IEEE-450 (Ref. 1) 2 performance discharge 2

It may consist of just two rates; for instance the one minute rate for the battery or the largest current load of the duty cycle, followed by the test rate employed for the performance test, both of which envelope the duty cycle of the service test. Since the ampere-hours removed by a one minute discharge represents a very small portion of the battery capacity, the test rate can be changed to that for the performance test without compromising the results of the performance discharge test. The battery terminal voltage for the modified performance discharge test must remain above the minimum battery terminal voltage specified in the battery service test for the duration of time equal to that of the service test. discharge 5 modified 2 INSERT 6

The acceptance criteria for this ~~Surveillance~~ 3 are consistent with IEEE-450 (Ref. 1) and IEEE-485 (Ref. 4). These references recommend that the battery be replaced if its capacity is below 80% of the manufacturer's rating. A capacity of 80% shows that the battery rate of deterioration is increasing, even if there is ample capacity to meet the load requirements. Furthermore, the battery is sized to meet the assumed duty cycle loads when the battery design capacity reaches this (80%) limit. 1 1 2 1

The Surveillance Frequency for this test is normally 60 months. If the battery shows degradation, or if the battery has reached 85% of its expected life and capacity is < 100% of the manufacturer's rating, the Surveillance Frequency is reduced to 12 months. However, if the battery

2 **INSERT 6**

Currently, the modified performance discharge test is performed by testing the battery using the service test profile for the first 4 hours followed by the performance discharge test profile for the remainder of the test. This method has been determined by the system engineer and the battery manufacturer to be an acceptable modified performance test procedure, and is consistent with IEEE-450 (Ref. 1).

BASES

SURVEILLANCE REQUIREMENTS (continued)

shows no degradation but has reached 85% of its expected life, the Surveillance Frequency is only reduced to 24 months for batteries that retain capacity ≥ 100% of the manufacturer's ratings. Degradation is indicated, according to IEEE-450 (Ref. 3), when the battery capacity drops by more than 10% relative to its capacity on the previous performance test or when it is ≥ 10% below the manufacturer's rating. These Frequencies are consistent with the recommendations in IEEE-450 (Ref. 3). INSERT 7

90% of

12 month and 60 month

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would perturb the electrical distribution system and challenge safety systems. This restriction from normally performing the Surveillance in MODE 1, or 2 is further amplified to allow portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1 or 2. Risk insights or deterministic methods may be used for the assessment. INSERT 8

, 3, or 4

unit

unit

, 3, or 4

REFERENCES

1. FSAR, Chapter [6].
2. FSAR, Chapter [15]. 14
3. IEEE-450-[1995].
4. IEEE-485-[1983], June 1983. 1997

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1 **INSERT 7**

The 24 month Frequency is derived from the recommendations of IEEE-450 (Ref. 1).

6 **INSERT 8**

Credit may be taken for unplanned events that satisfy this SR.

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JUSTIFICATION FOR DEVIATIONS
ITS 3.8.6 BASES, BATTERY PARAMETERS

1. The brackets have been removed and the proper plant specific information/value has been provided.

2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. Changes are made to reflect those changes made to the Specifications.

4. The "Reviewer's Note" has been deleted since it is not intended to be included in the plant specific ITS submittals.

5. Grammatical/editorial/spelling error corrected.

6. TSTF-283, Rev. 3, was approved by the NRC on April 13, 2000. However, when NUREG-1431, Rev. 2, was issued, this TSTF was not completely included. Therefore, changes approved by TSTF-283, Rev. 3, have been made.

7. Changes are made to reflect the Specification.

8. ISTS 3.8.6 is applicable when associated DC electrical power subsystems are required to be OPERABLE. The DC electrical power subsystems are required to be OPERABLE in MODES 1, 2, 3, and 4 (ISTS 3.8.4) and in MODES 5 and 6 and during movement of irradiated fuel assemblies (ISTS 3.8.5). The Applicable Safety Analyses Bases only discusses accident analyses related to MODES 1, 2, 3, and 4; it does not discuss events in MODES 5 and 6 and during movement of irradiated fuel assemblies. Therefore, for completeness, the Applicable Safety Analyses for MODES 5 and 6 and during movement of irradiated fuel assemblies needs to be discussed. However, in lieu of adding this large description from the ISTS 3.8.5 Bases, the MODES 1, 2, 3, and 4 description has been deleted and in its place a statement has been added referencing the Applicable Safety Analyses Bases for ITS 3.8.4 and ITS 3.8.5. This is consistent with the manner in which similar information in one ISTS Bases is referenced in another ISTS Bases (e.g., the ISTS 3.8.5 Background Bases references ISTS 3.8.4 Background Bases).

9. These battery design values have been deleted because they are more specific than necessary and are not required to provide sufficient background for this Specification.

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.6, BATTERY PARAMETERS

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 7

ITS 3.8.7, Inverters - Operating

Current Technical Specification (CTS) Markup
and Discussion of Changes (DOCs)

ITS 3.8.7

A.1

ITS

ELECTRICAL POWER SYSTEMS

~~3/4.8.2 ONSITE POWER DISTRIBUTION SYSTEMS~~

A.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

3.8.2.1 The following A.C. electrical busses shall be OPERABLE and energized with tie breakers open between redundant busses: See ITS 3.8.9

4160-volt Emergency Bus #T 11A & T 11B

4160-volt Emergency Bus #T 11C & T 11D

600-volt Emergency Bus #11A & 11B

600-volt Emergency Bus #11C & 11D

*120-volt A.C. Vital Bus #Channel I

*120-volt A.C. Vital Bus #Channel II

*120-volt A.C. Vital Bus #Channel III

*120-volt A.C. Vital Bus #Channel IV

See ITS 3.8.9

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

ACTION: One Add proposed Required Action A.1 Note 24 L.1

ACTION A With less than the above complement of A.C. busses OPERABLE, restore the inoperable bus to OPERABLE status within 8 hours ~~or be~~ in at least HOT STANDBY

ACTION C within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Add proposed ACTION B M.1

SURVEILLANCE REQUIREMENTS

SR 3.8.7.1 4.8.2.1 The specified A.C. busses shall be determined OPERABLE and energized from A.C. sources with tie breakers open between redundant busses at least once per 7 days by verifying correct breaker alignment and indicated power availability. M.2

LCO 3.8.7 Train A and B s shall be OPERABLE LA.1

*Energized from its associated inverter connected to a DC bus.

ITS 3.8.7

A.1

ITS

ELECTRICAL POWER SYSTEMS

3/4.8.2 ONSITE POWER DISTRIBUTION

A.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

3.8.2.1 The following A.C. electrical busses shall be OPERABLE and energized with tie breakers open between redundant busses: See ITS 3.8.9

4160-volt Emergency Bus #T 21A & T 21B
4160-volt Emergency Bus #T 21C & T 21D
600-volt Emergency Bus #21A & 21B
600-volt Emergency Bus #21C & 21D
*120-volt A.C. Vital Bus #Channel I
*120-volt A.C. Vital Bus #Channel II
*120-volt A.C. Vital Bus #Channel III
*120-volt A.C. Vital Bus #Channel IV

See ITS 3.8.9

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

ACTION: One Add proposed Required Action A.1 Note 24 L.1

ACTION A - With less than the above complement of A.C. busses OPERABLE, restore the inoperable bus to OPERABLE status within 8 hours or be in at least HOT STANDBY
ACTION C - within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Add proposed ACTION B M.1

SURVEILLANCE REQUIREMENTS

SR 3.8.7.1 4.8.2.1 The specified A.C. busses shall be determined OPERABLE and energized from A.C. sources with tie breakers open between redundant busses at least once per 7 days by verifying correct breaker alignment and indicated power availability. M.2

LCO 3.8.7 Train A and B s shall be OPERABLE LA.1

*Energized from its associated inverter connected to a DC bus.

D. C. COOK - UNIT 2 3/4 8-10 AMENDMENT NO. 112

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DISCUSSION OF CHANGES
ITS 3.8.7, INVERTERS - OPERATING

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

M.1 The CTS 3.8.2.1 Action specifies the compensatory actions for one or more inoperable 120 VAC inverters. The compensatory action is to restore the inoperable inverters to OPERABLE status within 8 hours. ITS 3.8.7 ACTION A covers the condition of one inoperable Train A or Train B inverter. ITS 3.8.7 ACTION A requires the restoration of the inoperable inverter to OPERABLE status within 24 hours. ITS 3.8.7 ACTION B covers the condition of two inverters in one train inoperable, and requires restoration of one inverter to OPERABLE status within 6 hours. This changes the CTS by: a) requiring one inverter to be restored to OPERABLE status within 6 hours instead of 8 hours when two inverters are inoperable in the same train; and b) requiring entry into LCO 3.0.3 with two or more inverters in different trains inoperable. The change covering the extension in time for restoration of one inoperable inverter is discussed in DOC L.1.

The purpose of ITS 3.8.7 ACTIONS A and B is to limit the time the unit may operate with inoperable inverters. With inverters in different trains inoperable, the associated 120 VAC vital buses may be powered by its auxiliary power system source or its associated regulated 600/120 VAC transformer via the inverter. These sources will not provide an uninterrruptible source for the required equipment during a loss of offsite power. In this situation, an immediate shutdown is appropriate. This change is designated as more restrictive because when one or more inverters in different trains are found to be inoperable, LCO 3.0.3 must be entered immediately.

M.2 CTS 4.8.2.1 requires the specified AC buses to be determined OPERABLE every 7 days and energized by verifying correct breaker alignment and indicated power availability. ITS SR 3.8.7.1 requires the verification of correct inverter voltage, frequency, and alignment to the associated 120 VAC vital buses every 7 days. This changes the CTS by requiring the specific verification of the inverter voltage and frequency every 7 days.

The purpose of this change is to ensure the instrumentation channels are provided with proper voltage from the AC vital bus when powered by the associated inverter. This change is acceptable because the Surveillance will continue to verify OPERABILITY of the required inverters. Proper voltage and frequency from the inverters to the vital AC buses ensures proper voltage and frequency is supplied to the instrumentation channels that provide inputs to the

Reactor Trip System and Engineered Safety Features Actuation System. This change is designated as more restrictive because the ITS requires verification of the correct voltage and frequency, where the CTS does not provide explicit requirements for the inverter.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS LCO 3.8.2.1 footnote * states that each 120 VAC vital bus must be energized from its associated inverter connected to a DC bus. ITS LCO 3.8.7 requires the Train A and Train B inverters to be OPERABLE. This changes the CTS by moving the procedural detail that the inverters must be "connected to a DC bus" and that they must be energizing the associated 120 VAC vital buses from the CTS to the ITS Bases.

The removal of these details for meeting Technical Specifications requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement (LCO 3.8.7) that the Train A and Train B inverters shall be OPERABLE and ITS SR 3.8.7.1 requires correct inverter voltage, frequency, and alignment to the associated 120 VAC vital buses. The Bases includes the detail that the inverters must be supplied by the associated Train A or Train B 250 VDC bus and that the 120 VAC vital buses must be energized from the inverters. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L.1 *(Category 4 – Relaxation of Required Action)* The CTS 3.8.2.1 Action specifies the compensatory for one or more inoperable 120 VAC inverters. The compensatory action is to restore the inoperable inverters to OPERABLE status within 8 hours. ITS 3.8.7 ACTION A covers the condition of one Train A or Train B inoperable inverter. ITS 3.8.7 ACTION A requires the restoration of the inoperable inverter within 24 hours. However, the additional 16 hours is only allowed if the associated 120 VAC vital bus remains energized. This changes the CTS by allowing one inverter to be inoperable for 24 hours, provided the associated 120 VAC vital bus remains energized. The change to the number of inverters that can be inoperable is discussed in DOC M.1.

DISCUSSION OF CHANGES
ITS 3.8.7, INVERTERS - OPERATING

The purpose of the CTS 3.8.2.1 Action is to limit the time the 120 VAC inverters can be inoperable. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the repair period. This change extends the time an inverter can be inoperable from 8 hours to 24 hours. Experience has shown that a 24 hour restoration time for an inoperable inverter is appropriate, as long as the associated 120 VAC vital bus can be energized from an auxiliary power system source or the regulated 600/120 VAC transformer via the inverter. This is ensured by the added Note to ACTION A, which requires entry into applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," if the 120 VAC vital bus is de-energized. During this additional 16 hours, the 120 VAC vital bus is energized and can perform its design function during a LOCA event, assuming no loss of offsite power. If the associated 120 VAC vital bus is de-energized, ITS 3.8.9 ACTION B will require it to be re-energized within 8 hours, consistent with the time required in the CTS 3.8.2.1 Action. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

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Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

CTS

3.8 ELECTRICAL POWER SYSTEMS

3.8.7 Inverters - Operating

LCO 3.8.2.1 footnote *

LCO 3.8.7 The ~~required~~ Train A and Train B inverters shall be OPERABLE. ①

- NOTE -

~~[[One/two] inverter[s] may be disconnected from [its/their] associated DC bus for ≤ 24 hours to perform an equalizing charge on [its/their] associated [common] battery, provided:~~

~~a. The associated AC vital bus(es) [is/are] energizedfrom [its/their] [Class 1E constant voltage sourcetransformers] [inverter using internal AC source], and~~

~~b. All other AC vital buses are energized from theirassociated OPERABLE inverters.]~~

②

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
Action A. One ~~required~~ inverter inoperable.	A.1	- NOTE - Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating" with any 120V AC vital bus de-energized. ③ Restore inverter to OPERABLE status.	① 24 hours INSERT 1 ⑥
Action C ~~B~~. Required Action and associated Completion Time not met.	C ~~B~~.1 AND	Be in MODE 3.	6 hours ⑥

6

INSERT 1

DOC M.1	B. Two inverters in one train inoperable.	B.1 Restore one inverter to OPERABLE status.	6 hours

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CTS

ACTIONS (continued)

Action

CONDITION	C REQUIRED ACTION	COMPLETION TIME
	~~B~~.2 Be in MODE 5.	36 hours

6

SURVEILLANCE REQUIREMENTS

4.8.2.1

SURVEILLANCE	FREQUENCY
SR 3.8.7.~~1~~ Verify, for each inverter, ~~correct~~ inverter voltage, ~~[frequency]~~, and alignment to ~~required~~ the associated 120 V AC vital bus~~es~~.	7 days

5 4
5 3

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JUSTIFICATION FOR DEVIATIONS
ITS 3.8.7, INVERTERS - OPERATING

1. The word "required" has been deleted from the LCO and Condition A since all Train A and Train B inverters are required.

2. This allowance of the ISTS LCO 3.8.7 Note has been deleted because CNP does not need to disconnect the 120 VAC vital bus during an equalizing charge.

3. Changes made to be consistent with changes made in another Specification.

4. The brackets are removed and the proper plant specific information/value is provided.

5. The SR has been modified to reflect that each inverter must have proper voltage, frequency, and alignment to its associated 120 VAC vital bus.

6. ITS 3.8.7 Condition B has been added to allow two inverters on the same train to be inoperable for up to 6 hours. The CNP design incorporates two 120 VAC inverters on each train. As written, ISTS 3.8.7 requires entry into LCO 3.0.3 when two inverters in the same train are inoperable since no ACTION exists for when more than one inverter is inoperable. The inoperability of two inverters in the same train does not place the unit outside of its design basis because the other train remains OPERABLE to support safeguards operation. Therefore, entry into LCO 3.0.3 is not necessary in this condition. An allowed outage time of 6 hours has been selected to be consistent with the allowed outage time in ISTS 3.3.1 for a single inoperable Reactor Trip System train. This is also more conservative than the 8 hours allowed in the CTS when two inverters are inoperable. In addition, the subsequent ACTION has been renumbered.

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Improved Standard Technical Specifications (ISTS) Bases Markup and Justification for Deviations (JFDs)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.7 Inverters - Operating

BASES

120 V associated 120 VAC 120 V INSERT 1 each INSERT 2 ①

BACKGROUND

The inverters are the preferred source of power for the AC vital ~~buses~~ because of the stability and reliability they achieve. The function of ~~the~~ inverter is to provide AC electrical power to the vital bus~~es~~. The inverters can be powered from an ~~internal AC source/rectifier or from the station battery~~. The ~~station battery~~ provides an uninterruptible power source for the instrumentation and controls for the Reactor ~~Protective~~ System (R~~P~~S) and the Engineered Safety Feature Actuation System (ESFAS). Specific details on inverters and their operating characteristics are found in the FSAR, Chapter ~~[8]~~ (Ref. 1).

INSERT 3 INSERT 4 inverter T Trip U ① ②

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in ~~the [FSAR, Chapter [6] (Ref. 2) and~~ Chapter ~~[15]~~ (Ref. ~~3~~), assume Engineered Safety Feature systems are OPERABLE. The inverters are designed to provide the required capacity, capability, redundancy, and reliability to ensure the availability of necessary power to the R~~P~~S and ESFAS instrumentation and controls 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.

14 2 UFSAR T ② ① ①

The OPERABILITY of the inverters is consistent with the initial assumptions of the accident analyses and is based on meeting the design basis of the unit. This includes maintaining required AC vital buses OPERABLE during accident conditions in the event of:

120 V ①

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

b. A worst case single failure.

③ electrical power Inverters - Operating ①

Inverters are a part of the distribution system and, as such, satisf~~y~~ies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

The inverters ensure the availability of AC electrical power for the systems instrumentation required to shut down the reactor and maintain it in a safe condition after an anticipated operational ~~occurrence~~ (~~AOO~~) or a postulated DBA.

120 V transient ① ①

1 **INSERT 1**

bus electrical power distribution subsystems

1 **INSERT 2**

There are two inverters per train (i.e., Train A and Train B), for a total of four inverters.

1 **INSERT 3**

Train A or Train B 250 VDC bus or a regulated 600/120 VAC transformer

1 **INSERT 4**

Each inverter is normally supplied from the Train A or Train B 250 VDC bus. If the associated Train A or Train B 250 VDC bus fails or if the DC to AC section of the inverter fails, the AC vital bus is transferred to the regulated 600/120 VAC transformer.

BASES

LCO (continued)

T 1

Maintaining the required inverters OPERABLE ensures that the redundancy incorporated into the design of the RPS and ESFAS instrumentation and controls is maintained. The four inverters (two per train) ensure an uninterruptible supply of AC electrical power to the AC vital buses even if the 4.16 kV ~~safety~~ emergency buses are de-energized. 120 V 1 4 1

INSERT 5

~~Operable~~ Inverters require the associated vital bus to be powered by the inverter with output voltage and frequency within tolerances, and power input to the inverter from a (125) VDC ~~station battery. Alternatively, power supply may be from an internal AC source via rectifier as long as the station battery is available as the uninterruptible power supply.~~ bus 2

~~This LCO is modified by a Note that allows [one/two] inverters to be disconnected from a [common] battery for ≤ 24 hours, if the vital bus(es) is powered from a [Class 1E constant voltage transformer or inverter using internal AC source] during the period and all other inverters are operable. This allows an equalizing charge to be placed on one battery. If the inverters were not disconnected, the resulting voltage condition might damage the inverter[s]. These provisions minimize the loss of equipment that would occur in the event of a loss of offsite power. The 24 hour time period for the allowance minimizes the time during which a loss of offsite power could result in the loss of equipment energized from the affected AC vital bus while taking into consideration the time required to perform an equalizing charge on the battery bank.~~ 4

~~The intent of this Note is to limit the number of inverters that may be disconnected. Only those inverters associated with the single battery undergoing an equalizing charge may be disconnected. All other inverters must be aligned to their associated batteries, regardless of the number of inverters or unit design.~~

APPLICABILITY

The inverters 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 anticipated operational transients or abnormal transients; and 3 1

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

1 **INSERT 5**

Train A or Train B 250

BASES

APPLICABILITY (continued)

INSERT 6 (5)

Inverter requirements for MODES 5 and 6 are covered in the Bases for LCO 3.8.8, "Inverters - Shutdown."

ACTIONS

A.1

Train A or Train B (4)

120V (1)

With a ~~required~~ inverter inoperable, its associated AC vital bus becomes inoperable until it is ~~manually~~ re-energized from its ~~Class 1E constant voltage source transformer or inverter using internal AC source~~. INSERT 7 (2) (6)

INSERT 8

For this reason a Note has been included in Condition A requiring the entry into the Conditions and Required Actions of LCO 3.8.9 ~~, "Distribution Systems - Operating."~~ This ensures that the vital bus is ~~re-energized within 2 hours~~. taken (1)

INSERT 8A

Required Action A.1 allows 24 hours to fix the inoperable inverter and return it to service. The 24 hour limit is based upon engineering judgment, taking into consideration the time required to repair an inverter and the additional risk to which the unit is exposed because of the inverter inoperability. This has to be balanced against the risk of an immediate shutdown, along with the potential challenges to safety systems such a shutdown might entail. When the AC vital bus is powered from its ~~constant voltage source~~, it is relying upon interruptible AC electrical power sources (offsite and onsite). The uninterruptible inverter source to the AC vital buses is the preferred source for powering instrumentation trip setpoint devices.

120V (1)

INSERT 8B (1)

120V (1)

INSERT 9

B.1 and B.2 C

Train A or Train B inverters (4) (4)

If the ~~inoperable devices or components~~ 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~~ unit systems. (1)

SURVEILLANCE REQUIREMENTS

SR 3.8.7.1

the 120 V (1)

This Surveillance verifies that the inverters are functioning properly with all required circuit breakers closed and AC vital buses energized from the associated inverter. The verification of proper voltage and frequency output ensures (1)

INSERT 10 (1)

5

INSERT 6

and other conditions in which the inverters are required

2

INSERT 7

regulated 600/120 VAC transformer via the inverter

1

INSERT 8

LCO 3.8.9, "Distribution Systems - Operating," addresses this action however, pursuant to LCO 3.0.6, this action would not be entered even if the 120 VAC vital bus were de-energized.

1

INSERT 8A

proper action for a de-energized 120 VAC

1

INSERT 8B

regulated 600/120 VAC transformer

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4 **INSERT 9**

B.1

With two inverters in the same train inoperable, the remaining inverters are capable of supporting the minimum safety functions necessary to shut down the reactor and maintain it in a safe condition, assuming no single failure. The overall reliability is reduced, however, because a single failure in one of the two remaining inverters could result in the minimum ESF functions not being supported. Therefore, one of the inverters must be restored to OPERABLE status within 6 hours.

The 6 hour Completion Time is consistent with that allowed for an inoperable RTS train and an inoperable ESFAS train, since the inverters support the 120 VAC vital buses, which in turn support the RTS and ESFAS trains.

1 **INSERT 10**

Each inverter must be connected to its associated 250 VDC bus.

BASES

SURVEILLANCE REQUIREMENTS (continued) 120 V

(T) that the required power is readily available for the instrumentation of the RPS and ESFAS connected to the AC vital buses. The 7 day Frequency takes into account the redundant capability of the inverters and other indications available in the control room that alert the operator to inverter malfunctions. (1)

REFERENCES

1. U FSAR, Chapter [8]. (1) (2)

~~2. FSAR, Chapter [6]~~ (1)

(2) 3. U FSAR, Chapter ~~[15]~~ (14). (1) (2)

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.7 BASES, INVERTERS - OPERATING

1. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.
2. The brackets have been removed and the proper plant specific information/value has been provided.
3. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.
4. Changes are made to reflect those changes made to the ISTS.
5. Changes are made to be consistent with the Specifications.
6. Editorial correction made.

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.7, INVERTERS - OPERATING

There are no specific NSHC discussions for this Specification.

ATTACHMENT 8

ITS 3.8.8, Inverters - Shutdown

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

ITS 3.8.8

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

A.C. DISTRIBUTION SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.2 As a minimum, the following A.C. electrical busses shall be OPERABLE and energized:

1 - 4160-volt Emergency Bus, and

1 - 600-volt Emergency Bus, and

2 - 120 volt A.C. Vital Busses.

See ITS 3.8.10

APPLICABILITY MODES 5 and 6, and during movement of irradiated fuel.

ACTION: Add proposed ACTIONS NOTE

ACTION A With less than the above complement of A.C. busses OPERABLE and energized,

a. Immediately suspend all operations involving CORE ALTERATIONS, movement of irradiated fuel assemblies, and positive reactivity changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2.

additions that could result in loss of required SDM or boron concentration

b. Immediately initiate actions to restore the required A.C. electrical busses to OPERABLE status.

c. Immediately declare associated required residual heat removal loop(s) inoperable.

See ITS 3.8.10

SURVEILLANCE REQUIREMENTS

SR 3.8.8.1 4.8.2.2 The specified A.C. busses shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

Two

s shall be OPERABLE

LCO 3.8.8 Energized from its associated inverter connected to a DC bus.

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ITS 3.8.8

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

A.C. DISTRIBUTION SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.2 As a minimum, the following A.C. electrical busses shall be OPERABLE and energized:

1 - 4160-volt Emergency Bus, and

1 - 600-volt Emergency Bus, and

2 - *120-volt A.C. Vital Busses.

See ITS 3.8.10

A.3

APPLICABILITY: MODES 5 and 6. During movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 1 containment

Add proposed ACTIONS NOTE A.2

ACTION:

ACTION A With less than the above complement of A.C. busses OPERABLE and energized.

a. Immediately suspend all operations involving CORE ALTERATIONS, movement of irradiated fuel assemblies, and positive reactivity ~~changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2~~ additions that could result in loss of required SDM or boron concentration

L.1

b. Immediately initiate actions to restore the required A.C. electrical busses to OPERABLE status.

c. Immediately declare associated required residual heat removal loop(s) inoperable. See ITS 3.8.10

SURVEILLANCE REQUIREMENTS

SR 3.8.8.1 4.8.2.2 The specified A.C. busses shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability. M.1

LA.1

LCO 3.8.8 * Two ~~Energized~~ from its associated inverter s shall be OPERABLE ~~connected~~ to a DC bus.

DISCUSSION OF CHANGES
ITS 3.8.8, INVERTERS - SHUTDOWN

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A.2 Unit 1 CTS 3.8.2.2 is applicable during MODES 5 and 6, and during the movement of irradiated fuel. Unit 2 CTS 3.8.2.2 is applicable during MODES 5 and 6. ITS 3.8.8 is applicable in MODES 5 and 6, and during the movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment. However, a Note has been added to the ACTIONS which states that LCO 3.0.3 is not applicable. This changes the CTS by adding the Note to the ACTIONS stating that LCO 3.0.3 is not applicable. The change in the Applicability is discussed in DOCs A.3 and A.4.

The purpose of CTS 3.8.2.2 is to ensure that at least two inverters are OPERABLE to support equipment required to be OPERABLE. This change adds a clarification Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODES 5 or 6, LCO 3.0.3 is not applicable and would not specify any action. If moving irradiated fuel assemblies while in MODES 1, 2, 3, or 4, the fuel movement is independent of reactor operations and the inability to suspend movement in accordance with the ITS 3.8.8 Required Actions would not be sufficient reason to require a reactor shutdown. This Note has been added for clarification and is necessary since defaulting to LCO 3.0.3 would require the reactor to be shutdown, but would not require suspension of the activities with a potential for releasing radioactive materials. This change is designated as administrative as it is a clarification of the intent of CTS 3.0.3 that does not result in a technical change to the CTS.

A.3 (Unit 2 only) CTS 3.8.2.2 is applicable during MODES 5 and 6. However, CTS 3.8.2.2 Action a requires movement of irradiated fuel assemblies to be suspended if the required inverter(s) are inoperable. ITS 3.8.8 is applicable in MODES 5 and 6, and during the movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 1 containment. This changes the Unit 2 CTS by adding the explicit Applicability of during movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 1 containment.

The purpose of CTS 3.8.2.2 is to ensure that at least two inverters are OPERABLE to support equipment required to be OPERABLE. This change adds the explicit Applicability of during movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 1 containment. This Applicability is consistent with the Applicability of CTS 3.8.2.2 for Unit 1 and consistent with the CTS 3.8.2.2 Actions of Unit 2, which states to suspend movement of irradiated fuel when the required inverters are inoperable. This change is designated as administrative as it is a clarification of the intent of Unit 2 CTS 3.8.2.2 that does not result in a technical change to the Unit 2 CTS.

DISCUSSION OF CHANGES
ITS 3.8.8, INVERTERS - SHUTDOWN

A.4 (Unit 1 only) CTS 3.8.2.2 Applicability includes "during movement of irradiated fuel." ITS 3.8.8 Applicability includes "During movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 2 containment." This changes the Unit 1 CTS by clarifying the locations that fuel movement is taking place.

The purpose of CTS 3.8.2.2, with respect to fuel handling, is to ensure adequate inverters are available to power equipment required to mitigate a fuel handling accident. This protection is required during irradiated fuel movement in three locations: the unit containment, the auxiliary building, and the opposite unit containment. Therefore, for clarity, all three locations are specified in the ITS Applicability, instead of the current wording which just specifies irradiated fuel movement. This change is designated as administrative because it does not result in any technical changes to the Unit 1 CTS.

MORE RESTRICTIVE CHANGES

M.1 CTS 4.8.2.2 requires the specified 120 VAC vital buses to be determined OPERABLE every 7 days and energized by verifying correct breaker alignment and indicated power availability. ITS SR 3.8.8.1 requires the verification of correct required voltage, frequency, and alignment to the associated 120 VAC vital bus every 7 days. This changes the CTS by requiring the specific verification of the inverter voltage and frequency every 7 days.

The purpose of this change is to ensure the instrumentation channels are provided with proper voltage and frequency from the AC vital bus when powered by the associated inverter. This change is acceptable because the Surveillance will continue to verify OPERABILITY of the required inverters. Proper voltage from the inverters to the vital AC buses ensures proper voltage is supplied to the instrumentation channels. This change is designated as more restrictive because the ITS requires verification of the correct voltage and frequency, where the CTS does not specify these requirements for the inverters.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS LCO 3.8.2.2 footnote * states that each required 120 VAC vital bus must be energized from its associated inverter connected to a DC bus. ITS LCO 3.8.8 requires two inverters to be OPERABLE to support one train of the 120 VAC vital electrical distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems - Shutdown." This changes the CTS by moving the procedural detail that the inverters must be "connected to a DC bus" and that they must be energizing the associated 120 VAC vital buses from the CTS to the ITS Bases.

DISCUSSION OF CHANGES
ITS 3.8.8, INVERTERS - SHUTDOWN

The removal of these details for meeting Technical Specification requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. ITS LCO 3.8.8 still retains the requirement that two inverters must be OPERABLE to support one train of the 120 VAC vital electrical distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems - Shutdown," and ITS SR 3.8.8.1 requires correct inverter voltage, frequency, and alignment to the associated 120 VAC vital bus. The Bases include the detail that the inverters must be supplied by the associated Train A or Train B 250 VDC bus and that the 120 VAC vital buses must be energized from the inverters. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L.1 *(Category 4 – Relaxation of Required Action)* CTS 3.8.2.2 Action a specifies the compensatory actions for a required inoperable AC electrical distribution subsystem. These actions apply to one or more required inoperable inverters. One of the compensatory actions is the suspension of positive reactivity "changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2." ITS 3.8.8 Required Action A.3 requires the immediate suspension of operations involving positive reactivity "additions that could result in loss of required SDM or boron concentration." This changes the CTS compensatory actions by deleting the limitation on the heatup and cooldown rates of 50°F or less in any one hour period in MODE 5 and allows the addition of water from any source including the RWST as long as SDM and boron concentration limitations are met.

The purpose of the CTS 3.8.2.2 Action a is to suspend any positive reactivity additions that could affect the SDM of the reactor core. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the repair period. The CTS allows two types of positive reactivity changes (heatup/cooldown and addition of water).

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DISCUSSION OF CHANGES
ITS 3.8.8, INVERTERS - SHUTDOWN

Heatup and cooldown of the reactor coolant volume are allowed provided SDM is sufficient to accommodate the change in temperature in accordance with CTS 3.1.1.2 in MODE 5 or CTS 3.9.1 in MODE 6. The requirements of these Specifications are included in ITS LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," and ITS LCO 3.9.1, "Boron Concentration," respectively. Therefore, there is no technical change in this portion of the change. The Bases provides the appropriate cross-reference to the appropriate LCOs. The CTS also allows positive reactivity changes by the addition of water from the RWST provided the boron concentration in the RWST is greater than or equal to the minimum required by CTS 3.1.2.7.b.2. CTS 3.1.2.7.b.2 has been relocated to the TRM as indicated in the Discussion of Changes for CTS 3/4.1.2.7. CTS 3/4.1.2.7 is applicable during MODE 5 and 6 operations. The proposed Required Actions require the suspension of operations involving positive reactivity additions that could result in loss of required SDM or boron concentration. The requirements for SDM are specified in ITS LCO 3.1.1 while the requirements for boron concentration are specified in ITS LCO 3.9.1. The current and proposed actions may result in an overall reduction in SDM or RCS boron concentration, but provide acceptable margin to maintaining subcritical operation. The CTS compensatory action restricted the heatup and cooldown rates of the RCS to 50°F or less in any one-hour period in MODE 5. This limitation has been deleted. The proposed Required Action is to suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration. These limitations are considered acceptable. The Bases also indicate that introduction of temperature changes including temperature increases when operating with a positive moderator temperature coefficient must be evaluated to ensure they do not result in a loss of required SDM. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

CTS

3.8 ELECTRICAL POWER SYSTEMS

3.8.8 Inverters - Shutdown

LCO 3.8.8 ~~[Inverters shall be OPERABLE to support the onsite Class 1E AC vital bus electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems - Shutdown."]~~ (1)

LCO 3.8.2.2 Footnote * Two [One] inverter[s] shall be OPERABLE.] INSERT 1 (2)

~~REVIEWER'S NOTE - This second option above applies for plants having a pre-ITS licensing basis (CTS) for electrical power requirements during shutdown conditions that required only [one] inverter to be OPERABLE. The "[or more]" optional wording in Condition A is also eliminated for this case. The first option above is adopted for plants that have a licensing basis (CTS) requiring the same level of DC electrical power subsystem/inverter support as is required for power operating conditions.~~ (1)

INSERT 2 (4)

APPLICABILITY: MODES 5 and 6,
During movement of [recently] irradiated fuel assemblies. (3)

ACTIONS

DOC A.2

- NOTE -
LCO 3.0.3 is not applicable.

Action

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One [or more] [required] inverter[s] inoperable.	~~A.1 Declare affected required feature(s) inoperable.~~ ~~OR~~	~~Immediately~~ (1)
	A.~~2~~1 Suspend CORE ALTERATIONS.	Immediately (1)
	AND	(1)

2 **INSERT 1**

to support one train of the 120 VAC vital electrical distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems - Shutdown"

4 **INSERT 2**

in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

CTS

ACTIONS *(continued)*

CONDITION	REQUIRED ACTION	COMPLETION TIME
Action	A.2.2 Suspend movement of [recently] irradiated fuel assemblies.	Immediately ③ ①
	AND	①
	A.2.3 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately ①
	AND	①
	A.2.4 Initiate action to restore required inverters to OPERABLE status.	Immediately ①

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
4.8.2.2 Footnote ** SR 3.8.8.1	Verify correct inverter voltage, ~~[frequency,]~~ and alignments to ~~required~~ AC vital buses. 120 V , for each required inverter, the associated	7 days ② ③

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.8, INVERTERS - SHUTDOWN

1. The bracketed optional ISTS LCO 3.8.8 and "Reviewer's Note" have been deleted because the current licensing basis only requires two inverters to be OPERABLE. ISTS 3.8.8 Required Action A.1 provides an option to declare affected required feature(s) inoperable with one or more required inverters inoperable. The ISTS Bases states that this is acceptable since the remaining inverters may be capable of supporting sufficient features to allow continuation of CORE ALTERATIONS and fuel movement. Therefore, this Required Action assumes all four inverters are required by the LCO. This option has been deleted since only two Train A or two Train B inverters are required to be OPERABLE by the LCO. The subsequent Required Actions have been renumbered and modified, as applicable.

2. The second option of ISTS LCO 3.8.8 is not specific as to what the 120 VAC inverters must be powering. The LCO has been modified to require two inverters to be powering one train of the 120 VAC vital bus(es) required by LCO 3.8.10. In addition, SR 3.8.8.1 has been modified to reflect that all inverters at the unit are not required to be OPERABLE and that each required inverter must be aligned to the associated 120 VAC vital bus.

3. The brackets are removed and the proper plant specific information/value is provided.

4. The Applicability has been clarified, since CNP has two units and irradiated fuel movement can occur in three different locations.

Improved Standard Technical Specifications (ISTS) Bases Markup and Justification for Deviations (JFDs)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.8 Inverters - Shutdown

BASES

BACKGROUND

A description of the inverters is provided in the Bases for LCO 3.8.7, "Inverters - Operating."

APPLICABLE SAFETY ANALYSES

(14) 1 (1) (2)

The initial conditions of Design Basis Accident (DBA) and transient analyses in ~~the FSAR, Chapter [6] (Ref. 1) and~~ Chapter (15) (Ref. 2), UFSAR assume Engineered Safety Feature systems are OPERABLE. The DC to AC inverters are designed to provide the required capacity, capability, redundancy, and reliability to ensure the availability of necessary power to the Reactor ~~Protective~~ Trip System and Engineered Safety Features Actuation System instrumentation and controls so that the fuel, Reactor Coolant System (RCS), and containment design limits are not exceeded. (1) (3)

The OPERABILITY of the inverters is consistent with the initial assumptions of the accident analyses and the requirements for the supported systems' OPERABILITY. (7)

The OPERABILITY of ~~the minimum~~ two inverters to ~~each~~ the required 120V AC vital bus during MODES 5 and 6 INSERT 1 ensures that: (4)

a. The unit can be maintained in the shutdown or refueling condition for extended periods, (5) (5)

b. Sufficient instrumentation and control capability is available for monitoring and maintaining the unit status, and (5) (5)

c. Adequate power is available to mitigate events postulated during shutdown, such as a fuel handling accident ~~involving handling recently irradiated fuel. Due to radioactive decay, the AC and DC inverters are only required to mitigate fuel handling accidents involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [ ] days).~~ (2)

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~~]~~ because the energy contained (3) (2) (4) (6)

4 **INSERT 1**

and during the movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

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BASES

APPLICABLE SAFETY ANALYSES (continued)

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.

The shutdown Technical Specification requirements are designed to ensure that the unit has the capability to mitigate the consequences of certain postulated accidents. Worst case ~~Design Basis Accidents~~ DBAs which are analyzed for operating MODES are generally viewed not to be a significant concern during shutdown MODES due to the lower energies involved. The Technical Specifications therefore require a lesser complement of electrical equipment to be available during shutdown than is required during operating MODES. More recent work completed on the potential risks associated with shutdown, however, have found significant risk associated with certain shutdown evolutions. As a result, in addition to the requirements established in the Technical Specifications, the industry has adopted NUMARC 91-06, "Guidelines for Industry Actions to Assess Shutdown Management," as an industry initiative to manage shutdown tasks and associated electrical support to maintain risk at an acceptable low level. This may require the availability of additional equipment beyond that required by the shutdown Technical Specifications. 3 6

The inverters were previously identified as part of the electrical power distribution system and, as such, Inverters - Shutdown satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii). 1

LCO 2

The inverter~~s~~ ensures the availability of electrical power for the instrumentation for systems required to shut down the reactor and maintain it in a safe condition after an anticipated operational ~~occurrence~~ transient or a postulated DBA. The battery powered inverter~~s~~ provides ~~an~~ emergency uninterruptible supply of AC electrical power to the 120 V AC vital bus~~es~~ even if the 4.16 kV ~~safety~~ buses are de-energized. OPERABILITY of the inverter~~s~~ requires that the 120 V AC vital bus be powered by the inverter. This ensures the availability of sufficient inverter power sources to operate the unit in a safe manner and to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents ~~involving handling recently irradiated fuel~~). 1 2 2 1 1 2 1 2

BASES

APPLICABILITY

INSERT 1A (7)

The inverters are required to be OPERABLE in MODES 5 and 6 and during movement of [recently] irradiated fuel assemblies provide assurance that: (2)

a. Systems to provide adequate coolant inventory makeup are available for the irradiated fuel in the core; (3)

b. Systems needed to mitigate a fuel handling accident [involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [ ] days)] are available; (2) (3)

c. Systems necessary to mitigate the effects of events that can lead to core damage during shutdown are available; and (3)

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

Inverter requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.7.

ACTIONS

LCO 3.0.3 is not applicable while in MODE 5 or 6. However, since irradiated fuel assembly movement can occur in MODE 1, 2, 3, or 4, the ACTIONS have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 5 or 6, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, 3, or 4, the fuel movement is independent of reactor operations. Entering LCO 3.0.3, while in MODE 1, 2, 3, or 4 would require the unit to be shutdown unnecessarily. (7)

A.1, A.2, A.3, and A.4

~~A.1, A.2.1, A.2.2, A.2.3, and A.2.4~~

~~[If two trains are required by LCO 3.8.10, "Distribution Systems - Shutdown," the remaining OPERABLE Inverters may be capable of supporting sufficient required features to allow continuation of CORE ALTERATIONS, [recently] irradiated fuel movement, and operations with a potential for positive reactivity additions.] By the allowance of the option to declare required features inoperable with the associated inverter(s) inoperable, appropriate restrictions will be implemented in accordance with the affected required features LCOs' Required Actions. In many instances, this option may involve undesired administrative efforts. Therefore, the allowance for sufficiently conservative actions is made (i.e., to suspend~~ CORE ALTERATIONS, movement of [recently] irradiated fuel assemblies, and operations involving positive reactivity additions) that could result in loss of required (2) (7)

INSERT 2 (7)

7 **INSERT 1A**

in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

7 **INSERT 2**

With one or more required inverters inoperable, the minimum required inverters is not available. Therefore, suspension of

BASES

INSERT 3 (4)

ACTIONS (continued)

INSERT 4 (6)

SDM (Mode 5) or boron concentration (Mode 6). ~~Suspending positive reactivity additions that could result in failure to meet the minimum SDM or boron concentration limit~~ is required to assure continued safe operation. Introduction of coolant inventory must be from sources that have a boron concentration greater than that what would be required in the RCS for minimum SDM or refueling boron concentration. This may result in an overall reduction in RCS boron concentration, but provides acceptable margin to maintaining subcritical operation. Introduction of temperature changes including temperature increases when operating with a positive MTC must also be evaluated to ensure they do not result in a loss of required SDM. (3)

Moderator Temperature Coefficient

Suspension of these activities shall not preclude completion of actions to establish a safe conservative condition. These actions minimize the probability of the occurrence of postulated events. It is further required to immediately initiate action to restore the required inverter~~s~~ and to continue this action until restoration is accomplished in order to provide the necessary inverter power to the unit safety systems. (2)

The Completion Time of immediately is consistent with the required times for actions requiring prompt attention. The restoration of the required inverters should be completed as quickly as possible in order to minimize the time the unit safety systems may be without power or powered from ~~a constant voltage source transformer~~. (1)

INSERT 5

SURVEILLANCE REQUIREMENTS

SR 3.8.8.1

This Surveillance verifies that the required inverters are functioning properly with all required circuit breakers closed and AC vital buses energized from the inverter. The verification of proper voltage and frequency output ensures that the required power is readily available for the instrumentation connected to the AC vital buses. The 7 day Frequency takes into account the redundant capability of the inverters and other indications available in the control room that alert the operator to inverter malfunctions. (7)

REFERENCES

~~1. FSAR, Chapter [6].~~

(1) ~~2.~~ 1. FSAR, Chapter ~~[15]~~ 14. (1) (2)

4 **INSERT 3**

specified in LCO 3.1.1, "SHUTDOWN MARGIN (SDM),"

4 **INSERT 4**

specified in LCO 3.9.1, "Boron Concentration,"

1 **INSERT 5**

the regulated 600/120 VAC transformer via the inverter

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.8 BASES, INVERTERS - SHUTDOWN

1. Changes are made (additions, deletions, and/or changes) to the ISTS Bases, which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. The brackets have been removed and the proper plant specific information/value has been provided.

3. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 3.2.2.

4. Changes are made to be consistent with other places in the Bases.

5. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

6. Grammatical/spelling error corrected.

7. Changes are made to reflect changes made to the Specification.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.8, INVERTERS - SHUTDOWN

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 9

ITS 3.8.9, Distribution Systems - Operating

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

ITS 3.8.9

A.1

ITS

ELECTRICAL POWER SYSTEMS

~~3/4.8.2 ONSITE POWER DISTRIBUTION SYSTEMS~~

A.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

power distribution subsystem — LA.2

LCO 3.8.9 — 3.8.2.1 The following A.C. electrical busses shall be OPERABLE ~~and energized with tie breakers open between redundant busses~~: — LA.1

LCO 3.8.9.a

~~4160-volt Emergency Bus #T 11A & T 11B~~

~~4160-volt Emergency Bus #T 11C & T 11D~~

~~600-volt Emergency Bus #11A & 11B~~

~~600-volt Emergency Bus #11C & 11D~~

Train A and Train B AC distribution subsystems — LA.2

L.1

LCO 3.8.9.b

~~*120-volt A.C. Vital Bus #Channel I~~

~~*120-volt A.C. Vital Bus #Channel II~~

~~*120-volt A.C. Vital Bus #Channel III~~

~~*120-volt A.C. Vital Bus #Channel IV~~

Train A and Train B 120 VAC vital distribution — LA.2

Add proposed LCO 3.8.9.e — A.2

APPLICABILITY: MODES 1, 2, 3 and 4.

A.3

ACTION:

Add proposed ACTION A Note

Add proposed Required Actions A.1 and B.1 second Completion Time — M.1

ACTIONS A and B — With less than the above complement of A.C. busses OPERABLE, restore the inoperable bus to OPERABLE status within 8 hours ~~or be in at least HOT STANDBY~~

ACTION E — ~~within the next 6 hours and in COLD SHUTDOWN~~ within the following 30 hours.

Add proposed ACTION F — A.2

Add proposed ACTION G — M.2

SURVEILLANCE REQUIREMENTS

SR 3.8.9.1 — 4.8.2.1 The specified A.C. busses shall be determined OPERABLE ~~and energized from A.C. sources with tie breakers open between redundant busses~~ at least once per 7 days by verifying correct breaker alignment and ~~indicated power availability~~. — LA.1

voltage — M.3

Add SR 3.8.9.1 for Unit 2 electrical power distribution subsystems — M.4

*Energized from its associated inverter connected to a DC bus. — See ITS 3.8.7

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ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

Train A and Train B 250 VDC distribution subsystems — LA.2 — LA.1

LCO 3.8.9 — 3.8.2.3 The following ~~D.C. bus trains~~ shall be ~~energized and~~ OPERABLE ~~with tie breakers between bus trains open:~~ — LA.2

LCO 3.8.9.c — TRAIN ~~AB~~ B ~~consisting of~~ 250-volt D.C. ~~bus AB, 250-volt D.C. battery bank No. 1AB, and a full capacity charger,~~ and — See ITS 3.8.4 — LA.2

TRAIN ~~CD~~ A ~~consisting of~~ 250-volt D.C. ~~bus CD, 250-volt D.C. battery bank No. 1CD, and a full capacity charger.~~ — See ITS 3.8.4

APPLICABILITY: MODES 1, 2, 3 and 4. — Add proposed LCO 3.8.9.e — A.2

ACTION

Add proposed Required Action C.1 second Completion Time — M.1

ACTION C — a. With one 250-volt D.C. bus inoperable, restore the inoperable bus to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD

ACTION E — SHUTDOWN within the following 30 hours. — Add proposed ACTION F — A.2 — Add proposed ACTION G — M.2

b. With one 250-volt D.C. battery and/or its charger inoperable, restore the inoperable battery and/or charger to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. — See ITS 3.8.4

SURVEILLANCE REQUIREMENTS

LA.1

SR 3.8.9.1 — 4.8.2.3.1 Each D.C. bus train shall be determined OPERABLE ~~and energized with tie breakers open~~ at least once per 7 days by verifying correct breaker alignment and ~~indicated power availability.~~ — voltage — M.3

Add SR 3.8.9.1 for Unit 2 electrical power distribution subsystems — M.4

4.8.2.3.2 Each 250-volt battery bank and charger shall be demonstrated OPERABLE:

a. At least once per 7 days by verifying that: — See ITS 3.8.4 and 3.8.6

1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,

2. The pilot cell specific gravity, corrected to 77°F, and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200, — See ITS 3.8.6

3. The pilot cell voltage is greater than or equal to 2.13 volts, and

4. The overall battery voltage is greater than or equal to 250 volts. — See ITS 3.8.4

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

LA.2

D.C. DISTRIBUTION - OPERATING - TRAIN N BATTERY SYSTEM

LA.1

LIMITING CONDITION FOR OPERATION

electrical power distribution subsystem

LA.2

LCO 3.8.9 3.8.2.5 The following D.C. bus ~~train~~ shall be ~~energized and~~ OPERABLE:

LCO 3.8.9.d TRAIN N consisting of 250-volt D.C. ~~bus N~~, ~~250-volt D.C. battery bank N, and a full capacity charger~~ — See ITS 3.8.4

APPLICABILITY: MODES 1, 2 and 3.

ACTION

ACTION E With the Train N battery system inoperable, declare the turbine driven Auxiliary Feedwater Pump inoperable ~~and follow the ACTION statement of Specification 3.7.1.2.~~ — A.4

Add proposed ACTION G — M.2

SURVEILLANCE REQUIREMENTS

SR 3.8.9.1 4.8.2.5.1 The D.C. bus train N shall be determined OPERABLE ~~and energized~~ at least once per 7 days by verifying correct breaker alignment and ~~indicated power availability.~~ voltage — LA.1, M.3

4.8.2.5.2 The 250-volt battery bank and charger shall be demonstrated OPERABLE: — See ITS 3.8.4 and 3.8.6

a. At least once per 7 days by verifying that:

1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,

2. The pilot cell specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200,

3. The pilot cell voltage is greater than or equal to 2.13 volts, and

See ITS 3.8.6

4. The overall battery voltage is greater than or equal to 250 volts. — See ITS 3.8.4

b. At least once per 92 days by verifying that:

1. The voltage of each connected cell is greater than or equal to 2.13 volts under float charge.

2. The specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test, and

3. The electrolyte level of each connected cell is between the top of the minimum level indication mark and the bottom of the maximum level indication mark.

See ITS 3.8.6

ITS 3.8.9

ITS

A.1

ELECTRICAL POWER SYSTEMS

3/4.8.2 ONSITE POWER DISTRIBUTION SYSTEMS

A.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

power distribution subsystem — LA.2

LCO 3.8.9 3.8.2.1 The following A.C. electrical ~~busses~~ shall be OPERABLE ~~and energized with tie breakers open between redundant busses~~: — LA.1

LCO 3.8.9.a

~~4160-volt Emergency Bus #T 21A & T 21B~~

~~4160-volt Emergency Bus #T 21C & T 21D~~

~~600-volt Emergency Bus #21A & 21B~~

~~600-volt Emergency Bus #21C & 21D~~

Train A and Train B AC distribution subsystems — LA.2

L.1

LCO 3.8.9.b

~~*120-volt A.C. Vital Bus #Channel I~~

~~*120-volt A.C. Vital Bus #Channel II~~

~~*120-volt A.C. Vital Bus #Channel III~~

~~*120-volt A.C. Vital Bus #Channel IV~~

Train A and Train B 120 VAC vital distribution — LA.2

Add proposed LCO 3.8.9.e — A.2

APPLICABILITY: MODES 1, 2, 3 and 4.

A.3

ACTION:

Add proposed ACTION A Note

Add proposed Required Actions A.1 and B.1 second Completion Time — M.1

ACTIONS A and B — With less than the above complement of A.C. ~~busses~~ OPERABLE, restore the inoperable bus to OPERABLE status within 8 hours or be in at least HOT STANDBY

ACTION E — within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Add proposed ACTION F — A.2

Add proposed ACTION G — M.2

SURVEILLANCE REQUIREMENTS

SR 3.8.9.1 4.8.2.1 The specified A.C. busses shall be determined OPERABLE ~~and energized from A.C. sources with tie breakers open between redundant busses~~ at least once per 7 days by verifying correct breaker alignment and ~~indicated power availability~~. — LA.1

voltage — M.3

Add SR 3.8.9.1 for Unit 2 electrical power distribution subsystems — M.4

~~*Energized from its associated inverter connected to a DC bus.~~ — See ITS 3.8.7

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ITS 3.8.9

A.1

ITS

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

Train A and Train B 250 VDC distribution subsystems — LA.2 — LA.1

LCO 3.8.9 3.8.2.3 The following ~~D.C. bus trains~~ shall be ~~energized and~~ OPERABLE ~~with tie breakers between bus trains open~~: LA.2

LCO 3.8.9.c — TRAIN ~~AB~~ B ~~consisting of~~ 250-volt D.C. ~~bus AB~~, ~~250-volt D.C. battery bank No. 2AB, and a full capacity charger~~, and — See ITS 3.8.4

TRAIN ~~CD~~ A ~~consisting of~~ 250-volt D.C. ~~bus CD~~, ~~250-volt D.C. battery bank No. 2CD, and a full capacity charger~~ — LA.2 — See ITS 3.8.4

Add proposed LCO 3.8.9.e — A.2

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION

Add proposed Required Action C.1 second Completion Time — M.1

ACTION C — a. With one 250-volt D.C. bus inoperable, restore the inoperable bus to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD

ACTION E — SHUTDOWN within the following 30 hours. Add proposed ACTION F. Add proposed ACTION G — A.2 — M.2

~~b. With one 250-volt D.C. battery and/or its charger inoperable, restore the inoperable battery and/or charger to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.~~ — See ITS 3.8.4

SURVEILLANCE REQUIREMENTS

SR 3.8.9.1 4.8.2.3.1 Each D.C. bus train shall be determined OPERABLE ~~and energized with tie breakers open~~ at least once per 7 days by verifying correct breaker alignment and ~~indicated power availability~~ voltage — LA.1 — M.3

Add SR 3.8.9.1 for Unit 2 electrical power distribution subsystems

4.8.2.3.2 Each 250-volt battery bank and charger shall be demonstrated OPERABLE: — M.4

a. At least once per 7 days by verifying that: — See ITS 3.8.4 and 3.8.6

1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,

2. The pilot cell specific gravity, corrected to 77°F, and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200, — See ITS 3.8.6

3. The pilot cell voltage is greater than or equal to 2.13 volts, and

4. The overall battery voltage is greater than or equal to 250 volts. — See ITS 3.8.4

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING - TRAIN N BATTERY SYSTEM

LIMITING CONDITION FOR OPERATION

electrical power distribution subsystem — LA.2

LCO 3.8.9 — 3.8.2.5 The following D.C. bus ~~train~~ shall be ~~energized and~~ OPERABLE: — LA.1

LCO 3.8.9.d — TRAIN N consisting of 250-volt D.C. ~~bus N~~, ~~250-volt D.C. battery bank N, and a full capacity charger~~ — LA.2 — See ITS 3.8.4

APPLICABILITY: MODES 1, 2 and 3.

ACTION

ACTION E — With the Train N battery system inoperable, declare the turbine driven Auxiliary Feedwater Pump inoperable ~~and follow the ACTION statement of Specification 3.7.1.2.~~ — A.4

Add proposed ACTION G — M.2

SURVEILLANCE REQUIREMENTS

SR 3.8.9.1 — 4.8.2.5.1 The D.C. bus train N shall be determined OPERABLE ~~and energized~~ at least once per 7 days by verifying correct breaker alignment and ~~indicated power availability~~ voltage. — LA.1 — M.3

4.8.2.5.2 The 250-volt battery bank and charger shall be demonstrated OPERABLE: — See ITS 3.8.4 and 3.8.6

a. At least once per 7 days by verifying that:

1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,

2. The pilot cell specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), is greater than or equal to 1.200, — See ITS 3.8.6

3. The pilot cell voltage is greater than or equal to 2.13 volts, and

4. The overall battery voltage is greater than or equal to 250 volts. — See ITS 3.8.4

b. At least once per 92 days by verifying that:

1. The voltage of each connected cell is greater than or equal to 2.13 volts under float charge.

2. The specific gravity, corrected to 77°F and full electrolyte level (fluid at the bottom of the maximum level indication mark), of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.03 from the value observed during the previous test, and — See ITS 3.8.6

3. The electrolyte level of each connected cell is between the top of the minimum level indication mark and the bottom of the maximum level indication mark.

DISCUSSION OF CHANGES
ITS 3.8.9, DISTRIBUTION SYSTEMS - OPERATING

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A.2 CTS 3.8.2.1 only provides the requirements for the unit AC electrical power distribution subsystems. CTS 3.8.2.3 only provides the requirements for the unit DC electrical power distribution subsystems. Neither of these Specifications provide any requirements for the opposite unit electrical power distribution subsystems. CTS LCO 3.7.4.1 requires two independent essential service water loops to be OPERABLE. The CTS 3/4.7.4 Bases states that the LCO also ensures that an inoperable opposite unit ESW pump does not result in flow being diverted from an OPERABLE unit ESW pump sharing the same header. Therefore, if the header between the two units is not isolated, both ESW pumps on the same header support both units. The CTS definition of OPERABLE-OPERABILITY requires all attendant equipment to be capable of performing its required function which includes necessary electrical power distribution requirements. Thus, the opposite unit electrical power distribution subsystems may be required to be OPERABLE. In addition, this would require declaring the affected ESW train inoperable when a required opposite unit bus is inoperable. ITS LCO 3.8.9.e requires the Unit 2 (Unit 1) and Unit 1 (Unit 2) Train A and Train B AC electrical power distribution subsystem(s) and the Train A and Train B 250 VDC electrical power distribution subsystem(s) required to support the equipment required to be OPERABLE by LCO 3.7.8, "Essential Service Water (ESW) System," to be OPERABLE. ITS 3.8.9 ACTION F has been added to cover the situation when LCO 3.8.9.e is not met. ITS 3.8.9 ACTION F requires the immediate declaration that the associated ESW train(s) are inoperable. This changes the CTS by providing an explicit LCO and ACTION for the opposite unit electrical power distribution subsystems.

The opposite unit electrical power distribution subsystems are needed to support the opposite unit ESW trains when the Essential Service Water (ESW) System headers between the units are not isolated. This change is acceptable because safety related equipment is shared between both units when an ESW header between the two units is opened. The added LCO requirement is consistent with the CTS because the definition of OPERABLE - OPERABILTY requires all attendant equipment to be capable of performing its required function, and the added ACTION is also consistent with the CTS. This change is designated as administrative because the CTS requirements are unchanged.

A.3 CTS 3.8.2.1 Action states that with less than the above complement of AC buses OPERABLE, to restore the inoperable bus to OPERABLE status within 8 hours. ITS 3.8.9 Required Action A.1 allows 8 hours to restore the Train A and Train B AC electrical power distribution subsystem(s) to OPERABLE status. In addition, a Note has been added (ITS 3.8.9, Note to ACTION A) that requires entry into applicable Conditions and Required Action of LCO 3.8.4, "DC Sources – Operating," for DC Sources made inoperable by inoperable power distribution subsystems. This changes the CTS by requiring the compensatory actions for DC Sources to be taken if a DC Source is made inoperable by inoperable power distribution subsystems.

This change is acceptable because no changes are made to CTS requirements. The change in format from the CTS to the ITS maintains all technical requirements. The addition of the Note only acts as a reminder to enter the appropriate actions if the emergency bus which supplies the Train A or Train B 250 VDC battery charger becomes de-energized. In the event an emergency bus is inoperable such that a Train A or Train B 250 VDC battery charger were inoperable, ITS LCO 3.0.6 would allow taking only the Distribution System - Operating ACTIONS; taking exception to complying with the DC Sources - Operating ACTIONS. Since the Distribution System - Operating ACTIONS may not be sufficiently conservative in this event (i.e., a battery charger may be without power), specific direction to take appropriate ACTIONS for the DC Sources - Operating is added (ITS 3.8.9, Note to ACTION A) when there is no power to support the associated required 250 VDC battery charger. This format and construction implements the existing treatment of this condition within the framework of the CNP Units 1 and 2 Improved Technical Specification methods. This change is designated as administrative because it does not result in a technical change to the CTS.

A.4 The CTS 3.8.2.5 Action states that with the Train N 250 VDC battery and/or its charger inoperable, to declare the turbine driven auxiliary feedwater pump inoperable "and follow the Action statement of Specification 3.7.1.2." ITS 3.8.9 ACTION E covers the situation when the Train N 250 VDC electrical power distribution subsystem is inoperable. ITS 3.8.9 Required Action E.1 is to declare the turbine driven auxiliary feedwater train inoperable. This changes the CTS by deleting the detail to follow the Action statement of Specification 3.7.1.2.

The purpose of the CTS 3.8.2.5 Action to follow the Action Statement of Specification 3.7.1.2 is to alert the user of the appropriate Specification to enter when the turbine driven auxiliary feedwater train is declared inoperable. It is an ITS convention to not include these types of cross-references. This change is designated as administrative as it incorporates an ITS convention with no technical change to the CTS.

MORE RESTRICTIVE CHANGES

M.1 CTS 3.8.2.1 Action states that with less than the above complement of AC buses OPERABLE, to restore the inoperable bus to OPERABLE status within 8 hours. CTS 3.8.2.3 Action a states that with one 250 VDC bus inoperable, to restore the inoperable bus to OPERABLE status within 2 hours. ITS 3.8.9 ACTION A covers the situation when one or both Train A and Train B AC electrical power distribution subsystems are inoperable. ITS 3.8.9 Required Action A.1 allows 8 hours and 16 hours from discovery of failure to meet LCO 3.8.9.a, b, or c to restore the Train A and Train B AC electrical power distribution subsystem(s) to OPERABLE status. ITS 3.8.9 ACTION B covers the situation when one or both

DISCUSSION OF CHANGES
ITS 3.8.9, DISTRIBUTION SYSTEMS - OPERATING

Train A and Train B 120 VAC vital electrical power distribution subsystems are inoperable. ITS 3.8.9 Required Action B.1 allows 8 hours and 16 hours from discovery of failure to meet LCO 3.8.9.a, b, or c to restore the Train A and Train B 120 VAC vital electrical power distribution subsystem(s) to OPERABLE status. ITS 3.8.9 ACTION C covers the situation when one or both Train A and Train B 250 VDC electrical power distribution subsystems are inoperable. ITS 3.8.9 Required Action C.1 allows 2 hours and 16 hours from discovery of failure to meet LCO 3.8.9.a, b, or c to restore the Train A and Train B 250 VDC electrical power distribution subsystem(s) to OPERABLE status. This changes the CTS by establishing a maximum time allowed for any combination of distribution subsystems listed in ITS LCO 3.8.9.a, b, and c to be inoperable during any single contiguous occurrence of failing to meet the LCO.

The purpose of the CTS 3.8.2.1 is to limit the time AC buses can be inoperable. The purpose of CTS 3.8.2.3 is to limit the time the DC buses can be inoperable. The Completion Times of ITS 3.8.9 ACTIONS A, B, and C have a limitation in addition to the 8 hour limit of the CTS 3.8.2.1 Action or the 2 hour limit of CTS 3.8.2.3 Action a. This additional limit establishes a maximum time allowed for any combination of electrical power distribution subsystems listed in ITS LCO 3.8.9.a, b and c to be inoperable during any single contiguous occurrence of failing to meet the LCO. For example, if a Train A AC electrical distribution subsystem is inoperable while, for instance, a Train A DC electrical distribution subsystem is inoperable and subsequently returned to OPERABLE status, the LCO may already have been not met for up to 8 hours. This situation could lead to a total duration of 10 hours since initial failure of the LCO to restore the Train A DC electrical distribution system. Then, a Train A AC subsystem could again become inoperable, and the Train A DC electrical distribution subsystem restored to OPERABLE status. This could continue indefinitely. Therefore, to preclude this situation and place an appropriate restriction on any such unusual situation, the additional Completion Time of "16 hours from discovery of failure to meet LCO 3.8.9.a, b, or c" is proposed. This change is designated as more restrictive because an additional limitation has been placed on the Completion Times for electrical distribution subsystems.

M.2 CTS 3.8.2.1 Action states that with less than the above complement of AC buses OPERABLE, to restore the inoperable bus to OPERABLE status within 8 hours. CTS 3.8.2.3 Action a states that with one 250 VDC bus inoperable, to restore the inoperable bus to OPERABLE status within 2 hours. CTS 3.8.2.5 Action states that with the Train N battery system inoperable, to declare the turbine driven auxiliary feedwater pump inoperable. However, there are no limitations to preclude a loss of function due to numerous concurrently inoperable AC and DC buses. ITS 3.8.9 ACTION G has been added, requiring entry into ITS 3.0.3 if the loss of two or more electrical power distribution subsystems results in a loss of safety function.

The purpose of the CTS Actions are to limit the time the unit can operate under these conditions. CTS 3.8.2.3 Action a specifies the compensatory actions for one inoperable DC bus. With two inoperable DC buses, CTS 3.8.2.3 does not provide any actions and entry into LCO 3.0.3 would be required. CTS 3.8.2.1 Action is applicable to all inoperable AC buses even if there is a loss of safety function. Certain combinations of inoperable AC and DC electrical power

DISCUSSION OF CHANGES
ITS 3.8.9, DISTRIBUTION SYSTEMS - OPERATING

distribution subsystems will result in a loss of safety function (e.g., an inoperable Train A AC electrical power distribution subsystem in combination with an inoperable Train B 250 VDC electrical power distribution subsystem). ITS 3.8.9 includes ACTION G, which requires immediate entry into LCO 3.0.3 if the loss of one or more electrical power distribution subsystems results in a loss of safety function. ITS 3.8.9 Required Action G.1 preserves the intent of ITS LCO 3.0.3 and reflects an additional restriction on plant operation. This change is designated as more restrictive because an explicit action has been added which requires entry into LCO 3.0.3 with any combination of AC and/or DC buses inoperable that result in a loss of safety function.

M.3 CTS 4.8.2.1 states the specified AC buses shall be determined OPERABLE by verifying correct breaker alignment and "indicated power availability." CTS 4.8.2.3.1 states that each DC bus train shall be demonstrated OPERABLE by verifying correct breaker alignment and "indicated power availability." CTS 4.8.2.5.1 states that the DC bus Train N shall be determined OPERABLE by verifying correct breaker alignment and "indicated power availability." ITS SR 3.8.9.1 requires the verification of correct breaker alignments and "voltage" to required AC, DC, and 120 VAC vital bus electrical power distribution subsystems. This changes the CTS by requiring the verification of the correct voltages to the required AC, DC, and 120 VAC vital bus electrical power distribution subsystems, whereas the CTS only requires verification of indicated power.

The purpose of this change is to ensure proper voltage is supplied to the required AC, DC, and 120 VAC vital bus electrical power distribution subsystems. This change is acceptable because the Surveillance will continue to verify OPERABILITY of the required AC, DC, and 120 VAC vital bus electrical power distribution subsystems. Proper voltage from the required subsystems ensures proper voltage is supplied to the required safety features. This change is designated as more restrictive because the ITS requires verification of the correct voltage, whereas the CTS only requires a verification of indicated power availability.

M.4 CTS 3.8.2.1 only specifies the AC electrical power distribution subsystem requirements for the given unit. It does not explicitly specify the requirements for the AC electrical power distribution subsystem requirements associated with the opposite unit. CTS 3.8.2.3 only specifies the DC electrical power distribution system requirements for the given unit. It does not explicitly specify the requirements for the DC electrical power distribution subsystem requirements associated with the opposite unit. CTS LCO 3.7.4.1 requires two independent essential service water (ESW) loops to be OPERABLE. The CTS 3/4.7.4 Bases state that the LCO also ensures that an inoperable opposite unit ESW pump does not result in flow being diverted from an OPERABLE unit ESW pump sharing the same header. Therefore, if the header between the two units is not isolated, both ESW pumps on the same header support both units. The CTS definition of OPERABLE - OPERABILITY requires all attendant equipment to be capable of performing its required function, which includes electrical power distribution subsystems. However, there are no specific requirements in the CTS requiring the testing of the opposite unit electrical power distribution subsystems. ITS LCO 3.8.9.e requires the opposite unit Train A and Train B AC electrical power distribution subsystem(s) and the Train A and Train B 250 VDC electrical power distribution subsystem(s) required to support the equipment required to be OPERABLE by LCO 3.7.8, "Essential Service Water (ESW) System," to be OPERABLE. This change is discussed in DOC A.2. An explicit Surveillance Requirement has been added (SR 3.8.9.1) which requires the verification of correct breaker alignments and voltage to required opposite unit electrical power distribution subsystems. This changes the CTS by adding an explicit Surveillance Requirement for the opposite unit electrical power distribution subsystems to be applicable to the given unit Technical Specifications.

The purpose of Surveillance Requirements is to ensure the OPERABILITY of required equipment. An explicit SR (ITS SR 3.8.9.1) has been added that requires the verification of correct breaker alignments and voltage to required opposite unit AC and DC electrical power subsystems. The added Surveillance helps to ensure the required opposite unit AC and DC electrical power distribution subsystems remain OPERABLE. This change is designated as more restrictive because an additional Surveillance Requirement will be applicable to the CTS.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS LCO 3.8.2.1 requires the AC electrical buses to be OPERABLE "and energized with tie breakers open between redundant busses." CTS 4.8.2.1 also requires the AC buses to be determined OPERABLE "and energized from AC sources with tie breakers open between redundant busses" by verifying correct breaker alignment and indicated power availability. CTS LCO 3.8.2.3 requires the DC bus trains to be "energized" and OPERABLE "with tie breakers between bus trains open." CTS 4.8.2.3.1 requires the DC bus trains to be determined OPERABLE "and energized with tie breakers between bus trains open" by verifying correct breaker alignment and indicated power availability. CTS 3.8.2.5 requires the Train N bus to be "energized" and OPERABLE. CTS 4.8.2.5.1 also requires the Train N bus to be OPERABLE and "energized" by verifying correct breaker alignment and indicated power availability. ITS LCO 3.8.9 requires the applicable electrical power distribution subsystems to be OPERABLE and ITS SR 3.8.9.1 requires the verification of correct breaker alignments and voltage to required AC, DC, and 120 VAC vital bus electrical power distribution subsystems. This changes the CTS by moving the procedural detail that the buses must be energized with tie breakers open between redundant buses from the CTS to the ITS Bases.

The removal of these details for meeting Technical Specification requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement for the electrical power distribution subsystems to be OPERABLE

DISCUSSION OF CHANGES
ITS 3.8.9, DISTRIBUTION SYSTEMS - OPERATING

and requires the verification of correct breaker alignments and voltage to required AC, DC, and 120 VAC vital bus electrical power distribution subsystems. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LA.2 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.8.2.1 requires the AC electrical buses to be OPERABLE and lists the specific AC and 120 VAC vital buses, including the applicable nominal bus voltage. CTS LCO 3.8.2.3 requires the Trains AB (Train B) and CD (Train A) DC buses to be OPERABLE and lists the specific buses. CTS LCO 3.8.2.5 requires the Train N bus (Bus N) to be OPERABLE. ITS LCO 3.8.9 requires the applicable electrical power distribution subsystems to be OPERABLE, and lists the Train A and Train B AC electrical power distribution subsystems; Train A and Train B 120 VAC vital bus electrical power distribution subsystems; Train A and Train B 250 VDC distribution subsystems; and the Train N 250 VDC distribution subsystem. This changes the CTS by moving the specific names of the buses and the associated nominal bus voltages (i.e., 4160 V and 600 V) from the CTS to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. ITS 3.8.9 still retains the requirement for the required buses to be OPERABLE. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

<u>LESS RESTRICTIVE CHANGES</u>

L.1 *(Category 1 - Relaxation of LCO Requirements)* CTS LCO 3.8.2.1 footnote * requires the 120 VAC vital buses to be energized from their associated inverters connected to a DC bus. There is no other LCO requirement for the inverters to be OPERABLE. In the ITS, the inverters are placed in a separate Specification (either ITS 3.8.7 for MODES 1, 2, 3, and 4 or ITS 3.8.8 for the MODES 5 and 6, and during movement of irradiated fuel assemblies in the containment, auxiliary building, and opposite unit containment). The 120 VAC vital buses remain in their own separate Specifications during these same conditions (ITS 3.8.9 and ITS 3.8.10, respectively). When an inverter is inoperable, a 24 hour allowed time is provided to restore the inverter to OPERABLE status. During this 24 hours, the 120 VAC vital bus remains OPERABLE provided it is energized. In the ISTS Bases, the 120 VAC vital buses remain OPERABLE as long as they can be energized from a qualified source. The CNP ITS 3.8.9 Bases state that the qualified sources are the inverter powered from DC Sources and the Class 1E regulated 600/120 VAC transformer via the inverter. This changes the CTS by allowing the 120 VAC vital buses to be called OPERABLE when powered from a source other than the inverter connected to a DC bus.

The purpose of CTS LCO 3.8.2.1 footnote * is to provide requirements for the inverters. This requirement is maintained in ITS LCO 3.8.7 and LCO 3.8.8. For the 120 VAC vital buses to be OPERABLE, they only need to be powered from a qualified source (i.e., each of the allowed sources can carry the required loads on the associated vital bus). This change is acceptable because both the DC Source and the 120 VAC Class 1E regulated 600/120 VAC transformer are qualified sources capable of providing the necessary voltage, frequency, and capacity to the associated 120 VAC vital bus. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

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Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

CTS

3.8 ELECTRICAL POWER SYSTEMS

3.8.9 Distribution Systems - Operating

LCO 3.8.2.1

LCO 3.8.9 The following

Train A and Train B AC, DC, and AC vital bus electrical power distribution subsystems shall be OPERABLE. (2)

INSERT 1 (1)

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

INSERT 2 (1)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
3.8.2.1 Action A. One or more both Train A and Train B AC electrical power distribution subsystems inoperable.	- NOTE - Enter applicable Conditions and Required Actions of LCO 3.8.4, "DC Sources - Operating," for DC trains sources made inoperable by inoperable power distribution subsystems.	(1) (3)
	A.1 Restore AC electrical power distribution subsystem(s) to OPERABLE status.	8 hours AND 16 hours from discovery of failure to meet LCO 3.8.9.a, b, or c (1)
3.8.2.1 Action B. One or more both Train A and Train B 120 V AC vital buses bus electrical power distribution subsystems inoperable.	B.1 Restore AC vital bus electrical power distribution subsystem(s) to OPERABLE status.	2 hours 8 (4) (1) AND 16 hours from discovery of failure to meet LCO 3.8.9.a, b, or c (1)

1 **INSERT 1**

LCO 3.8.2.1 a. Train A and Train B AC electrical power distribution subsystems;

LCO 3.8.2.1 b. Train A and Train B 120 VAC vital bus electrical power distribution subsystems;

LCO 3.8.2.3 c. Train A and Train B 250 VDC electrical power distribution subsystems;

LCO 3.8.2.5 d. Train N 250 VDC electrical power distribution subsystem; and

DOC A.2 e. The Unit 2 (Unit 1) and Unit 1 (Unit 2) Train A and Train B AC electrical power distribution subsystem(s) and Train A and Train B 250 VDC electrical power distribution subsystem(s) required to support the equipment required to be OPERABLE by LCO 3.7.8, "Essential Service Water (ESW) System."

1 **INSERT 2**

-NOTE-

Train N 250 VDC electrical power distribution subsystem is not required to be OPERABLE in MODE 4.

CTS

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
3.8.2.3 Action a	C. One ~~or more~~ DC electrical power distribution subsystem~~s~~ inoperable. Train A or Train B 250V	C.1 Restore DC electrical power distribution subsystem~~(s)~~ to OPERABLE status.	2 hours AND 16 hours from discovery of failure to meet LCO 3.8.9.a, b, or c	1 1
3.8.2.1 Action, 3.8.2.3 Action	D. Required Action and associated Completion Time of Condition A, B, or C not met.	D.1 Be in MODE 3. AND D.2 Be in MODE 5.	6 hours 36 hours	1 1 INSERT 3
DOC M.3	6 ~~E~~. Two or more electrical power distribution subsystems inoperable that result in a loss of safety function.	6 ~~E~~.1 Enter LCO 3.0.3.	Immediately	1

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
4.8.2.1, 4.8.2.3, 4.8.2.5	SR 3.8.9.1	Verify correct breaker alignments and voltage to ~~required~~ AC, DC, and 120V AC vital bus electrical power distribution subsystems.	7 days	2 1

1

INSERT 3

3.8.2.5 Action	E. Required Train N 250 VDC electrical power distribution subsystem inoperable.	E.1 Declare the turbine driven auxiliary feedwater train inoperable.	Immediately
DOC A.2	F. One or more required Unit 2 (Unit 1) and Unit 1 (Unit 2) electrical distribution subsystems inoperable.	F.1 Declare associated ESW train(s) inoperable.	Immediately

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.9, DISTRIBUTION SYSTEMS - OPERATING

1. ISTS LCO 3.8.9 and Applicability have been revised to reflect the plant specific design for CNP Units 1 and 2. Additional requirements were added as ITS LCO 3.8.9 to ensure the appropriate electrical power distribution subsystems of the opposite unit are OPERABLE to support unit operation. This change was necessary due to a shared system (Essential Service Water System) between both units. In addition, ITS 3.8.9 ACTION F has been added to declare the associated Essential Service Water train inoperable when an opposite unit electrical power distribution subsystem is inoperable, since this is the only system affected by the inoperable opposite unit electrical power distribution subsystems. Due to this change and the Train N 250 VDC requirements, the second Completion Times for Required Actions A.1, B.1, and C.1 have been revised to not reflect the LCO 3.8.9.d and e requirements, since the associated system could be declared inoperable. Finally, the allowance in ISTS 3.8.9 ACTION C to have one or more DC electrical power distribution subsystems inoperable for 2 hours has been changed to address only the inoperability of one Train A or Train B 250 V DC subsystem, since if both the Train A and Train B buses were inoperable, then a loss of safety function would exist and entry into ACTION G would be necessary.

2. The brackets are removed and the proper plant specific information/value is provided.

3. Change made to be consistent with another Specification.

4. The current licensing basis time allowed to restore an inoperable 120 VAC vital bus electrical power distribution subsystem is 8 hours. Therefore, this time has been maintained.

Improved Standard Technical Specifications (ISTS) Bases Markup and Justification for Deviations (JFDs)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.9 Distribution Systems - Operating

BASES

for the most part

120V

BACKGROUND

The onsite Class 1E AC, DC, ~~and~~ AC vital bus electrical power distribution systems are divided by train into ~~two~~ redundant and independent AC, DC, and AC vital bus electrical power distribution subsystems. INSERT 1 ① ②

es two two

The AC electrical power subsystem for each train consists of a primary Engineered Safety Feature (ESF) 4.16 kV bus and secondary 480 and 120 V buses, ~~distribution panels, motor control centers and load centers~~. Each 4.16 kV ESF bus has at least one separate and independent offsite source of power as well as a dedicated onsite diesel generator (DG) source. Each 4.16 kV ESF bus is normally connected to a ~~preferred offsite source~~. After a loss of the preferred offsite power source to a 4.16 kV ESF bus, a transfer to the alternate offsite source is accomplished ~~by utilizing a time delayed bus undervoltage relay~~. If all offsite sources are unavailable, the onsite emergency DG supplies power to the 4.16 kV ESF bus. 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."

600V ① emergency two ① ② INSERT 2 normal emergency preferred INSERT 3 each two associated es s

The secondary AC electrical power distribution subsystem for each train includes the safety related buses ~~load centers, motor control centers, and distribution panels~~ shown in Table B 3.8.9-1. INSERT 4 ①

(s)

The 120 VAC vital buses are arranged in two load groups per train and are normally powered from the inverters. The alternate power supply for the vital buses are Class 1E ~~constant voltage source~~ transformers powered from the same train as the associated inverter, and its use is governed by LCO 3.8.7, "Inverters - Operating." Each ~~constant voltage source~~ transformer is powered from a Class 1E AC bus.

regulated 600/120 VAC ② electrical power distribution system ① two 250 VDC

Train A and Train B 250V

The DC electrical power distribution subsystem consists of 125 V bus(es) (one for each train) ~~and distribution panel(s)~~. INSERT 5 ②

120 VAC

The list of all required DC and vital AC distribution buses and panels is presented in Table B 3.8.9-1. INSERT 6 ① ②

2 **INSERT 1**

, as required by Safety Guide 6 (Ref. 1). The exception is the Train N DC electrical power distribution subsystem which supports the turbine driven auxiliary feedwater (AFW) train.

Unit 2 (Unit 1) and Unit 1 (Unit 2) also has an identical electrical power distribution system. When the Essential Service Water (ESW) trains are not isolated from Unit 2 (Unit 1) and Unit 1 (Unit 2), the associated Unit 2 (Unit 1) and Unit 1 (Unit 2) electrical power distribution subsystems (except for the Train N DC electrical power distribution subsystem) are required to support Unit 1 (Unit 1) and Unit 2 (Unit 2) operation.

2 **INSERT 2**

the main generator via the unit auxiliary transformer.

2 **INSERT 3**

by a main generator trip signal. A 4.16 kV emergency bus can be manually transferred to the alternate offsite source.

2 **INSERT 4**

The Unit 2 (Unit 1) and Unit 1 (Unit 2) AC electrical power distribution subsystems are also included in the table since they are required to support Unit 1 (Unit 1) and Unit 2 (Unit 2) operations when the associated ESW train is not isolated.

2 **INSERT 5**

The Train N 250 VDC electrical power subsystem consists of one bus and supports the operation of the turbine driven auxiliary feedwater train.

2 INSERT 6

The Unit 2 (Unit 1) and Unit 1 (Unit 2) Train A and Train B 250 V DC electrical power distribution subsystem buses are also included in the table since they are required to support Unit 1 (Unit 1) and Unit 2 (Unit 2) operations when the associated ESW train is not isolated. The Unit 2 (Unit 1) and Unit 1 (Unit 2) Train N 250 VDC electrical power distribution subsystem is not required to support Unit 1 (Unit 1) and Unit 2 (Unit 2) operations.

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BASES

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in the FSAR, Chapter [6] (Ref. 1), and in the FSAR, Chapter [15] (Ref. 2), assume ESF systems are OPERABLE. The AC, DC, and AC vital 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 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 10 CFR 50.36(c)(2)(ii).

LCO

The required power distribution subsystems listed in Table B 3.8.9-1 ensure the availability of AC, DC, and AC vital 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 bus electrical power distribution subsystems are required to be OPERABLE.

Maintaining the Train A and Train B AC, DC, and AC vital 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.

OPERABLE AC electrical power distribution subsystems require the associated buses, load centers, motor control centers, and distribution panels to be energized to their proper voltages. OPERABLE DC electrical power distribution subsystems require the associated buses and distribution panels to be energized to their proper voltage from either the associated battery or charger. OPERABLE vital bus electrical power distribution subsystems require the associated buses to be energized to

(u) (1) (2) (14) (120 V) (1) (2) (120 V) (2) (6) (1) – Operating (ies) (120V) (2) (2) transient INSERT 7 (2) Train A and Train B 120V (2) INSERT 8 Train A and Train B 250 VDC, Train N 250 VDC, (2) required (2) 120 VAC

2

INSERT 7

and certain buses of the Unit 2 (Unit 1) and Unit 1 (Unit 2) AC and DC electrical power distribution subsystems may be required to be OPERABLE to support the equipment required to be OPERABLE by LCO 3.7.8, "Essential Service Water (ESW) System."

2

INSERT 8

, and the required Unit 2 (Unit 1) and Unit 1 (Unit 2) AC and DC

BASES

LCO (continued)

or Class 1E regulated 600/120 VAC transformer via the inverter

their proper voltage from the associated inverter via inverted DC voltage, ~~inverter using internal AC source, or Class 1E constant voltage transformer~~. INSERT 8A (2)

In addition, tie breakers between redundant safety related AC, DC, ~~and~~ and ~~AC vital bus~~ power distribution subsystems ~~if they exist~~ 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). If any tie breakers are closed, the ~~affected redundant~~ electrical power distribution subsystems are considered 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 circuit. (2) electrical INSERT 8 B

APPLICABILITY

INSERT 9

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

a. Acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of ~~AOOs or abnormal transients~~ anticipated operational transients and (6) (2)

b. Adequate core cooling is provided, and containment OPERABILITY and other vital functions are maintained in the event of a postulated DBA. (4)

INSERT 10

Electrical power distribution subsystem requirements for MODES 5 and 6 are covered in the Bases for LCO 3.8.10, "Distribution Systems - Shutdown." INSERT 11 (3)

ACTIONS

A.1

both Train electrical power distribution subsystems (4)

With one or ~~more~~ Train A and B ~~required~~ AC ~~buses, load centers, motor control centers, or distribution panels~~ (except AC vital buses) ~~in one train~~ 120V inoperable and a loss of function has not occurred, 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 electrical power distribution subsystems could result in the minimum required ESF functions not being supported. Therefore, the ~~required~~ AC (4)

2 **INSERT 8A**

Based on the number of safety significant electrical loads associated with each bus listed in Table B 3.8.9-1, if one or more of the buses becomes inoperable, entry into the appropriate ACTIONS of LCO 3.8.9 is required. Some buses, such as distribution panels, which help comprise the AC and DC distribution systems, are not listed in Table B 3.8.9-1. The loss of electrical loads associated with these buses may not result in a complete loss of a redundant safety function necessary to shut down the reactor and maintain it in a safe condition. Therefore, should one or more of these buses become inoperable due to a failure not affecting the OPERABILITY of a bus listed in Table B 3.8.9-1 (e.g., a breaker supplying a single distribution panel fails open), the individual loads on the bus would be declared inoperable, and the appropriate Conditions and Required Actions of the LCOs governing the individual loads would be entered. However, if one or more of these buses is inoperable due to a failure also affecting the OPERABILITY of a bus listed in Table B 3.8.9-1 (e.g., loss of 4.16 kV emergency bus, which results in de-energization of all buses powered from the 4.16 kV emergency bus), then although the individual loads are still considered inoperable, the Conditions and Required Actions of the LCO for the individual loads are not required to be entered, since LCO 3.0.6 allows this exception (i.e., the loads are inoperable due to the inoperability of a support system governed by a Technical Specification; the 4.16 kV emergency bus).

2 **INSERT 8B**

that are not being powered from their normal source (i.e., they are being powered from their redundant electrical power distribution subsystem)

4 **INSERT 9**

The Train A and Train B AC, Train A and Train B 120 VAC vital bus, Train A and Train B 250 VDC, and the Unit 2 (Unit 1) and Unit 1 (Unit 2) Train A and Train B AC and Train A and Train B 250 VDC

4 **INSERT 10**

The Train N 250 VDC electrical power distribution subsystem is required to be OPERABLE in MODES 1, 2, and 3 to support the turbine driven auxiliary feedwater train in the event that it is called upon to function when the Main Feedwater System is lost.

3 **INSERT 11**

and other conditions in which electrical power distribution subsystems are required

BASES

ACTIONS (continued)

electrical power distribution subsystem(s)

4

~~buses~~ load centers, motor control centers, and distribution panels must be restored to OPERABLE status within 8 hours.

Condition A worst scenario is one train without AC power (i.e., no offsite power to the train and the associated DG inoperable). In this Condition, the unit is more vulnerable to a complete loss of AC power. It is, therefore, imperative that the unit operator's attention be focused on minimizing the potential for loss of power to the remaining train by stabilizing the unit, and on restoring power to the affected train. The 8 hour time limit before requiring a unit shutdown in this Condition is acceptable because of:

a. The potential for decreased safety if the unit operator's attention is diverted from the evaluations and actions necessary to restore power to the affected train, to the actions associated with taking the unit to shutdown within this time limit ~~and~~ ; 6

b. The potential for an event in conjunction with a single failure of a redundant component in the train with AC power.

The second Completion Time for Required Action A.1 establishes a limit on the maximum time allowed for any combination of required distribution subsystems to be inoperable during any single contiguous occurrence of failing to meet ~~the~~ LCO 3.8.9, a, b, or c. If Condition A is entered while, for instance, a Train A or Train B 250 V DC bus is inoperable and subsequently restored OPERABLE, the LCO may already have been not met for up to 2 hours. This could lead to a total of 10 hours, since initial failure ~~of~~ to meet the LCO, to restore the AC distribution system. At this time, a DC circuit could again become inoperable, and AC distribution restored OPERABLE. This could continue indefinitely. 4 4 8

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 the LCO was initially not met, instead of the time Condition A was entered. The 16 hour Completion Time is an acceptable limitation on this potential to fail to meet the LCO indefinitely.

Required Action A.1 is modified by a Note that requires the applicable Conditions and Required Actions of LCO 3.8.4, "DC Sources - Operating," to be entered for DC ~~trains~~ sources made inoperable by inoperable power distribution subsystems. This is an exception to LCO 3.0.6 and ensures the proper actions are taken for these components. Inoperability 4

BASES

ACTIONS (continued)

of a distribution system can result in loss of charging power to batteries and eventual loss of DC power. This Note ensures that the appropriate attention is given to restoring charging power to batteries, if necessary, after loss of distribution systems.

B.1

both 120V electrical power distribution subsystems 4

With one or ~~more~~ AC vital bus~~es~~ inoperable, and a loss of function has not yet occurred, the remaining OPERABLE AC vital buses are capable of supporting the minimum safety functions necessary to shut down the unit and maintain it in the safe shutdown condition. Overall reliability is reduced, however, since an additional single failure could result in the minimum required ESF functions not being supported. Therefore, the required AC vital bus must be restored to OPERABLE status within 2 hours by powering the bus from the associated inverter via inverted DC ~~inverter using internal AC source, or Class 1E constant voltage transformer~~.

120V 4 B 120V 1 2 2

or Class 1E regulated 600/120 VAC transformer via the inverter

120V

Condition B represents one or more AC vital buses without power; potentially both the DC source and the associated AC source are nonfunctioning. In this situation, the unit is significantly more vulnerable to a complete loss of all noninterruptible power. It is, therefore, imperative that the operator's attention focus on stabilizing the unit, minimizing the potential for loss of power to the remaining vital buses and restoring power to the affected vital bus. 2

120 VAC 120 VAC 120 VAC 6

This 2 hour limit is more conservative than Completion Times allowed for the vast majority of components that are without adequate vital ~~AC~~ bus power. Taking exception to LCO 3.0.2 for components without adequate vital ~~AC~~ power, that would have the Required Action Completion Times shorter than 2 hours if declared inoperable, is acceptable because of: 4 2 2 4

120 VAC bus 8

a. The potential for decreased safety by requiring a change in unit conditions (i.e., requiring a shutdown) and not allowing stable operations to continue, ; 6

b. The potential for decreased safety by requiring entry into numerous Applicable Conditions and Required Actions for components without adequate vital ~~AC~~ power and not providing sufficient time for the operators to perform the necessary evaluations and actions for restoring power to the affected train, and bus 2

120 VAC ; 6

BASES

ACTIONS (continued)

c. The potential for an event in conjunction with a single failure of a redundant component.

The 2 hour Completion Time takes into account the importance to safety of restoring the AC vital bus to OPERABLE status, the redundant capability afforded by the other OPERABLE vital buses, and the low probability of a DBA occurring during this period.

The second Completion Time for Required Action B.1 establishes a limit on the maximum allowed for any combination of required distribution subsystems to be inoperable during any single contiguous occurrence of failing to meet the LCO. If Condition B is entered while, for instance, an AC bus is inoperable and subsequently returned OPERABLE, the LCO may already have been not met for up to 8 hours. This could lead to a total of 10 hours, since initial failure of the LCO, to restore the vital bus distribution system. At this time, an AC train could again become inoperable, and vital bus distribution restored OPERABLE. This could continue indefinitely.

This 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 the LCO was initially not met, instead of the time Condition B was entered. The 16 hour Completion Time is an acceptable limitation on this potential to fail to meet the LCO indefinitely.

C.1

With one or more DC buses or distribution panels inoperable, and a loss of function has not yet occurred, the remaining DC 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 DC electrical power distribution subsystem could result in the minimum required ESF functions not being supported. Therefore, the required DC buses and distribution panels must be restored to OPERABLE status within 2 hours by powering the bus from the associated battery or charger.

Condition C represents one or more DC buses or distribution panels without adequate DC power; potentially both with the battery significantly degraded and the associated charger nonfunctioning. In this situation, the unit is significantly more vulnerable to a complete loss of all DC

4 **INSERT 12**

electrical power distribution subsystem(s)

4 **INSERT 13**

Train A or Train B 250 V

4 **INSERT 14**

electrical power distribution subsystem

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BASES

ACTIONS (continued)

power. It is, therefore, imperative that the operator's attention focus on stabilizing the unit, minimizing the potential for loss of power to the remaining trains and restoring power to the affected train.

This 2 hour limit is more conservative than Completion Times allowed for the vast majority of components that would be without power. Taking exception to LCO 3.0.2 for components without adequate DC power, which would have Required Action Completion Times shorter than 2 hours, is acceptable because of:

a. The potential for decreased safety by requiring a change in unit conditions (i.e., requiring a shutdown) while allowing stable operations to continue, ; not 7 6

b. The potential for decreased safety by requiring entry into numerous applicable Conditions and Required Actions for components without DC power and not providing sufficient time for the operators to perform the necessary evaluations and actions for restoring power to the affected train, and ; 6

c. The potential for an event in conjunction with a single failure of a redundant component. 4 3.8.9.a, b, or c

5

The 2 hour Completion Time for DC buses is consistent with Regulatory Guide 1.93 (Ref. 3). The second Completion Time for Required Action C.1 establishes a limit on the maximum time allowed for any combination of required distribution subsystems to be inoperable during any single contiguous occurrence of failing to meet the LCO. If Condition C is entered while, for instance, an AC bus is inoperable and subsequently returned OPERABLE, the LCO may already have been not met for up to 8 hours. This could lead to a total of 10 hours, since initial failure of the LCO, to restore the DC distribution system. At this time, an AC train could again become inoperable, and DC distribution restored OPERABLE. This could continue indefinitely.

Train A or Train B 4

Train A or Train B 250V 4

Train A or Train B System 7

to meet 8

Train A or Train B

This 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 the LCO was initially not met, instead of the time Condition C was entered. The 16 hour Completion Time is an acceptable limitation on this potential to fail to meet the LCO indefinitely.

BASES

ACTIONS (continued)

D.1 and D.2

If the inoperable distribution subsystem 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~~ unit systems.

INSERT 15 (4)

(2)

INSERT 16 (4)

(6) E.1 (4)

Condition E corresponds to a level of degradation in the electrical power distribution system that causes a required safety function to be lost. When more than one inoperable electrical power distribution subsystem results in the loss of a required function, the ~~plant~~ unit (2) is in a condition outside the accident analysis. Therefore, no additional time is justified for continued operation. LCO 3.0.3 must be entered immediately to commence a controlled shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.8.9.1

This Surveillance verifies that the ~~[required]~~ AC, DC, and 120V AC vital bus electrical power distribution systems are functioning properly, with the correct circuit breaker alignment. The correct breaker alignment ensures the appropriate separation and independence of the electrical divisions is maintained, and the appropriate voltage is available to each required bus. The verification of proper voltage availability on the buses ensures that the required voltage is readily available for motive as well as control functions for critical system loads connected to these buses. The 7 day Frequency takes into account the redundant capability of the AC, DC, and 120V AC vital bus electrical power distribution subsystems, and other indications available in the control room that alert the operator to subsystem malfunctions. (1)

REFERENCES

1. ~~FSAR, Chapter [6]~~ Safety Guide 6, March 1971 (2)
2. FSAR, Chapter ~~[15]~~ 14. (4) (1)
3. Regulatory Guide 1.93, December 1974.

4 **INSERT 15**

If any Required Action and associated Completion Time of Condition A, B, or C is not met,

4 **INSERT 16**

E.1

With the required Train N 250 VDC electrical power distribution system inoperable, the Train N powered system is not capable of performing its intended function. Immediately declaring the affected supported feature (e.g., the turbine driven AFW System) inoperable allows the ACTIONS of LCO 3.7.5, "Auxiliary Feedwater System (AFW)," to apply appropriate limitations on continued reactor operation.

F.1

With the required portions of the Unit 2 (Unit 1) and Unit 1 (Unit 2) Train A and Train B AC electrical power distribution subsystems and Train A and Train B 250 VDC electrical power distribution subsystems inoperable, the associated ESW train is not capable of performing its intended function. Immediately declaring the affected supported feature (i.e., the ESW train) inoperable allows the ACTIONS of LCO 3.7.8 to apply appropriate limitations on continued reactor operation.

Table B 3.8.9-1 (page 1 of 1)
AC and DC Electrical Power Distribution Systems

TYPE	VOLTAGE	TRAIN A*	TRAIN B*
AC safety buses	[4160 V]	[ESF Bus] [NB01]	[ESF Bus] [NB02]
	[480 V]	Load Centers [NG01, NG03]	Load Centers [NG02, NG04]
	[480 V]	Motor Control Centers [NG01A, NG01I, NG01B, NG03C, NG03I, NG03D]	Motor Control Centers [NG02A, NG02I, NG02B, NG04C, NG04I, NG04D]
	[120 V]	Distribution Panels [NP01, NP03]	Distribution Panels [NP02, NP04]
DC buses	[125 V]	Bus [NK01]	Bus [NK02]
		Bus [NK03]	Bus [NK04]
		Distribution Panels [NK41, NK43, NK51]	Distribution Panels [NK42, NK44, NK52]
AC vital buses	[120 V]	Bus [NN01]	Bus [NN02]
		Bus [NN03]	Bus [NN04]

* Each train of the AC and DC electrical power distribution systems is a subsystem.

INSERT 17

2

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2

INSERT 17
(UNIT 1 only)

Table B 3.8.9-1 (page 1 of 1)
AC, DC, and 120 VAC Vital Bus Electrical Power Distribution Systems

TYPE	VOLTAGE	TRAIN A[(a)(b)]	TRAIN B[(a)(b)]	TRAIN N[(a)]
AC Buses	4.16 kV	Emergency Bus T11C, T11D	Emergency Bus T11A, T11B	Not Applicable
	600 V	Emergency Bus 11C, 11D	Emergency bus 11A, 11B	
DC Buses	250 V	Main Distribution Cabinet CD	Main Distribution Cabinet AB	Battery Distribution Cabinet N
AC Vital Buses	120 V	Instrument Distribution Cabinet Channels I and II	Instrument Distribution Cabinet Channels III and IV	Not Applicable

(a) Each train of the AC, DC, and 120 VAC Vital Bus Electrical Power Distribution Systems is a subsystem.

(b) If the ESW crosstie header associated with Train A ESW pump is not isolated, the following Unit 2 buses are required to be OPERABLE: 4.16 kV Emergency Bus T21A and 250 V Main Distribution Cabinet AB. If the ESW crosstie header associated with Train B ESW pump is not isolated the following Unit 2 buses are required to be OPERABLE: 4.16 kV Emergency Bus T21D and 250 V Main Distribution Cabinet CD.

2

INSERT 17
(UNIT 2 only)

Table B 3.8.9-1 (page 1 of 1)
AC, DC, and 120 VAC Vital Bus Electrical Power Distribution Systems

TYPE	VOLTAGE	TRAIN A[(a)(b)]	TRAIN B[(a)(b)]	TRAIN N[(a)]
AC Buses	4.16 kV 600 V	Emergency Bus T21C, T21D Emergency Bus 21C, 21D	Emergency Bus T21A, T21B Emergency bus 21A, 21B	Not Applicable
DC Buses	250 V	Main Distribution Cabinet CD	Main Distribution Cabinet AB	Battery Distribution Cabinet N
AC Vital Buses	120 V	Instrument Distribution Cabinet Channels I and II	Instrument Distribution Cabinet Channels III and IV	Not Applicable

(a) Each train of the AC, DC, and 120 VAC Vital Bus Electrical Power Distribution Systems is a subsystem.

(b) If the ESW crosstie header associated with Train A ESW pump is not isolated, the following Unit 1 buses are required to be OPERABLE: 4.16 kV Emergency Bus T11A and 250 V Main Distribution Cabinet AB. If the ESW crosstie header associated with Train B ESW pump is not isolated the following Unit 1 buses are required to be OPERABLE: 4.16 kV Emergency Bus T11D and 250 V Main Distribution Cabinet CD.

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.9 BASES, DISTRIBUTION SYSTEMS - OPERATING

1. The brackets have been removed and the proper plant specific information/value has been provided.
2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.
3. Changes are made to be consistent with the Applicability of ITS LCO 3.8.10.
4. Changes are made to the Bases which reflect changes made to the Specifications.
5. Editorial change made for enhanced clarity or to be consistent with the Writer's Guide for the Improved Standard Technical Specification, NEI 01-03.
6. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.
7. Typographical/grammatical error corrected.
8. Changes are made to be consistent with the Specification.

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.9, DISTRIBUTION SYSTEMS - OPERATING

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 10

ITS 3.8.10, Distribution Systems - Shutdown

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

ITS 3.8.10

ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

A.C. DISTRIBUTION SHUTDOWN

LIMITING CONDITION FOR OPERATION

The necessary portions of the — M.1

LCO 3.8.10 3.8.2.2 ~~As a minimum, the following~~ A.C. electrical ~~busses~~ shall be OPERABLE ~~and energized~~: — LA.1

distribution subsystem — LA.2

~~1 - 4160-volt Emergency Bus, and~~

~~1 - 600-volt Emergency Bus, and~~

~~2 - 120 volt A.C. Vital Busses.~~

APPLICABILITY MODES 5 and 6, and ~~during movement of irradiated fuel~~. — A.5

ACTION: Add proposed ACTIONS Note — A.2

ACTION A With less than the above complement of A.C. busses OPERABLE and energized, Add proposed Required Action A.1 — M.1

a. Immediately suspend all operations involving CORE ALTERATIONS, movement of irradiated fuel assemblies, and positive reactivity ~~changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5 or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2.~~ additions that could result in loss of required SDM or boron concentration — L.1

b. Immediately initiate actions to restore the required A.C. electrical busses to OPERABLE status.

c. Immediately declare associated required residual heat removal loop(s) inoperable.

SURVEILLANCE REQUIREMENTS

SR 3.8.10.1 4.8.2.2 The specified A.C. busses shall be determined OPERABLE ~~and energized~~ at least once per 7 days by verifying correct breaker alignment and ~~indicated power availability~~. voltage — LA.1, M.2

~~Energized from its associated inverter connected to a DC bus.~~ — See ITS 3.8.8

ITS

A.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - SHUTDOWN

LIMITING CONDITION FOR OPERATION

M.1 The necessary portions of the

LA.1

LA.2

LCO 3.8.10 3.8.2.4 ~~As a minimum, the following~~ D.C. electrical ~~equipment and~~ ~~bus~~ shall be ~~energized and~~ OPERABLE:

distribution subsystem

See ITS 3.8.5 ~~1 - 250-volt D.C. bus, and~~

See ITS 3.8.5 1 - 250-volt battery bank and charger associated with the above D.C. bus.

APPLICABILITY: MODES 5 and 6, and ~~during movement of irradiated fuel~~ A.5

ACTION: Add proposed ACTIONS Note A.2

ACTION A With less than the above complement of D.C. equipment and bus OPERABLE See ITS 3.8.5

Add proposed Required Action A.1 M.1

a. Immediately suspend all operations involving CORE ALTERATIONS, movement of irradiated fuel assemblies, and positive reactivity ~~changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2.~~ additions that could result in loss of required SDM or boron concentration L.1

b. Immediately initiate actions to restore the required D.C. electrical equipment and bus to OPERABLE status. See ITS 3.8.5

c. Immediately declare associated required residual heat removal loop(s) inoperable.

SURVEILLANCE REQUIREMENTS

LA.1

SR 3.8.10.1 4.8.2.4.1 The above required 250-volt D.C. bus shall be determined OPERABLE ~~and energized~~ at least once per 7 days by verifying correct breaker alignment and ~~indicated power availability~~ voltage M.2

4.8.2.4.2 The above required 250-volt battery bank and charger shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2. See ITS 3.8.5 and 3.8.6

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ITS

A.1

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

M.1

A.C. DISTRIBUTION SHUTDOWN

LIMITING CONDITION FOR OPERATION

The necessary portions of the

LA.1

3.8.2.2 ~~As a minimum, the following~~ A.C. electrical ~~busses~~ shall be OPERABLE ~~and energized~~:

distribution subsystem

~~1 - 4160-volt Emergency Bus, and~~

~~1 - 600-volt Emergency Bus, and~~

~~2 - 120-volt A.C. Vital Busses.~~

LA.2

Unit 1 electrical power distribution subsystem requirements

A.3

APPLICABILITY: MODES 5 and 6.

During movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 1 containment

A.4

ACTION:

Add proposed ACTIONS Note

A.2

ACTION A

With less than the above complement of A.C. busses OPERABLE and energized.

Add proposed Required Action A.1

M.1

a. Immediately suspend all operations involving CORE ALTERATIONS, movement of irradiated fuel assemblies, and positive reactivity ~~changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2.~~

additions that could result in loss of required SDM or boron concentration

L.1

b. Immediately initiate actions to restore the required A.C. electrical busses to OPERABLE status.

c. Immediately declare associated required residual heat removal loop(s) inoperable.

A.3

Add proposed ACTION B

SURVEILLANCE REQUIREMENTS

LA.1

SR 3.8.10.1 4.8.2.2 The specified A.C. busses shall be determined OPERABLE ~~and energized~~ at least once per 7 days by verifying correct breaker alignment and ~~indicated power availability~~.

voltage

M.2

Add proposed SR 3.8.10.1 for Unit 1 electrical power distribution subsystem requirements

M.3

~~Energized from its associated inverter connected to a DC bus.~~

See ITS 3.8.8

ITS

A.1

M.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

LA.1

D.C. DISTRIBUTION - SHUTDOWN

The necessary portions of the

LA.2

LIMITING CONDITION FOR OPERATION

LCO 3.8.10 3.8.2.4 ~~As a minimum, the following~~ D.C. electrical ~~equipment and bus~~ shall be ~~energized and~~ OPERABLE:

distribution subsystem

See ITS 3.8.5

~~1 - 250-volt D.C. bus, and~~

See ITS 3.8.5

1 - 250-volt battery bank and charger associated with the above D.C. bus.

A.4

APPLICABILITY: MODES 5 and 6.

During movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 1 containment

A.2

Add ACTIONS Note

ACTION:

See ITS 3.8.5

ACTION A With less than the above complement of D.C. ~~equipment and~~ bus OPERABLE.

Add proposed Required Action A.1

M.1

a. Immediately suspend all operations involving CORE ALTERATIONS, movement of irradiated fuel assemblies, and positive reactivity ~~changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2.~~

L.1

additions that could result in loss of required SDM or boron concentration

b. Immediately initiate actions to restore the required D.C. electrical ~~equipment and~~ bus to OPERABLE status.

See ITS 3.8.5

LA.1

c. Immediately declare associated required residual heat removal loop(s) inoperable.

SURVEILLANCE REQUIREMENTS

M.2

SR 3.8.10.1 4.8.2.4.1 The above required 250-volt D.C. bus shall be determined OPERABLE ~~and energized~~ at least once per 7 days by verifying correct breaker alignment and ~~indicated power availability~~.

voltage

4.8.2.4.2 The above required 250-volt battery bank and charger shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

See ITS 3.8.5 and 3.8.6

DISCUSSION OF CHANGES
ITS 3.8.10, DISTRIBUTION SYSTEMS - SHUTDOWN

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A.2 Unit 1 CTS 3.8.2.2 and CTS 3.8.2.4 are applicable during MODES 5 and 6, and during the movement of irradiated fuel. Unit 2 CTS 3.8.2.2 and CTS 3.8.2.4 are applicable during MODES 5 and 6. ITS 3.8.10 is applicable in MODES 5 and 6, and during the movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment. However, a Note has been added to the ACTIONS which states that LCO 3.0.3 is not applicable. This changes the CTS by adding the Note to the ACTIONS stating that LCO 3.0.3 is not applicable.

The purpose of CTS 3.8.2.2 and 3.8.2.4 is to ensure that at least one train of AC and DC electrical distribution buses are OPERABLE to support equipment required to be OPERABLE. This change adds a clarification Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODES 5 or 6, LCO 3.0.3 is not applicable and would not specify any action. If moving irradiated fuel assemblies while in MODES 1, 2, 3, or 4, the fuel movement is independent of reactor operations and the inability to suspend movement in accordance with the ITS 3.8.10 Required Actions would not be sufficient reason to require a reactor shutdown. This Note has been added for clarification and is necessary since defaulting to LCO 3.0.3 would require the reactor to be shutdown, but would not require suspension of the activities with a potential for releasing radioactive materials. This change is designated as administrative as it is a clarification of the intent of CTS 3.0.3 that does not result in a technical change to the CTS.

A.3 (Unit 2 only) CTS 3.8.2.2 only provides the requirements for the unit AC electrical power distribution subsystems. The Specification does not provide any requirements for the Unit 1 AC electrical power distribution subsystems. CTS 3.9.12 requires the Fuel Handling Area Exhaust Ventilation (FHAEV) System to be OPERABLE whenever irradiated fuel is in the storage pool. The CTS definition of OPERABLE – OPERABILITY requires all attendant equipment to be capable of performing its required function, and includes necessary electrical power distribution requirements. Thus, a Unit 1 AC electrical power distribution subsystem may be required to be OPERABLE. In addition, this would require declaring the FHAEV System inoperable when a required Unit 1 bus is inoperable. Unit 2 ITS LCO 3.8.10 requires a Unit 1 electrical power distribution subsystem to be OPERABLE to support equipment required to be OPERABLE. ITS 3.8.10 ACTION B has been added to immediately declare associated Fuel Handling Area Exhaust Ventilation (FHAEV) System inoperable when a required Unit 1 AC electrical power distribution subsystem is inoperable.

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DISCUSSION OF CHANGES
ITS 3.8.10, DISTRIBUTION SYSTEMS - SHUTDOWN

This changes the Unit 2 CTS by providing an explicit LCO and ACTION for the Unit 1 AC electrical power distribution subsystem.

The purpose of CTS 3.8.2.2 is to ensure at least one train of electrical power distribution system is OPERABLE. The explicit requirements for a Unit 1 electrical power distribution subsystem are not included in CTS 3.8.2.2. However, the FHAEV System, a shared system between the Units, is powered from Unit 1. The added LCO requirement is consistent with the CTS since the definition of OPERABLE-OPERABILITY requires all attendant equipment to be capable of performing its required function, and the added ACTION is also consistent with the CTS. This change is designated as administrative because the Unit 2 CTS requirements are unchanged.

A.4 (Unit 2 only) CTS 3.8.2.2 and CTS 3.8.2.4 are applicable during MODES 5 and 6. However, the CTS 3.8.2.2 Action and CTS 3.8.2.4 Action require movement of irradiated fuel assemblies to be suspended if the required AC or DC electrical equipment is inoperable. ITS 3.8.10 is applicable in MODES 5 and 6, and during the movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 1 containment. This changes the Unit 2 CTS by adding the explicit Applicability of during movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 1 containment.

The purpose of CTS 3.8.2.2 and CTS 3.8.2.4 is to ensure that the appropriate AC and DC buses are OPERABLE to support equipment required to be OPERABLE. This change adds the explicit Applicability of during movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 1 containment. This Applicability is consistent with the Applicability of Unit 1 CTS 3.8.2.2 and CTS 3.8.2.4, and consistent with the Unit 2 CTS 3.8.2.2 and 3.8.2.4 Actions, which state to suspend movement of irradiated fuel when the AC and DC buses are inoperable. This change is designated as administrative as it is a clarification of the intent of Unit 2 CTS 3.8.2.2 and Unit 2 CTS 3.8.2.4 that does not result in a technical change to the Unit 2 CTS.

A.5 (Unit 1 only) CTS 3.8.2.2 Applicability and CTS 3.8.2.4 Applicability include "during movement of irradiated fuel." ITS 3.8.10 Applicability includes "During movement of irradiated fuel assemblies in the containment, auxiliary building, and Unit 2 containment." This changes the Unit 1 CTS by clarifying the locations that fuel movement is taking place.

The purpose of CTS 3.8.2.2 and CTS 3.8.2.4, with respect to fuel handling, is to ensure adequate AC and DC buses are available to power equipment required to mitigate a fuel handling accident event. This protection is required during irradiated fuel movement in three locations: the unit containment, the auxiliary building, and the opposite unit containment. Therefore, for clarity, all three locations are specified in the ITS Applicability, in lieu of the current wording which just specifies irradiated fuel movement. This change is designated as administrative because it does not result in any technical changes to the Unit 1 CTS.

DISCUSSION OF CHANGES
ITS 3.8.10, DISTRIBUTION SYSTEMS - SHUTDOWN

MORE RESTRICTIVE CHANGES

M.1 CTS LCO 3.8.2.2 requires a minimum of one 4160 V emergency bus, one 600 V emergency bus, and two 120 VAC vital buses to be OPERABLE. CTS LCO 3.8.2.4 requires one 250 VDC bus to be OPERABLE. The existing requirement of CTS LCO 3.8.2.2 and LCO 3.8.2.4 for distribution buses to be OPERABLE during shutdown conditions is not specific as to what the system must be powering. ITS 3.8.10 specifies that the necessary portions of Train A and Train B AC, Train A and Train B 250 VDC, and Train A and Train B 120 VAC vital bus electrical power distribution subsystems must be OPERABLE to support equipment required to be OPERABLE. In addition, an optional Required Action (ITS 3.8.10 Required Action A.1) has been added which allows the associated supported required feature(s) to be declared inoperable. This change adds a requirement that the applicable portions of Train A and Train B AC, Train A and Train B 250 VDC, and Train A and Train B 120 VAC vital bus electrical power distribution subsystems must be OPERABLE when required to support equipment required to be OPERABLE by the Technical Specifications. This could require more buses to be OPERABLE than is currently required. In addition, an action has been added to allow an option to the existing actions.

The purpose of CTS 3.8.2.2 and CTS 3.8.2.4 is to ensure that at least one train of AC, DC and 120 VAC vital bus electrical power distribution systems are OPERABLE. This change adds a requirement that the applicable portions of Train A and Train B AC, Train A and Train B 250 VDC, and Train A and Train B 120 VAC vital bus electrical power distribution subsystems must be OPERABLE when required to support equipment required to be OPERABLE by the Technical Specifications. This added restriction conservatively assures the needed electrical power distribution buses are OPERABLE, even if this results in both the trains of one or more of the electrical power distribution systems being required. Since the ITS 3.8.10 electrical power distribution subsystem OPERABILITY requirements require the necessary portions of the distribution subsystems to be OPERABLE to support equipment required to be OPERABLE, if a portion of the electrical power distribution subsystem cannot supply any required equipment, that electrical power distribution subsystem is inoperable. In this event it may not be necessary to suspend all CORE ALTERATIONS, irradiated fuel handling, and positive reactivity additions. Conservative actions can be assured if all required equipment without the necessary power is declared inoperable, and the associated ACTIONS of the individual equipment is taken (ITS 3.8.10 Required Action A.1). Therefore, along with the conservative additional requirements placed on the electrical power distribution subsystems, Required Action A.1, which requires the associated supported equipment to be declared inoperable, is also added. These changes are acceptable since the additions represent restrictions consistent with implicit assumptions for operation in shutdown conditions (required equipment receiving the necessary required power), and these restrictions are not currently imposed by the Technical Specifications. This change is designated as more restrictive because it adds a new requirement to the CTS.

M.2 CTS 4.8.2.2 and CTS 4.8.2.4.1 state the specified buses shall be determined OPERABLE by verifying correct breaker alignment and "indicated power availability." ITS SR 3.8.10.1 requires the verification of correct breaker alignments and "voltage" to required AC, DC, and 120 VAC vital buses electrical power distribution subsystems. This changes the CTS by requiring the verification of the correct voltages to the required AC, DC, and 120 VAC vital bus electrical power distribution subsystems, whereas the CTS only requires verification of indicated power availability.

The purpose of this change is to ensure proper voltage is supplied to the required AC, DC, and 120 VAC vital buses electrical power distribution subsystems. This change is acceptable because the Surveillance will continue to verify OPERABILITY of the required AC, DC, and 120 VAC vital bus electrical power distribution subsystems. Proper voltage from the required subsystems ensures proper voltage is supplied to the required safety features. This change is designated as more restrictive because the ITS requires verification of the correct voltage, whereas the CTS only requires a verification of indicated power availability.

M.3 (Unit 2 only) CTS 3.8.2.2 requires one AC electrical power distribution subsystem to be OPERABLE. The required AC electrical power distribution subsystem buses are Unit 2 buses. CTS 3.9.12 requires the Fuel Handling Area Exhaust Ventilation (FHAEV) System (which is powered from Unit 1 AC buses) to be OPERABLE whenever irradiated fuel is in the storage pool. The CTS definition of "OPERABLE-OPERABILITY" requires all attendant equipment to be capable of performing its required function. However, there are no specific requirements in CTS 3.8.2.2 requiring the testing of the Unit 1 AC electrical power distribution subsystem buses that support the FHAEV System. Unit 2 ITS LCO 3.8.10 requires a Unit 1 electrical power distribution subsystem to support equipment required to be OPERABLE. This change is discussed in DOC A.3. An explicit SR (ITS SR 3.8.10.1) has been added which requires the verification of correct breaker alignments and voltage to the required Unit 1 electrical power distribution subsystem. This SR has been modified with a NOTE clarifying that the SR for the Unit 1 AC electrical power distribution subsystem is only required to be met when the associated FHAEV System is required to OPERABLE to support Unit 2 operation. This changes the Unit 2 CTS by explicitly requiring a Surveillance Requirement for the Unit 1 AC electrical power distribution subsystem required to be OPERABLE to support Unit 2 operation.

The purpose of Surveillance Requirements is to ensure the OPERABILITY of required equipment. An explicit SR (ITS SR 3.8.10.1) has been added which requires the verification of correct breaker alignments and voltage to required Unit 1 AC electrical power distribution subsystem. The added Surveillance helps to ensure the required Unit 1 AC electrical power distribution subsystem remains OPERABLE when the associated FHAEV System is required to be OPERABLE to support Unit 2 operation. This change is designated as more restrictive because an additional Surveillance Requirement will be applicable to the Unit 2 Technical Specifications.

RELOCATED SPECIFICATIONS

None

DISCUSSION OF CHANGES
ITS 3.8.10, DISTRIBUTION SYSTEMS - SHUTDOWN

REMOVED DETAIL CHANGES

LA.1 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS LCO 3.8.2.2 requires the AC electrical buses to be OPERABLE and "energized." CTS 4.8.2.2 also requires the AC buses to be demonstrated OPERABLE and "energized" by verifying correct breaker alignment and indicated power availability. CTS LCO 3.8.2.4 requires the DC bus to be "energized" and OPERABLE. CTS 4.8.2.4.1 requires the verification that the DC bus is determined OPERABLE and "energized" by verifying correct breaker alignment and indicated power availability. ITS LCO 3.8.10 requires the applicable electrical power distribution subsystems to be OPERABLE and ITS SR 3.8.10.1 requires the verification of correct breaker alignments and voltage to each required AC, DC, and 120 VAC vital bus electrical power distribution subsystems. This changes the CTS by moving the procedural detail that the buses must be "energized" from the CTS to the ITS Bases.

The removal of these details for meeting Technical Specification requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement for the electrical power distribution subsystems to be OPERABLE and requires the verification of correct breaker alignment and voltage to required AC, DC, and 120 VAC vital bus electrical power distribution subsystems. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LA.2 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.8.2.2 requires AC electrical buses to be OPERABLE and specifies nominal bus voltages. CTS LCO 3.8.2.4 requires a 250 VDC bus to be OPERABLE and specifies bus voltage. ITS LCO 3.8.10 requires necessary portions of the AC, DC, and 120 VAC vital bus electrical power distribution subsystems to be OPERABLE to support equipment required to be OPERABLE. ITS SR 3.8.10.1 requires the verification of correct breaker alignment and voltage to each required AC, DC, and 120 VAC vital bus electrical power distribution subsystems. This changes the CTS by moving description of the buses (including the nominal bus voltages) from the Specification to the Bases. Other changes to CTS LCO 3.8.2.2 and CTS LCO 3.8.2.4 are discussed in DOCs M.1 and LA.1.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement for the electrical power distribution subsystems to be OPERABLE and requires the verification of correct breaker alignment and voltage to required AC and DC electrical power distribution subsystems. This change is acceptable because the

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DISCUSSION OF CHANGES
ITS 3.8.10, DISTRIBUTION SYSTEMS - SHUTDOWN

removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L.1 *(Category 4 – Relaxation of Required Action)* CTS 3.8.2.2 Action a specifies the compensatory actions for a required inoperable AC electrical power distribution subsystem. CTS 3.8.2.4 Action a specifies the compensatory actions for an inoperable required DC electrical power distribution subsystem. The compensatory actions for both Specifications are identical. One of the compensatory actions is the suspension of positive reactivity "changes except: 1) heatup or cooldown of the reactor coolant volume provided that SHUTDOWN MARGIN sufficient to accommodate the change in temperature is maintained in accordance with Specification 3.1.1.2 in MODE 5 or Specification 3.9.1 in MODE 6, and the heatup or cooldown rate is restricted to 50°F or less in any one-hour period in MODE 5, or 2) addition of water from the RWST, provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2." ITS 3.8.10 Required Action A.2.3 requires the immediate suspension of operations involving positive reactivity "additions that could result in loss of required SDM or boron concentration." This changes the CTS compensatory actions by deleting the limitation on the heatup and cooldown rates of 50°F or less in any one hour period in MODE 5 and allows the addition of water from any source including the RWST as long as SDM and boron concentration limitations are met.

The purpose of the CTS 3.8.2.2 Action a and CTS 3.8.2.4 Action a is to suspend any positive reactivity additions that could affect the SDM of the reactor core. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the repair period. The CTS allows two types of positive reactivity changes (heatup/cooldown and addition of water). Heatup and cooldown of the reactor coolant volume are allowed provided SDM is sufficient to accommodate the change in temperature in accordance with CTS 3.1.1.2 in MODE 5 or CTS 3.9.1 in MODE 6. The requirements of these Specifications are included in ITS LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," and ITS LCO 3.9.1, "Boron Concentration," respectively. Therefore, there is no technical change in this portion of the change. The Bases provides the appropriate cross-reference to the appropriate LCOs. The CTS also allows positive reactivity changes by the addition of water from the RWST provided the boron concentration in the RWST is greater than or equal to the minimum required by CTS 3.1.2.7.b.2. CTS 3.1.2.7.b.2 has been relocated to the TRM as indicated in the Discussion of Changes for CTS LCO 3/4.1.2.7. CTS 3/4.1.2.7 is applicable during MODE 5 and 6 operations. The proposed Required Actions require the suspension of operations involving positive reactivity additions that could result in loss of required SDM or boron concentration. The requirements for SDM are specified in ITS LCO 3.1.1 while the requirements for boron concentration are specified in ITS LCO 3.9.1. The current and proposed actions may result in an overall reduction in SDM or RCS boron concentration, but provide acceptable margin to maintaining subcritical operation. The CTS compensatory action restricted the heatup and cooldown rates of the RCS to 50°F or less in any one-hour period in MODE 5. This limitation has been deleted. The proposed Required Action is to suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration. These limitations are considered acceptable. The Bases also indicate that introduction of temperature changes including temperature increases when operating with a positive moderator temperature coefficient must be evaluated to ensure they do not result in a loss of required SDM. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

CTS

3.8 ELECTRICAL POWER SYSTEMS

3.8.10 Distribution Systems - Shutdown

LCO 3.8.2.3, LCO 3.8.2.4

LCO 3.8.10 The necessary portion(s) of the AC, DC, and 120V AC vital bus electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE.

INSERT 1 (Unit 2 only)

(1) (2) (3)

APPLICABILITY: MODES 5 and 6,
During movement of recently irradiated fuel assemblies.

INSERT 1A (5)

ACTIONS

- NOTE -

LCO 3.0.3 is not applicable.

3.8.2.2 Action, 3.8.2.4 Action

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required AC, DC, or 120V AC vital bus electrical power distribution subsystems inoperable.	A.1 Declare associated supported required feature(s) inoperable.	Immediately (2)
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2.2 Suspend movement of recently irradiated fuel assemblies.	Immediately (4)
	AND	
	A.2.3 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	AND	

1 **INSERT 1**
(Unit 2 only)

DOC A.3 and the Unit 1 AC electrical power distribution subsystem

5 **INSERT 1A**

in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

CTS

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
3.8.2.2 Action, 3.8.2.4 Action	A.2.4 Initiate actions to restore required AC, DC, and AC 120 V vital bus electrical power distribution subsystems to OPERABLE status.	Immediately
	AND	
	A.2.5 Declare associated required residual heat removal subsystem(s) inoperable and not in operation.	Immediately

2

INSERT 1 3 <Unit 2 only>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
4.8.2.2, 4.8.2.4.1 SR 3.8.10.1	Verify correct breaker alignments and voltage to required AC, DC, and 120 V AC vital bus electrical power distribution subsystems.	7 days

2

INSERT 3A <Unit 2 only> 3

INSERT 3 <Unit 2 only> 3

5 **INSERT 2**
(Unit 2 only)

(including the Unit 1 electrical power distribution subsystem)

5 **INSERT 3**

, and 120 VAC vital bus

5 **INSERT 4**

in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

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JUSTIFICATION FOR DEVIATIONS
ITS 3.8.10, DISTRIBUTION SYSTEMS - SHUTDOWN

1. Typographical/grammatical error corrected.

2. Changes have been made to be consistent with changes made in other Specifications.

3. Additional requirements have been added to ISTS LCO 3.8.10 for Unit 2 to ensure that the appropriate Unit 1 electrical power distribution subsystem is OPERABLE during the movement of irradiated fuel assemblies in the auxiliary building. This modification was necessary since the Fuel Handling Area Exhaust Ventilation (FHAEV) System is powered by Unit 1 AC electrical power distribution subsystems. In addition, ITS 3.8.10 ACTION B for Unit 2 has been added to cover the situation when the required Unit 1 AC electrical power distribution subsystem is inoperable.

4. The brackets are removed and the proper plant specific information/value is provided.

5. The Applicability has been clarified, since CNP has two units and irradiated fuel movement can occur in three different locations.

Improved Standard Technical Specifications (ISTS) Bases Markup and Justification for Deviations (JFDs)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.10 Distribution Systems - Shutdown

BASES (2)

120V

BACKGROUND

A description of the AC, DC, and 120V AC vital bus electrical power distribution systems is provided in the Bases for LCO 3.8.9, "Distribution Systems - Operating."

APPLICABLE SAFETY ANALYSES

14

The initial conditions of Design Basis Accident and transient analyses in ~~the FSAR, Chapter [6] (Ref. 1) and~~ Chapter [15] (Ref. 2), assume Engineered Safety Feature (ESF) systems are OPERABLE. The AC, DC, and 120V AC vital 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. (1) (1) (2) (2) (2)

The OPERABILITY of the AC, DC, and 120V AC vital bus electrical power distribution system is consistent with the initial assumptions of the accident analyses and the requirements for the supported systems' OPERABILITY.

(5) INSERT 1

The OPERABILITY of the minimum AC, DC, and 120 V AC vital bus electrical power distribution subsystems during MODES 5 and 6, and during movement of ~~[recently]~~ irradiated fuel assemblies, ensures that: (2) (2)

a. The unit can be maintained in the shutdown or refueling condition for extended periods; (3)

b. Sufficient instrumentation and control capability is available for monitoring and maintaining the unit status; ~~and~~ . (3)

c. Adequate power is provided to mitigate events postulated during shutdown, such as a fuel handling accident ~~[involving handling recently irradiated fuel. Due to radioactive decay, AC and DC electrical power is only required to mitigate fuel handling accidents involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [ ] days)]~~. (1) (1)

The ~~AC and DC electrical power distribution systems~~ Distribution Systems – Shutdown satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii). (2)

5 **INSERT 1**

In the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

BASES

LCO

Various combinations of subsystems, equipment, and components are required OPERABLE by other LCOs, depending on the specific ~~plant~~ unit condition. Implicit in those requirements is the required OPERABILITY of necessary support required features. This LCO explicitly requires energization of the portions of the electrical power distribution system necessary to support OPERABILITY of required systems, equipment, and components - all specifically addressed in each LCO and implicitly required via the definition of OPERABILITY. INSERT 2 (2) (7) (5) (7) (5)

Maintaining these portions of the distribution system energized ensures the availability of sufficient power to operate the unit in a safe manner to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents (involving handling recently irradiated fuel)). (1)

APPLICABILITY

INSERT 3 (7)

The AC and DC electrical power distribution subsystems required to be OPERABLE in MODES 5 and 6, and during movement of (recently) irradiated fuel assemblies, provide assurance that: (5) (7) (1)

INSERT 4 (5)

a. Systems to provide adequate coolant inventory makeup are available for the irradiated fuel in the core; (3)

b. Systems needed to mitigate a fuel handling accident (involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [ ] days)) are available; (1) (3)

c. Systems necessary to mitigate the effects of events that can lead to core damage during shutdown are available; and (3)

d. Instrumentation and control capability is available for monitoring and maintaining the unit in a cold shutdown condition and refueling condition. (2)

The AC, DC, and 120 V AC vital bus electrical power distribution subsystems requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.9.

ACTIONS

LCO 3.0.3 is not applicable while in MODE 5 or 6. However, since irradiated fuel assembly movement can occur in MODE 1, 2, 3, or 4, the ACTIONS have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 5 or 6, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, 3, or 4, the fuel movement is independent of reactor operations. Entering LCO 3.0.3, while in MODE 1, 2, 3, or 4 would require the unit to be shutdown unnecessarily.

5

INSERT 2
(Unit 2 only)

(including the Unit 1 electrical power distribution subsystem)

5

INSERT 3

, and 120 VAC vital bus

5

INSERT 4

in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

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BASES

ACTIONS (continued)

A.1, A.2.1, A.2.2, A.2.3, A.2.4, and A.2.5

Although redundant required features may require redundant trains of electrical power distribution subsystems to be OPERABLE, one OPERABLE distribution subsystem train may be capable of supporting sufficient required features to allow continuation of CORE ALTERATIONS and recently irradiated fuel movement. By allowing the option to declare required features associated with an inoperable distribution subsystem inoperable, appropriate restrictions are implemented in accordance with the affected distribution subsystem LCO's Required Actions. In many instances, this option may involve undesired administrative efforts. Therefore, the allowance for sufficiently conservative actions is made (i.e., to suspend CORE ALTERATIONS, movement of recently irradiated fuel assemblies, and operations involving positive reactivity additions that could result in loss of required SDM (Mode 5) or boron concentration (Mode 6). Suspending positive reactivity additions that could result in failure to meet the minimum SDM or boron concentration limit is required to assure continued safe operation. Introduction of coolant inventory must be from sources that have a boron concentration greater than that what would be required in the RCS for minimum SDM or refueling boron concentration. This may result in an overall reduction in RCS boron concentration, but provides acceptable margin to maintaining subcritical operation. Introduction of temperature changes including temperature increases when operating with a positive MTC must also be evaluated to ensure they do not result in a loss of required SDM.

(1) (8) INSERT 5 (6) INSERT 6 (8) (6) (4) moderator temperature coefficient

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

(3) (5) s and 120 VAC vital bus

Notwithstanding performance of the above conservative Required Actions, a required residual heat removal (RHR) subsystem may be inoperable. In this case, Required Actions A.2.1 through A.2.4 do not adequately address the concerns relating to coolant circulation and heat removal. Pursuant to LCO 3.0.6, the RHR ACTIONS would not be entered. Therefore, Required Action A.2.5 is provided to direct declaring RHR inoperable, which results in taking the appropriate RHR actions.

8 **INSERT 5**

specified in LCO 3.1.1, "SHUTDOWN MARGIN (SDM),"

8 **INSERT 6**

specified in LCO 3.9.1, "Boron Concentration")

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BASES

ACTIONS (continued)

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

5 INSERT 7 ⟨Unit 2 only⟩

SURVEILLANCE REQUIREMENTS

SR 3.8.10.1

120 V 5

This Surveillance verifies that the AC, DC, and AC vital bus electrical power distribution subsystems are functioning properly, with all the buses energized. The verification of proper voltage availability on the buses ensures that the required power is readily available for motive as well as control functions for critical system loads connected to these buses. The 7 day Frequency takes into account the capability of the electrical power distribution subsystems, and other indications available in the control room that alert the operator to subsystem malfunctions.

INSERT 7A ⟨Unit 2 only⟩

2

REFERENCES

1. ~~FSAR, Chapter [6].~~

1 2. 1 FSAR, Chapter ~~[15]~~ 14. 1 2

5

INSERT 7
(Unit 2 only)

B.1

When the Fuel Handling Area Exhaust Ventilation (FHAEV) System is required to be OPERABLE, and the required Unit 1 AC electrical power distribution subsystem is inoperable, the minimum required electrical power is not available. It is therefore required to declare the FHAEV System inoperable. Since the Unit 1 AC electrical power distribution subsystem only affects the FHAEV System, the associated portions of the FHAEV System are declared inoperable and the applicable ACTIONS of LCO 3.7.13, "Fuel Handling Area Exhaust Ventilation (FHAEV) System," are entered.

5

INSERT 7A
(Unit 2 only)

Since the Unit 1 AC electrical power distribution subsystem only affects the FHAEV System, the SR is modified by a Note that specifies the SR is not required to be met for the Unit 1 AC electrical power distribution subsystem when the associated FHAEV System is not required to be OPERABLE per LCO 3.7.13.

JUSTIFICATION FOR DEVIATIONS
ITS 3.8.10 BASES, DISTRIBUTION SYSTEMS - SHUTDOWN

1. The brackets have been removed and the proper plant specific information/value has been provided.
2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases, which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.
3. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.
4. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 3.2.2.
5. Changes are made to reflect changes made to the Specification.
6. Grammatical/spelling error corrected.
7. Changes are made to be consistent with the Specification.
8. Changes are made to be consistent with other places in the Bases.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.8.10, DISTRIBUTION SYSTEMS - SHUTDOWN

There are no specific NSHC discussions for this Specification.

ATTACHMENT 11

Relocated/Deleted Current Technical Specifications (CTS)

CTS 3/4.8.3, Alternative A.C. Power Sources

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

CTS 3/4.8.3

LA.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.3 Alternative A.C. Power Sources

LIMITING CONDITION FOR OPERATION

3.8.3.1 The steady state bus voltage for the manual alternate reserve source* shall be greater than or equal to 90% of the nominal bus voltage.

APPLICABILITY: Whenever the manual alternate reserve source (69 kV) is connected to more than two buses.

ACTION: With bus voltage less than 90% nominal, adjust load on the remaining buses to maintain steady state bus voltage greater than or equal to 90% limit.

SURVEILLANCE REQUIREMENTS

4.8.3.1 No additional surveillance requirements other than those required by Specifications 4.8.1.1.1 and 4.8.1.2.

*Shared with D.C. Cook Unit 2.

CTS 3/4.8.3

LA.1

3/4.0 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.3 Alternative A.C. Power Sources

LIMITING CONDITION FOR OPERATION

3.8.3.1 The steady state bus voltage for the manual alternate reserve source* shall be greater than or equal to 90% of the nominal bus voltage.

APPLICABILITY: Whenever the manual alternate reserve source (69 kV) is connected to more than two buses.

ACTION: With bus voltage less than 90% nominal, adjust load on the remaining buses to maintain steady state bus voltage greater than or equal to 90% limit.

SURVEILLANCE REQUIREMENTS

4.8.3.1 No additional surveillance requirements other than those required by Specifications 4.8.1.1.1 and 4.8.1.2.

*Shared with Cook Nuclear Plant Unit 1.

COOK NUCLEAR PLANT-UNIT 2 Page 3/4 8-19 AMENDMENT ~~112~~, ~~151~~, 183

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DISCUSSION OF CHANGES
CTS 3/4.8.3, ALTERNATIVE A.C. POWER SOURCES

ADMINISTRATIVE CHANGES

None

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA.1 *(Type 6 – Relocation of LCO, SR, or other TS requirement to the TRM, UFSAR, ODCM, QAPD, or IIP)* CTS LCO 3.8.3.1 requires the steady state bus voltage for the manual alternate reserve source (i.e., a qualified offsite source) to be greater than or equal to 90% of the nominal bus voltage whenever the manual alternate reserve source (69 kV) is connected to more than two buses. The CTS 3.8.3.1 Action covers the situation when the bus voltage is less than 90% nominal. The action is to adjust the load on the remaining buses to maintain steady state bus voltage greater than or equal to 90% limit. The ITS does not include the requirements for the steady state bus voltage for the manual alternate reserve source. This changes the CTS by moving the explicit requirements for the steady state bus voltage for the manual alternate reserve source, including the Action and Surveillance Requirement, from the Technical Specifications to the Technical Requirements Manual (TRM).

The removal of these details from the Technical Specifications is acceptable because this type of information is not necessary to provide adequate protection of public health and safety. The purpose of CTS LCO 3.8.3.1 is to ensure the steady state bus voltage for the manual alternate reserve source is greater than 90% of the nominal bus voltage whenever the manual alternate reserve source (69 kV) is connected to more than two buses. ITS SR 3.8.9.1 and SR 3.8.10.1 require the verification of correct breaker alignments and voltage to each required 4.16 kV emergency bus every 7 days. This Surveillance will continue to ensure the proper voltage is available on each bus when the auxiliary, preferred, or alternate reserve source is supplying the associated bus. If the bus voltage is not adequate, then the bus will be declared inoperable and the appropriate Technical Specification Conditions and Required Action will be entered. These Technical Specification requirements are sufficient to ensure the buses are OPERABLE with the appropriate voltages regardless of the source of supply. These requirements are proposed to be relocated to the TRM since the Technical Specifications provides the appropriate requirements on AC Sources and the distribution system to ensure the 4.16 kV emergency buses are energized to the appropriate voltage. This change is acceptable because the removed information will be adequately controlled in the TRM. The TRM is incorporated by reference into the UFSAR and any changes to the TRM are

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DISCUSSION OF CHANGES
CTS 3/4.8.3, ALTERNATIVE A.C. POWER SOURCES

made under 10 CFR 50.59, which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because information is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

None

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
CTS 3/4.8.3, ALTERNATIVE A.C. POWER SOURCES

There are no specific NSHC discussions for this Specification.