VOLUME 12

CNP UNITS 1 AND 2
IMPROVED TECHNICAL SPECIFICATIONS CONVERSION

ITS SECTION 3.7
PLANT SYSTEMS

Revision 0

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.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

Add proposed ACTIONS Note A.2

Add proposed Required Action A.2 Note L.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 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 B action statement b.

M.1 36 L.2 A.3

Add proposed Required Action A.1 A.4

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

ACTION B are opened; otherwise, be in HOT SHUTDOWN within the next 30 hours.

M.1 A.3 M.1 12

c. The provisions of Specification 3.0.4 are not applicable. A.5

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

Table 3.7.1-1

TABLE 3.7-1

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

A.4

~~Maximum~~ Number of ~~I~~noperable 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.1

ITS

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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

ITS 3.7.1

A.1

ITS

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.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

Add proposed ACTIONS Note A.2

Add proposed Required Action A.2 Note L.1

ACTION A

ACTION B

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

Add proposed Required Action A.1 A.4

ACTION A

ACTION B

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

~~c. The provisions of Specification 3.0.4 are not applicable.~~ A.5

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

TABLE 3.7-1

Table 3.7.1-1

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

~~Maximum~~ Number of ~~In~~operable 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

A.1

ITS

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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

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 CTS 3.7.1.1 Action c states "The provisions of Specification 3.0.4 are not applicable." CTS 3.0.4 states "Entry into an OPERATIONAL MODE or other specified applicability condition shall not be made unless the conditions of the Limiting Condition for Operation are met without reliance on provisions contained in the ACTION statements unless otherwise excepted." ITS 3.7.1 does not contain the exception to ITS LCO 3.0.4, since ITS LCO 3.0.4 states that when an LCO is not met, entry into a MODE or other specified condition in the Applicability may be made when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time. This changes the CTS by deleting an allowance that is incorporated into ITS LCO 3.0.4.

This change is considered acceptable because ITS LCO 3.0.4 has been changed such that the CTS allowance is not required to retain the same CTS requirement. ITS 3.7.1 ACTIONS allow continued operation for an unlimited period of time, which together with ITS LCO 3.0.4, result in the same technical requirements as the CTS. This change is designated as administrative because it does not result in any technical changes to the CTS.

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

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

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.

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

LESS RESTRICTIVE CHANGES

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, 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.

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 3.7.1.1

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

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~~ ②
Action a (A) → ~~B~~. One or more steam generators with ~~two~~ one or more MSSVs inoperable. ~~[OR~~ ~~One or more steam generators with one MSSV inoperable and the MTC positive at any power level.]*~~	~~B~~.1 (A) 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

CTS

ACTIONS (continued)

Action a

CONDITION	REQUIRED ACTION	COMPLETION TIME
	- NOTE - Only required in MODE 1. B.2 (A) 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
C. (B) Required Action and associated Completion Time not met. OR One or more steam generators with ≥ [4] MSSVs inoperable.	C.1 Be in MODE 3. AND (B) C.2 Be in MODE 4.	6 hours 12 hours

②

Action a and b

②

SURVEILLANCE REQUIREMENTS

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

4.7.1.1

③

CTS

Table 3.7-1

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) ①
3	[46] 45.5 (Unit 1) and 43.0 (Unit 2)
2	[28] 27.4 (Unit 1) and 25.7 (Unit 2)

GTS
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~~]~~%) ①
STEAM GENERATOR				
#1	#2	~~[~~#3~~]~~	~~[~~#4~~]~~	①
~~[ ]~~	~~[ ]~~	~~[ ]~~	~~[ ]~~	~~[ ]~~
~~[ ]~~	~~[ ]~~	~~[ ]~~	~~[ ]~~	~~[ ]~~ ①
~~[ ]~~	~~[ ]~~	~~[ ]~~	~~[ ]~~	~~[ ]~~
~~[ ]~~	~~[ ]~~	~~[ ]~~	~~[ ]~~	~~[ ]~~

INSERT 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).

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.

10.2.2 steam generator stop ②

Five MSSVs are located on each main steam header, outside containment, upstream of the main steam isolation valves, as described ~~in the~~ FSAR, Section 10.3.1 (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

transient

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~~ (AOO) or accident considered in the Design Basis Accident (DBA) and transient analysis. ②

14.1

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 (Ref. 3). Of these, the full power turbine trip without steam dump is ~~typically~~ the limiting AOO. This event also terminates normal feedwater flow to the steam generators.

④ ② ① ②

anticipated
operational
transient

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 INSERT 1 ②
(,) 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 INSERT 2 ②
trip, assuming no credit for operation of the ~~atmospheric~~ or condenser steam dump valves. The (11) FSAR Section ~~15.4~~ 14.1.2 (Ref. 4) ① ② 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~~ anticipated operational transient. ②

(11) The FSAR safety analyses discussed above assume that all of the MSSVs for each steam generator are OPERABLE. ② If there are inoperable MSSV(s), it is necessary to limit the primary system power during steady-state operation and ~~AOOs~~ ② to a value that does not result in exceeding the combined steam flow capacity of the turbine (if available) and the remaining OPERABLE MSSVs. INSERT 3 The required limitation on (5) primary system power necessary to prevent secondary system ② overpressurization ~~may be determined by system transient analyses or~~ INSERT 4 ~~conservatively arrived at by a simple heat balance calculation~~. ~~In some circumstances~~ additional it is necessary to limit the primary side heat generation that can be achieved during an ~~AOO~~ anticipated operational transient 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 (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

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):~~

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

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

Ⓐ B.1 and B.2 ⑤

With one or more

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. 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 Ⓐ

INSERT 5

INSERT 5A

a Completion Time of 36

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 ⑤ Reference 6, with an appropriate allowance for Nuclear Instrumentation System trip channel uncertainties. 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

Ⓐ 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~~ Trip System trips specified in LCO 3.3.1, "Reactor Trip System Instrumentation," provide sufficient protection. 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

Ⓑ C.1 and C.2 ⑦

If ~~the~~ any Required Action**s** and ~~are not completed within the~~ associated Completion Time is not met, 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.

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) ⑦. ~~According to Reference 5, the following tests are required:~~ ⑥ ② ⑦ ②

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~a. Visual examination,~~

~~b. Seat tightness determination,~~

~~c. Setpoint pressure determination (lift setting),~~ ⑦

~~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. 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. (U)FSAR, 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. (U)FSAR, Section ~~[15.2]~~. 14.1 ② ①

INSERT 6 ②

⑥ → ~~4~~. ASME, Boiler and Pressure Vessel Code, Section XI. ②

⑦ → ~~5~~. ANSI/ASME OM-1-1987.

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.

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.

ATTACHMENT 2

ITS 3.7.2, Steam Generator Stop Valves (SGSVs)

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

ITS

A.1

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:

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; — M.1

ACTION B — 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 — 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.

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

~~The provisions of Specification 3.0.4 are not applicable.~~ — A.3

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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A.1

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A.1

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ITS

A.1

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:

MODE 1 -

ACTION A — 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; — M.1

ACTION B — 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

MODES 2 - and 3

ACTION C — 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.

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

~~The provisions of Specification 3.0.4 are not applicable.~~ — A.3

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

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 The CTS 3.7.1.5 Action for MODES 2 and 3 requires entry when one or more steam generator stop valves are inoperable. An allowance is also specified that the provisions of Specification 3.0.4 are not applicable for entry into MODE 2 or 3. CTS 3.0.4 states "Entry into an OPERATIONAL MODE or other specified applicability condition shall not be made unless the conditions of the Limiting Condition for Operation are met without reliance on provisions contained in the ACTION statements unless otherwise excepted." ITS 3.7.2 ACTION C does not specify this allowance, since ITS LCO 3.0.4 states that when an LCO is not met, entry into a MODE or other specified condition in the Applicability may be made when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time. This changes the CTS by not explicitly specifying that the provisions of LCO 3.0.4 are not applicable for entry into MODE 2 or 3.

This change is considered acceptable because ITS LCO 3.0.4 has been changed such that the CTS allowance is not required to retain the same CTS requirement. ITS 3.7.2 ACTION C allows continued operation for an unlimited period of time, which together with ITS LCO 3.0.4, result in the same technical requirements as the CTS. This change is designated as administrative because it does not result in any technical changes to the CTS.

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 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.

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)

CTS

3.7 PLANT SYSTEMS

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

3.7.1.5

LCO 3.7.2 [Four] MSIVs SGSV shall be OPERABLE. 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	
	SGSV			
Action MODE 1	A. One MSIV 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	

①

CTS

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
4.7.1.5.1, 4.7.1.5.2	SR 3.7.2.1	- NOTE - Only required to be performed in MODES 1 and 2. Verify the isolation time of each MSIV is ≤ [4.6] seconds. SGSV ⑧	In accordance with the Inservice Testing Program	① ②
DOC M.2	SR 3.7.2.2 SGSV	- NOTE - Only required to be performed in MODES 1 and 2. Verify each MSIV actuates to the isolation position on an actual or simulated actuation signal.	24 [18] months	①②

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)

B 3.7 PLANT SYSTEMS

B 3.7.2 ~~Main Steam Isolation~~ Steam Generator Stop Valves (~~MSIVs~~ SGSVs) ①

BASES

BACKGROUND

The ~~MSIVs~~ SGSVs are used to 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.~~ ①

One ~~MSIV~~ SGSV is located in each main steam line outside, but close to, containment. The ~~MSIVs~~ SGSVs 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~~ SGSV closure. Closing the ~~MSIVs~~ SGSVs isolates each steam generator from the others, and isolates the turbine, Steam Bypass System, and other auxiliary steam supplies from the steam generators. ①

The ~~MSIVs~~ SGSVs close on a ~~main steam~~ Steam generator isolation signal generated by ~~either low steam generator pressure or high containment pressure~~ INSERT 1. The ~~MSIVs~~ SGSVs fail closed on loss of control ~~or actuation~~ power. INSERT 1A ①

~~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.~~ ①

A description of the ~~MSIVs~~ SGSVs is found in the ④ FSAR, Section ~~[~~10.~~3]~~ (Ref. 1). ② ① ②

APPLICABLE SAFETY ANALYSES

The design basis of the ~~MSIVs~~ SGSVs 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]~~ 14.2.5 (Ref. ~~3~~ ②). The design precludes the blowdown of more than one steam generator, assuming a single active component failure (e.g., the failure of one ~~MSIV~~ SGSV to close on demand). INSERT 1B ① ②

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~~ SGSV on the affected steam generator to close. INSERT 1C ~~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 ① ③

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

(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 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)

SGSV

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

~~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.~~

(3)

~~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**

during a SLB, steam generator tube rupture, and (Unit 2 only) feedwater line break.

BASES

APPLICABLE SAFETY ANALYSES (continued)

③

~~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.~~

~~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 ~~MSIV~~s satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

SGSV

This LCO requires that ~~[four]~~ ~~MSIV~~s in the steam lines be OPERABLE. ② ①

SGSV

The ~~MSIV~~s 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 ~~MSIV~~s will perform their design safety function to mitigate the consequences of accidents that could result in offsite exposures comparable to ~~(the)~~ a small fraction of 10 CFR 100 (Ref. ~~4~~ 3) limits ~~or the NRC staff approved licensing basis~~. ① ①

APPLICABILITY

SGSV

The ~~MSIV~~s 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 ~~MSIV~~s are closed, they are already performing the safety function. ① ⑤ ①

SGSV

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

SGSV

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 ~~MSIV~~s are not required for isolation of potential high energy secondary system pipe breaks in these MODES. ①

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~~ SGSV 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 ~~MSIV~~s. SGSV ① ① ② ② ①

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

①

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

If the MSIV SGSV 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 Time ~~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 SGSV. ①

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 SGSV are already in the position required by the assumptions in the safety analysis. ④ ①

The [8] hour Completion Time is consistent with that allowed in Condition A. ②

For inoperable MSIVs SGSV 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 ④ ①

D.1 and D.2

If the MSIVs SGSV ~~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

S6SV 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

S6SV 8 S6SV

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 S6SV 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

S6SV ①

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. 24 ① ② ① ②

S6SV

equipment reliability

24

REFERENCES

1. UFSAR, Section [10.3]. 10.2 ① ②

2. FSAR Section [6.2]. ①

② 3. UFSAR, Section [15.1.5]. 14.2.5 ① ②

③ 4. 10 CFR 100.11. ①

SGSV ①

BASES

REFERENCES (continued)

④ [illegible] 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.

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.

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

← Add proposed ITS 3.7.3

Ⓜ.1

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

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

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

or

DOC M.1 APPLICABILITY: MODES 1, [and 2] [2, and 3] except when MFIV, 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.

DOC M.1

DOC M.1

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

CTS

ACTIONS (continued) MFIV and MFRV ①

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

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]~~ 44 seconds.	In accordance with the Inservice Testing Program ① ②
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]~~ 24 months ① ②

INSERT 1 ③

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

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

INSERT 1

INSERT 2

(1)

Unit 2 only

Unit 2 only

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.

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 W 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.~~ 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) (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

INSERT 4

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)

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⟩

Since

Water

High High

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 a feedwater isolation signal on high steam generator level 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)

① **INSERT 3A**

The MFRVs are assumed to close following a large SLB to limit the resulting 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

INSERT 5

INSERT 6

The MFIVs and MFRVs ~~and the associated bypass valves~~ must be OPERABLE whenever there is significant mass and energy in the Reactor Coolant System and steam generators. This ensures that, in the event of an 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 ② ① ①

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 or more MFIVs ~~in one~~ 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 or more MFRVs ~~in one~~ 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 (Unit 2 only) or SLB

① **INSERT 6**

FWLB (Unit 2 only) or SLB

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

With ~~two~~ both the MFIV and MFRV inoperable ~~valves~~ in the same flow path, there ~~may be~~ is 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

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 (4), 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. (2)

SURVEILLANCE REQUIREMENTS

SR 3.7.3.1 and SR 3.7.3.2 (4)

~~This SR verifies~~ These SRs verify (5) (4) that the closure time of each MFIV ~~,~~ and MFRV ~~, and [associated bypass valve]~~ is ≤ ~~[7]~~ 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.~~2~~ 3 (4)

This SR verifies that each MFIV ~~,~~ and 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

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.

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

Add proposed ITS 3.7.4

M.1

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

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

CTS

SG PORV ADVs ①
3.7.4

3.7 PLANT SYSTEMS

INSERT 1 ①

3.7.4 ~~Atmospheric Dump Valves (ADVs)~~

DOC M.1 ② ①

LCO 3.7.4 ~~Three~~ Four ~~ADV lines~~ SG PORVs shall be OPERABLE. ③

INSERT 2 ④

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

ACTIONS

DOC M.1 ① ③ ① ③ ④ ①

DOC M.1 ③ ④

DOC M.1 ②

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One ~~required ADV line~~ SG PORV inoperable in MODE 1, 2, or 3.	A.1 ------------------------- - NOTE - LCO 3.0.4 is not applicable. ------------------------- Restore ~~required ADV line~~ SG PORV to OPERABLE status.	7 days
B. Two or more ~~required ADV lines~~ SG PORVs inoperable in MODE 1, 2, or 3.	B.1 Restore all but one ~~ADV line~~ SG PORV 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 4 without reliance upon steam generator for heat removal.	[24] hours

INSERT 3 ④

SURVEILLANCE REQUIREMENTS

DOC M.1 ②

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

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

CTS

①

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 and B 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)

①

B 3.7 PLANT SYSTEMS ①

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

BASES

BACKGROUND

The ~~ADV~~ SG PORVs 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 (a) FSAR, Section ~~10.3~~ 10.2.2 (Ref. 1). This is done in conjunction with the Auxiliary Feedwater System providing cooling water from the condensate storage tank (CST). The ~~ADVs~~ SG PORVs 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. ② ① ①

One ~~ADV~~ SG PORV line for each of the [four] steam generators is provided. Each ~~ADV~~ SG PORV line consists of one ~~ADV~~ SG PORV and an associated ~~block~~ isolation valve. ① ② ①

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

~~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

A description of the ~~ADV~~ SG PORVs 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

APPLICABLE SAFETY ANALYSES

The design basis of the ~~ADV~~ SG PORVs 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~~ INSERT 2A ① adequate to cool the unit to RHR entry conditions with only ~~one~~ three steam ③ generators and ~~one~~ associated ~~ADV~~ SG PORVs, utilizing the cooling water supply available in the CST. ①

In the accident analysis presented in Reference ~~3~~ ②, the ~~ADV~~ SG PORVs 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

①

BASES

APPLICABLE SAFETY ANALYSES (continued) ①

operator actions to cool down the unit, the SG PORV ~~ADV~~s 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 SG PORV ~~ADV~~s. ~~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.~~ INSERT 3 ①

The SG PORV ~~ADV~~s are equipped with ~~block~~ isolation valves in the event an SG PORV ~~ADV~~ spuriously fails ~~to~~ open or fails to close during use. ①

The SG PORVs ~~ADV~~s satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

Four ~~Three~~ SG PORVs ~~ADV lines~~ are ~~are required~~ to be OPERABLE. One SG PORV ~~ADV line~~ is required from each of four ~~three~~ steam generators to ensure that at least three ~~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 ② ④ ① ④ 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 Dump ~~Bypass~~ System. ①

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

APPLICABILITY

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

In MODE 5 or 6, an SGTR is not a credible event. ①

① **INSERT 3**

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

SG PORV ①

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 ①

B.1

isolation

SG PORVs

SG PORV

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.

SG PORVs

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

SURVEILLANCE REQUIREMENTS

SR 3.7.4.1

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 months

SG PORV

24

① ②

SG PORV

~~ADV~~s 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. UFSAR, 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.

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 shall be OPERABLE with:

LA.1

trains 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

train LA.1

ACTION B

ACTION C

a. With one auxiliary feedwater pump 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 hours.

18 L.3

train LA.1

ACTION C

b. With two auxiliary feedwater pumps inoperable, be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.

18

Add proposed Required Action D.1 Note L.4

ACTION D

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

train LA.1

Add proposed ACTION E M.1

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. The requirements of Specification 3.0.4 are not applicable.

L.1

A.1

ITS

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.

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

L.6 L.7 that is not locked, sealed, or otherwise secured in position

M.2 if capable of being manually realigned to the AFW mode of operation

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.

L.8 24

Add proposed SR 3.7.5.3 Note

SR 3.7.5.3 e. Verifying at least once per ~~18~~ 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.~~

LA.2 L.9 actual or

Add proposed SR 3.7.5.4 Note 2

L.8 24

Add proposed SR 3.7.5.4 Note 1

SR 3.7.5.4 f. Verifying at least once per ~~18~~ 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.~~

LA.2 L.9 actual or

L.1

~~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.5

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

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 shall be OPERABLE with:

LA.1 — LA.1 — trains — M.1 — Add proposed LCO Note

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 — train — LA.1

ACTION B / ACTION C — a. With one auxiliary feedwater pump 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 hours.

18 — L.3

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

LA.1 — train — 18

Add proposed Required Action D.1 Note — L.4

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

train — LA.1

Add proposed ACTION E — M.1

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. The requirements of Specification 3.0.4 are not applicable.

L.1

A.1

ITS

SURVEILLANCE REQUIREMENTS

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

L.5

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.

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

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.

A.3

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

L.6

M.2

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 level.

L.7

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

if capable of being manually realigned to the AFW mode of operation

Add proposed SR 3.7.5.3 Note

24

L.8

SR 3.7.5.3 e. Verifying at least once per 18 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.~~

LA.2

Add proposed SR 3.7.5.4 Note 2

actual or

L.9

24

L.8

SR 3.7.5.4 f. Verifying at least once per 18 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.~~

Add proposed SR 3.7.5.4 Note 1

LA.2

actual or

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;

- 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.

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 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

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

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

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 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)

CTS

3.7 PLANT SYSTEMS

3.7.5 Auxiliary Feedwater (AFW) System

LCO 3.7.1.2

LCO 3.7.5 [Three] AFW trains shall be OPERABLE. 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.

DOC M.1

ACTIONS

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]
B. One AFW train inoperable in MODE 1, 2, ③ or 3 [for reasons other than Condition A].	B.1 Restore AFW train to OPERABLE status.	72 hours AND [10 days from discovery of failure to meet the LCO]

DOC L.1

① ③

Action a

① ④

①

CTS

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. Required Action and associated Completion Time for Condition A [or B] not met. [<u>OR</u> Two AFW trains inoperable in MODE 1, 2, or 3.]	C.1 <u>AND</u> C.2	Be in MODE 3. [Be in MODE 4.	6 hours [18] hours]
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]
E. Required AFW train inoperable in MODE 4.	E.1	Initiate action to restore AFW train to OPERABLE status.	Immediately

Action a

Action b

Action c

DOC M.1

①

①

CTS

SURVEILLANCE REQUIREMENTS

CTS	SURVEILLANCE		FREQUENCY	
4.7.1.2.c,	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
4.7.1.2.d		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.		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

2. Only required to be met in MODES 1, 2, and 3. ⑥

CTS

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY	
4.7.1.2.f	SR 3.7.5.4	- NOTES - 1. [Not required to be performed for the turbine driven AFW pump until [24 hours] after ≥ ~~[1000]~~ 850 psig in the steam generator.] 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	① ① ⑥ ①
	~~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]~~	②

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.

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 ①

The AFW System automatically supplies main feedwater to the steam generators to remove decay heat from the Reactor Coolant System ~~upon~~ when the ~~loss of normal~~ feedwater supply. (RCS) ② 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 ② 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~~ dump valves and recirculated to the CST.

INSERT 2 ①

INSERT 3

INSERT 4 ②

① ②

INSERT 5

INSERT 6 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~~ The turbine driven AFW 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 ①

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)

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 ~~ADV~~s. SG PORV 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%.

INSERT 11A → 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 account ⑤ 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 . { Unit 1 only } ; and { Unit 2 only }

f. Major rupture of main feedwater pipe. { Unit 2 only }

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 INSERT 14 (1) to control the AFW flow to each steam generator.

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~~ independent discharge paths, 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 of the steam generators. The piping, valves, instrumentation, and controls ~~in the required flow paths~~ INSERT 14A also are required to be OPERABLE. (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

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.

ACTIONS <u>A.1</u> 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 <u>AND</u> connector between 7 days and 10 days

BASES

ACTIONS (continued)

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

Condition A is modified by a Note which limits the ③ applicability of the Condition to when the unit has ~~not~~ entered (is in) MODE ~~2~~ following a refueling. Condition A allows one (the turbine driven) 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

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. ③

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 <u>AND</u> 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 (associated) 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

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

③

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.

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

required

⑥

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. 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.

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

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 ⑥ ②

to an unacceptable level

Centrifugal

Verifying that each required 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 to an unacceptable level during the cycle. Flow and differential head are normal tests of ~~centrifugal~~ Centrifugal pump performance required by ~~Section XI of~~ the ASME OM 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 OM Code ~~Section XI~~ (Ref. 2) (only required at 3 month intervals) satisfies this requirement. OM ① ⑦ ⑦ ⑤ ①

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.

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)

two Notes. (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 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.] (3) (6) (4) (7) (2) (3) (6)

INSERT 15

~~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. (3) (6)

three may

This SR is modified by ~~a~~ ~~[two]~~ Note~~[s]~~. [Note 1 indicates that the SR be deferred INSERT 15A until suitable test conditions are established. This deferral is required because there is insufficient steam pressure to perform the test.] [~~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 allow 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) (3) (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~~ Condition of the AFW System. OPERABILITY (i.e., the intended safety function) continues to be maintained. INSERT 16 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. ⓤ 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)

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.

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.

ATTACHMENT 6

ITS 3.7.6, Condensate Storage Tank (CST)

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

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

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 within ~~the next 12~~ hours, or

MODE 3 within 6 hours

24

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 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

A.3

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~~.

LA.1

backup water supply

Required Action A.1 and second Completion Time

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

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. M.1 182,000

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

ACTION:

A.2 L.1

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

ACTION A / ACTION B — 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 without reliance on steam generator for heat removal

ACTION A — 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

ACTION B — within 7 days or be in HOT SHUTDOWN within the next 12 hours.

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 — 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.1 backup water supply

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 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 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.

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

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

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

Action a,
Action b

SURVEILLANCE REQUIREMENTS

3.7.1.3,
4.7.1.3.1

SURVEILLANCE		FREQUENCY
SR 3.7.6.1	Verify the CST [level] is ≥ [110,000] 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.

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

B 3.7 PLANT SYSTEMS

B 3.7.6 Condensate Storage Tank (CST)

BASES ②

BACKGROUND

The CST provides a ~~safety grade~~ qualified source of water to the steam generators for removing decay 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) INSERT 1 ①. The steam produced is released to the atmosphere by the main steam safety valves (MSSVs) ~~or the atmospheric dump valves~~. INSERT 2 ① The AFW pumps ~~operate with a continuous recirculation~~ INSERT 3 to the CST. ②

When the ~~main steam isolation~~ INSERT 4 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~~ dump valves. The condensed steam ~~is~~ may be returned to the CST by the ~~condensate transfer~~ hotwell pump. ~~This has the advantage of conserving condensate while minimizing releases to the environment.~~ 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~~ and. The CST is designed to Seismic Category I ~~to~~ ensures availability of the auxiliary feedwater supply. Auxiliary Feedwater is also available from alternate sources INSERT 5. ② ②

A description of the CST is found in the UFSAR, Section ~~9.2.6~~ 10.5.2 (Ref. 1). 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 UFSAR, Chapters ~~6 and 15~~ 14 (Ref. 2 ~~and 3, respectively~~). For anticipated operational ~~occurrences~~ transients and accidents that do not affect the OPERABILITY of the steam generators, the analysis assumption is ~~generally 30 minutes~~ 2 hours at MODE 3, steaming through the MSSVs, steam dump valves, or SG PORVs followed by a cooldown to residual heat removal (RHR) entry conditions at the ~~design~~ cooldown rate of 50°F/hr. ② ③ ② ②

~~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~~

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.

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 the more limiting of either holding the unit in MODE 3 for ~~[2]~~ ⑨ hours, followed by a cooldown to RHR entry conditions at [75]°F/hour. INSERT 8 This basis is established ~~in~~ to satisfy the Reference ~~4~~ ③ ~~and exceeds the volume~~ required by the accident analysis. INSERT 9

②

INSERT 7A

The OPERABILITY of the CST is determined by maintaining the tank ~~level~~ volume at or above the minimum required ~~level~~ volume.

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,

② **INSERT 7**

In addition, Reference 3 describes the applicable accident analysis for a loss of offsite power event. This analysis also includes an initial condition of 100.34% RTP. This analysis requires maintaining the RCS at MODE 3 and does not require the cool down of the RCS to RHR entry conditions. Therefore, the CST must also contain sufficient cooling water to remove the metal and water sensible heat in the RCS from 100.34% RTP to a nominal no-load condition, and then remove decay heat while maintaining the no-load condition for 9 hours.

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**

(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.

② 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. ~~FSAR, Chapter [6].~~

② ③
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 Essential Service Water 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

BASES

REFERENCES (continued)

② 4. UFSAR, 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.

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)

ITS

A.1

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

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 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
ACTION B be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the 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. The requirements of Specification 3.0.4 are not applicable. L.1

SURVEILLANCE REQUIREMENTS

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

Add proposed SR 3.7.7.1 Note A.2

SR 3.7.7.1 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 that is not locked, sealed, or otherwise secured in position, is in its correct position. A.3

L.2

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

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

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

A.1

ITS

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ITS

A.1

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

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
ACTION B or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the 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. The requirements of Specification 3.0.4 are not applicable. 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) in the flow path servicing safety related equipment that is not locked, sealed, or otherwise secured in position, is in its correct position. A.3

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. 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

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.

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.

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

3.7.3.1a Action

3.7.3.1.a Action

CONDITION	REQUIRED ACTION		COMPLETION TIME
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
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

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 months ㉔	②
DOC M.2	SR 3.7.7.3	Verify each CCW pump starts automatically on an actual or simulated actuation signal.	⑱ months ㉔	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 Essential Service Water System (ESW), and thus to the environment. 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. a common An open surge tank in the system INSERT 1 ~~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, INSERT 2 and ~~all~~ certain nonessential components are isolated. INSERT 3 ① ① ①

Additional information on the design and operation of the system, along with a list of the components served, is presented in the UFSAR, Section ~~[9.2.2]~~ 9.5 (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. ① ②

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 range of the CCW is ~~[80]°F~~ between 60°F to 105°F, and, during unit cooldown to MODE 5 (T_{cold} avg ≤ [200]°F), a maximum temperature of ~~[95]°F~~ 120 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

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 ① ②
and post accident operations. The time required to cool from [350]°F to ②
[200]°F is a function of the number of CCW and RHR trains operating. ②
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

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.

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.

ATTACHMENT 8

ITS 3.7.8, Essential Service Water (ESW) System

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

A.1

ITS

3/4.7.4 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
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.

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 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. M.3

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. The requirements of Specification 3.0.4 are not applicable. L.1

SURVEILLANCE REQUIREMENTS

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

Add proposed SR 3.7.8.1 Note A.2

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. A.3

in the flow path

24 L.2

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. A.3 LA.2

in the flow path

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

actual or 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

A.1

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.

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. M.3

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. The requirements of Specification 3.0.4 are not applicable. L.1

SURVEILLANCE REQUIREMENTS

4.7.4.1 At least two essential service water loops shall be demonstrated OPERABLE: Add proposed SR 3.7.8.1 Note A.2

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 that is not locked, sealed, or otherwise secured in position, is in its correct position. A.3 L.2 A.3

SR 3.7.8.2 b. At least once per 24 18 months by verifying that each automatic valve in the flow path servicing safety related equipment 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 L.3

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

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 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.

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 (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.

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 SW~~S~~
3.7.8 ①

CTS

3.7 PLANT SYSTEMS

Essential

3.7.8 Service Water System (S~~W~~S) ①

(ESW)

LCO 3.7.4.1 — LCO 3.7.8 Two SW~~S~~ trains shall be OPERABLE. ①

E

INSERT 1 ⑥

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

ACTIONS

3.7.4.1.a Action a

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

① ② ① ① ①

3.7.4.1.a Action a 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.

Ⓔ SW~~S~~ System ①
3.7.8

CTS

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
4.7.4.1a SR 3.7.8.1 Ⓔ - NOTE - 1. Isolation of SW~~S~~ flow to individual components does not render ~~the~~ SW~~S~~ inoperable. ① Verify each SW~~S~~ 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. ①	31 days ④
4.7.4.1.b SR 3.7.8.2 Ⓔ Verify each SW~~S~~ 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 Ⓔ Verify each required SW~~S~~ pump starts automatically on an actual or simulated actuation signal.	~~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 SW~~S~~ ①

B 3.7.8

B 3.7 PLANT SYSTEMS

Essential

B 3.7.8 Service Water System (~~SWS~~) ①

ESW

BASES

E System

BACKGROUND

The SW~~S~~ 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 SW~~S~~ also provides this function for various safety related and nonsafety related components. The safety related function~~s~~ ~~is~~ covered by this LCO. ① ① ①

E System s are

~~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

E System

Additional information about the design and operation of the SW~~S~~, along with a list of the components served, is presented in the ~~F~~SAR, Section ~~[9.2.1]~~ (Ref. 1). The principal safety related function~~s~~ of the SW~~S~~ ~~is~~ the removal of decay heat from the reactor via the CCW System. ① U ① ③ ①

9.8.3 are E s System

INSERT 1A ①

E System E

APPLICABLE SAFETY ANALYSES

to assist in the

The design basis of the SW~~S~~ is for one SW~~S~~ 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 ~~F~~SAR, 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 SW~~S~~ is designed to perform its function with a single failure of any active component, assuming the loss of offsite power. ① ① ③ ①

al of U 9.8.3.2 E System

System removes heat the

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 SW~~S~~ train is sufficient to remove decay heat during subsequent operations in ③ ⑤ ①

E from RHR E

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.

BASES

APPLICABLE SAFETY ANALYSES (continued)

Ⓔ pump discharge 86

MODES 5 and 6. This assumes a maximum SWS temperature of 95 °F occurring simultaneously with maximum heat loads on the system. ① ③

Ⓔ System

The SWS satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii). ①

LCO Ⓔ

Two SWS 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. ①

Ⓔ

An SWS train is considered OPERABLE during MODES 1, 2, 3, and 4 when: 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 Ⓔ System

In MODES 1, 2, 3, and 4, the SWS is a normally operating system that is required to support the OPERABILITY of the equipment serviced by the Ⓔ SWS and required to be OPERABLE in these MODES. ① ①

System Ⓔ System

In MODES 5 and 6, the OPERABILITY requirements of the SWS are determined by the systems it supports. ①

ACTIONS

A.1 INSERT 3 ⑥

Ⓔ

If one SWS train is inoperable, action must be taken to restore OPERABLE status within 72 hours. In this Condition, the remaining Ⓔ OPERABLE SWS train is adequate to perform the heat removal function. However, the overall reliability is reduced because a single failure in the Ⓔ OPERABLE SWS train could result in loss of SWS 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 SWS 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 SWS 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 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
SWS ← 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

E

If the SWS 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

E

This SR is modified by a Note indicating that the isolation of the SWS components or systems may render those components inoperable, but does not affect the OPERABILITY of the SWS. E System ① ①

E

Verifying the correct alignment for manual, power operated, and automatic valves in the SWS flow path provides assurance that the proper flow paths exist for SWS operation. 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

E

This SR verifies proper automatic operation of the SWS valves on an actual or simulated actuation signal. The SWS 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] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a unit outage and the ① ③

24

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) SW~~S~~ pumps on an actual or simulated actuation signal. The SW~~S~~ is a normally operating system that cannot be fully actuated as part of normal testing during normal operation. The (24) ~~[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 ③

REFERENCES

1. Ⓤ FSAR, Section ~~[9.2.1]~~ 9.8.3. ① ③
2. Ⓤ FSAR, Section ~~[6.2]~~ 9.8.5.2. ① ③
3. Ⓤ FSAR, Section ~~[5.4.7]~~ 9.5.2. 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.

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.

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

Add proposed ITS 3.7.9

M.1

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

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~~.	C.1 (A) Be in MODE 3. AND C.2 (A) 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 $\leq$ 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)

BASES

BACKGROUND

The UHS provides a heat sink for process~~ing~~ and operating heat from safety related components during a transient or accident, as well as during normal operation. This is done by utilizing the Essential Service Water System ~~(SWS)~~ (ESW) ~~and the Component Cooling Water (CCW) System~~ and its associated loads. ⑤ ①

~~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.~~ INSERT 1 ① The two principal functions of the UHS are the dissipation of residual heat after reactor shutdown, and dissipation of residual heat after a~~n~~ transient or accident. ②

~~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 (5) 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~~ 3) ~~which~~ requirement that requires a 30 day supply of cooling water in the UHS. (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 (E) SW~~S~~ System 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 (E) SW~~S~~ System. To meet this condition, the UHS temperature should not exceed ~~90~~ 85.5 °F and the level should not fall below ~~1562 ft mean sea level during~~ the level necessary for normal unit operation. (1) (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)

ACTIONS (continued)

~~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.]~~ (3)

~~[B.1~~

~~- 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.~~ (3)

~~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~~ ③ ④

to ensure Ⓔ System its associated loads

~~This SR verifies that~~ the ~~SWS~~ is available to cool ~~the CCW System~~ to at least ~~its~~ their maximum design temperature with the maximum accident or normal design heat loads for 30 days following a Design Basis Accident. ①

INSERT 2 → 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 (as measured in the forebay) is ≤ [~~90~~ 85.5 °F]. 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 actuation 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. a 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.

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.

ATTACHMENT 10

ITS 3.7.10, Control Room Emergency Ventilation (CREVS) 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

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~~:

~~a. Two independent pressurization trains, and~~

~~b. One charcoal adsorber/HEPA filter unit.~~

LA.1

-----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

~~f. The provisions of Specification 3.0.4 are not applicable to movement of irradiated fuel assemblies.~~

A.5

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

184

L.1

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

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

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%.

Add proposed Note to SR 3.7.10.3

an actual or simulated actuation signal

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 ≤ 1000 cfm.

LA.5

on a STAGGERED TEST BASIS

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

ITS

A.1

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~~:

~~a. Two independent pressurization trains, and~~

~~b. One charcoal adsorber/HEPA filter unit.~~

LA.1

-----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

~~f. The provisions of Specification 3.0.4 are not applicable to movement of irradiated fuel assemblies.~~

A.5

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:

L.1

a. Deleted

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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%.

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% 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.

A.1

ITS

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

24

SR 3.7.10.3, SR 3.7.10.4

e. At least once per ~~18~~ months by:

See ITS 5.5

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%.

A.6

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.

LA.5

on a STAGGERED TEST BASIS

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%.

See ITS 5.5

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%.

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 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 CTS 3.7.5.1 Action f states "The provisions of Specification 3.0.4 are not applicable to movement of irradiated fuel assemblies." CTS 3.0.4 states "Entry into an OPERATIONAL MODE or other specified applicability condition shall not be made unless the conditions of the Limiting Condition for Operation are met without reliance on provisions contained in the ACTION statements unless otherwise excepted." ITS 3.7.10 does not contain the exception to ITS LCO 3.0.4, since ITS LCO 3.0.4 states that it applies only for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, 3, and 4. This changes the CTS by deleting an allowance since it is incorporated into ITS LCO 3.0.4.

This change is considered acceptable because ITS LCO 3.0.4 has been changed such that the CTS allowance is not required to retain the same CTS requirement. This change is designated as administrative because it does not result in any technical changes to the CTS.

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 $\leq$ 1000 cfm every 18 months. 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 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

DISCUSSION OF CHANGES
ITS 3.7.10, CONTROL ROOM EMERGENCY VENTILATION (CREV) SYSTEM

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 ≤ 1000 cfm. 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 $\leq$ 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 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 7 – Relaxation Of Surveillance Frequency, 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. The Surveillance Frequency for ITS SR 3.7.10.1 is every 184 days, and does not include the "STAGGERED TEST BASIS" requirement. This changes the CTS by deleting the requirement to test on a STAGGERED TEST BASIS. The extension of the testing Frequency from 31 days to 184 days is discussed in DOC L.3.

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. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. 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 which have demonstrated 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 CREV 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 longer or shorter under the ITS than under the CTS.

DISCUSSION OF CHANGES
ITS 3.7.10, CONTROL ROOM EMERGENCY VENTILATION (CREV) SYSTEM

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 ≤ 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 ≥ 0.0625 inches water gauge, relative to the outside atmosphere during the pressurization mode of operation at a makeup flow rate of ≤ 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 ≥ 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 184 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 184 days (i.e., a maximum of 230 days accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2). The deletion of the STAGGERED TEST BASIS requirement is discussed in DOC L.1.

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 184 day Surveillance Frequency, if performed at the maximum interval allowed by ITS SR 3.0.2 (230 days) 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)

CRE~~FS~~ V System ①
3.7.10

CTS.

3.7 PLANT SYSTEMS ①

3.7.10 Control Room Emergency ~~Filtration~~ Ventilation System (CRE~~FS~~ V)

LCO 3.7.5.1

LCO 3.7.10 Two CRE~~FS~~ V trains shall be OPERABLE. ①

- NOTE -

The control room boundary may be opened intermittently under administrative control.

APPLICABILITY: MODES 1, 2, 3, and 4, ~~[5, and 6]~~, ②
During movement of ~~[recently]~~ irradiated fuel assemblies. INSERT 1 ②

ACTIONS ⑥

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CRE~~FS~~ V train inoperable.	A.1 Restore CRE~~FS~~ V train to OPERABLE status.	7 days
B. Two CRE~~FS~~ V 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
INSERT 1A ~~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~~ D.1 Be in MODE 3. AND ~~C~~ D.2 Be in MODE 5.	6 hours 36 hours

Actions a and d ①

Action c ①

Actions a, b, and c ③

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

V System ①

CRE~~FS~~
3.7.10

CTS

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
Action d	~~D~~ E. Required Action and associated Completion Time of Condition A not met ~~in MODE 5 or 6, or~~ during movement of ~~[recently]~~ irradiated fuel assemblies.	~~D~~ E.1 ~~- NOTE - [Place in toxic gas protection mode if automatic transfer to toxic gas protection mode is inoperable.]~~ Place OPERABLE CRE~~FS~~ V train in ~~emergency~~ pressurization/cleanup mode. OR	Immediately	③ ② ①
		~~D~~ E.2 Suspend movement of ~~[recently]~~ irradiated fuel assemblies.	Immediately	③ ②
Action e	~~E~~ F. Two CRE~~FS~~ V trains inoperable ~~in MODE 5 or 6, or~~ during movement of ~~[recently]~~ irradiate d fuel assemblies.	~~E~~ F.1 Suspend movement of ~~[recently]~~ irradiated fuel assemblies.	Immediately	③ ① ② ④
DOC A.3	~~F~~ G. Two CRE~~FS~~ V trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B and C ⑤	~~F~~ G.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~~FS~~ V train for ~~[≥ 10 continuous hours with the heaters operating or (for systems without heaters)~~ ≥ 15 minutes~~]~~.	~~31~~ 184 days 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~~FS~~ V System filter testing in accordance with the ~~[~~Ventilation Filter Testing Program (VFTP)~~]~~.	In accordance with ~~[~~VFTP~~]~~	① ②

CTS

SURVEILLANCE REQUIREMENTS (continued)

		SURVEILLANCE	FREQUENCY	
		INSERT 2 Ⓥ System		⑤
4.7.5.1.e.2	SR 3.7.10.3	Verify each CRE~~FS~~ 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 CRE~~FS~~ 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 **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 184 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)

B 3.7 PLANT SYSTEMS

B 3.7.10 Control Room Emergency ~~Filtration~~ Ventilation System (CRE~~FS~~ V) (1)

BASES

BACKGROUND

The CRE~~FS~~ V System provides a protected environment from which operators can control the unit following an uncontrolled release of radioactivity~~, chemicals, or toxic gas~~. (1)

The CRE~~FS~~ V System consists of two ~~independent, redundant~~ trains that recirculate and filter the control room air and outside air. Each train ~~consists of a~~ INSERT 1 prefilter ~~or demister~~, a high efficiency particulate air (HEPA) filter, and ~~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 to remove water droplets from the air stream~~. INSERT 1A ~~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.~~ (1) (3)

The ~~CREFS~~ CREV System is an emergency outside system, ~~parts of~~ intake 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 (5) any large particles in the air~~, and any entrained water droplets present,~~ to prevent excessive loading of the HEPA filter~~s~~ and charcoal adsorber~~s~~. ~~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.

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

A single train will pressurize System ~~the~~ control room to about ~~0.125~~ 0.0625 inches water gauge. The CRE~~FS~~ V System operation in maintaining the control room habitable is discussed in the U FSAR, Section ~~6.4~~ 9.10 (Ref. 1). ② 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~~FS~~ V is designed in accordance with Seismic Category I requirements. ③ ①

The CRE~~FS~~ 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). ①

APPLICABLE SAFETY ANALYSES

INSERT 4A

The CRE~~FS~~ 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~~FS~~ 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 U FSAR, Chapter ~~15~~ 14 (Ref. 2). ① 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

The worst case single active failure of a component of the CRE~~FS~~ V System, assuming a loss of offsite power, does not impair the ability of the system to perform its design function. ②

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

Ⓥ System ①

CRE~~FS~~
B 3.7.10

BASES

APPLICABLE SAFETY ANALYSES (continued)

Ⓥ System

The CRE~~FS~~ satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii). ①

Ⓥ

LCO Two ~~independent and redundant~~ CRE~~FS~~ 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

The CRE~~FS~~ is considered OPERABLE when the individual components necessary to limit operator exposure are OPERABLE in both trains. A CRE~~FS~~ Ⓥ 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, CRE~~FS~~ Ⓥ must be OPERABLE to control operator exposure during and following a DBA. 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

Ⓥ

During movement of ~~[recently]~~ irradiated fuel assemblies, the CRE~~FS~~ 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

① **INSERT 5**

in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

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 CRE~~FS~~ V train is inoperable, action must be taken to restore OPERABLE status within 7 days. In this ~~C~~condition, the remaining OPERABLE CRE~~FS~~ V train is adequate to perform the control room protection function. However, the overall reliability is reduced because a ~~single failure in the OPERABLE CREFS train could result in loss of CREFS~~ active 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 CRE~~FS~~ V trains cannot perform their intended functions. Action~~s~~ 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 ~~T~~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 CRE~~FS~~ train ~~or~~ control room boundary, or filter unit 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

E

~~D~~.1 and ~~D~~.2 1

INSERT 6A

V

~~In MODE 5 or 6, or~~ during movement of ~~recently~~ irradiated fuel assemblies, if the inoperable CRE~~FS~~ train cannot be restored to OPERABLE status within the required Completion Time, action must be taken to immediately place the OPERABLE CRE~~FS~~ train in the ~~emergency~~ pressurization/cleanup 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. V 1 1 3

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 (Required Action E.2). This places the unit in a condition ~~that minimizes risk~~ where the LCO does not apply. This does not preclude the movement of fuel to a safe position. 8 10

~~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

INSERT 6A

V

~~In MODE 5 or 6, or~~ during movement of ~~recently~~ irradiated fuel assemblies, with two CRE~~FS~~ 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 CRE~~FS~~ trains are inoperable in MODE 1, 2, 3, or 4 for reasons other than an inoperable control room boundary or filter unit (i.e., Condition B and C 5), the 1

① **INSERT 6A**

in the containment, auxiliary building, and Unit 2 (Unit 1) and Unit 1 (Unit 2) containment

V System 1

BASES

ACTIONS (continued)

V System 1

CRE~~FS~~ 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~~ 184 days 1 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.~~ 2 ~~Systems without heaters need only be operated~~ INSERT 6B for ≥ 15 minutes ~~to~~ demonstrate the function of the ~~system.]~~ CREV train 1 The ~~31~~ 184 day Frequency is based on the reliability of the equipment and the two train ~~redundancy~~ availability. 2 5 10

SR 3.7.10.2

This SR verifies that the required CRE~~FS~~ V System 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 and maximum flow rate, and the physical properties of the activated charcoal. Specific test Frequencies and additional information are discussed in detail in the ~~[~~VFTP~~]~~. 1 2 5 2

SR 3.7.10.3

This SR verifies that each CRE~~FS~~ V 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).~~ INSERT 7 1 6 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 CRE~~FS~~ V System. During the ~~emergency~~ pressurization/cleanup 3 mode of operation, the CRE~~FS~~ V System is designed to pressurize the control room ≥ ~~[0.125]~~ 0.0625 2 inches water gauge positive pressure with respect to ~~adjacent areas~~ outside atmosphere 1 in order to prevent unfiltered inleakage. INSERT 8 3 The CRE~~FS~~ V System 1 is designed to maintain this positive pressure with one train at a makeup flow rate of ~~[3000]~~ 1000 2 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 the each CREV train has the capability to start from a Safety Injection signal from both units.

③ **INSERT 8**

The CREV System flow rate during this test should be $\geq$ 5400 cfm and $\leq$ 6600 cfm.

Ⓥ System ①

BASES

SURVEILLANCE REQUIREMENTS (continued)

Frequency of ~~[18]~~ 24 months on a STAGGERED TEST BASIS is consistent with ~~the guidance provided in NUREG-0800 (Ref. 4)~~. INSERT 9 ② ③ 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

CONTROL ROOM AIR CONDITIONING SYSTEM

LIMITING CONDITION FOR OPERATION

LCO 3.7.11 3.7.5.2 Two ~~The~~ control room air conditioning system (CRACS) trains 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

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

L.2

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

ITS

A.1

CONTROL ROOM AIR CONDITIONING SYSTEM

LIMITING CONDITION FOR OPERATION

trains

L.1

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~~.

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 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.

with one train in operation

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 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

DISCUSSION OF CHANGES
ITS 3.7.11, CONTROL ROOM AIR CONDITIONING (CRAC) SYSTEM

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 ≤ 95ºF. 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~~ ①
3.7.11

CTS

3.7 PLANT SYSTEMS

3.7.11 Control Room ~~Emergency Air Temperature Control~~ Air Conditioning (CRAC) System ~~(CREATCS)~~ ①

3.7.5.2

LCO 3.7.11 Two ~~CREATCS~~ CRAC trains shall be OPERABLE. ①

DOC M.1

APPLICABILITY: MODES 1, 2, 3, and 4, ~~[5, and 6],~~ ②
During movement of ~~[recently]~~ irradiated fuel assemblies. ②

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
Action	A. One ~~CREATCS~~ CRAC train inoperable.	A.1 Restore ~~CREATCS~~ CRAC 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~~ CRAC train in operation. OR C.2 Suspend movement of ~~[recently]~~ irradiated fuel assemblies.	Immediately Immediately	① ②
DOC M.1	D. Two ~~CREATCS~~ CRAC trains inoperable ~~[in MODE 5 or 6, or]~~ during movement of ~~[recently]~~ irradiated fuel assemblies.	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
E. Two CRAC ~~CREATCS~~ trains inoperable in MODE 1, 2, 3, or 4.	E.1 Enter LCO 3.0.3.	Immediately

DOC A.2 ①

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.11.1	Verify ~~each~~ with one CRAC ~~CREATCS~~ train ~~has the capability to remove the assumed heat load.~~ INSERT 1	~~[18] months~~ 12 hours

4.7.5.2 ③

INSERT 2 ③

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

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 $\leq$ 85°F is sufficient to ensure the CRAC trains are OPERABLE.

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

B 3.7.11 Control Room ~~Emergency Air Temperature Control~~ Air Conditioning (CRAC) System ~~(CREATCS)~~ ①

BASES ① ②

BACKGROUND

The ~~CREATCS~~ CRAC System INSERT 1 ~~provides temperature control for the control room following isolation of the control room~~ INSERT 1A. ②

The ~~CREATCS~~ CRAC System consists of two humidifier package independent and redundant trains that provide cooling and heating ~~of recirculated control room air~~. Each train consists of an air handling unit, 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.~~ INSERT 2 ②

The ~~CREATCS~~ CRAC System 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. ① ③ The ~~CREATCS~~ CRAC System operation in maintaining the control room temperature is discussed in the u FSAR, Section ~~[6.4]~~ 9.10 (Ref. 1). INSERT 3 ① ③ ③ ①

APPLICABLE SAFETY ANALYSES

The design basis of the ~~CREATCS~~ CRAC System is to maintain the control room temperature for 30 days of continuous occupancy. ①

The ~~CREATCS~~ CRAC System components are arranged in 97 ~~redundant, safety related trains. During emergency operation,~~ the ~~CREATCS~~ CRAC System maintains the temperature ~~between [70]°F and~~ ≤ ~~[85]~~ 97 °F. INSERT 3A ① ② ③ ① A single active failure of a component of the ~~CREATCS~~ CRAC System, 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~~ CRAC System is ~~designed~~ analyzed in accordance with Seismic Category I requirements. ① The ~~CREATCS~~ CRAC System 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. ②

The ~~CREATCS~~ CRAC System satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii). ①

LCO

Two independent and redundant trains of the ~~CREATCS~~ CRAC System 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 ≤ 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

BASES

LCO (continued)

①② The ~~CREATCS~~ CRAC System is considered to be OPERABLE when the individual components necessary to maintain the control room temperature within its maximum limit are OPERABLE in both trains. These components include the ~~heating and~~ INSERT 3B cooling coils and associated temperature control instrumentation. In addition, the ~~CREATCS~~ CRAC System must be ~~operable~~ to the extent that air circulation can be maintained. ② ① ⑥

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 MODE 5 or 6, ~~CREATCS~~ the CRAC System ~~may~~ ⑬ not ~~be~~ required ~~for those facilities that do not require automatic control room isolation~~ INSERT 3C. ③ ②

ACTIONS

A.1

With one ~~CREATCS~~ CRAC train inoperable, action must be taken to restore OPERABLE status within 30 days. In this ~~C~~condition, the remaining OPERABLE ~~CREATCS~~ CRAC 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~~ CRAC System function. The 30 day Completion Time is based on the low probability of an event requiring control room isolation, and 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

B.1 and B.2

In MODE 1, 2, 3, or 4, if the inoperable ~~CREATCS~~ CRAC train cannot be restored to OPERABLE status within the required Completion Time of Condition A, 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. ④ ①

② **INSERT 3B**

(cooled by either the Chilled Water System or, if the Ultimate Heat Sink temperature is ≤ 65°F, the ESW System)

② **INSERT 3C**

for the mitigation of a postulated event

①

BASES

ACTIONS (continued)

C.1 and C.2

~~[In MODE 5 or 6, or]~~ during movement of [recently] irradiated fuel, if the inoperable CRAC ~~CREATCS~~ train cannot be restored to OPERABLE status within the required Completion Time, the OPERABLE CRAC ~~CREATCS~~ 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 CRAC ~~CREATCS~~ 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 CRAC ~~CREATCS~~ trains are inoperable in MODE 1, 2, 3, or 4, the CRAC System ~~control room CREATCS~~ 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 ≤ 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.

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 12

ITS 3.7.12, Engineered Safety Features (ESF) Ventilation System

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

A.1

ITS

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

L.1

4.7.6.1 Each ESF ventilation system exhaust air filter train shall be demonstrated OPERABLE:

184

SR 3.7.12.1

LA.2

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.

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

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

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

See ITS 5.5

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

SR 3.7.12.3

d. At least once per ~~18~~ 24 months by:

L.2

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 actual or simulated actuation signal ~~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%.

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

A.1

ITS

PLANT SYSTEMS

3/4.7.6 ESF VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

LCO 3.7.12

3.7.6.1 Two independent ESF ventilation system exhaust air filter trains shall be OPERABLE.

LA.1

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

4.7.6.1 Each ESF ventilation system exhaust air filter train shall be demonstrated OPERABLE:

L.3

184

L.1

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

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.

See ITS 5.5

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

ITS

A.1

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

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

LA.3

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.†~~

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.

LESS RESTRICTIVE CHANGES

L.1 *(Category 7 – Relaxation of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.7.6.1.a requires 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. The Surveillance Frequency for ITS SR 3.7.12.1 is every 184 days, and it does not include the "STAGGERED TEST BASIS" requirement. This changes the CTS by deleting the requirement to test on a STAGGERED TEST BASIS. The extension of the testing Frequency from 31 days to 184 days is discussed in DOC L.3.

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. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. 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 which have demonstrated 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 ESF Ventilation 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 longer or shorter under the ITS than under the CTS.

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 $\geq$ 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 184 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 184 days (i.e., a maximum of 230 days accounting for the allowable grace period specified in CTS 4.0.2 and ITS SR 3.0.2). The deletion of the STAGGERED TEST BASIS requirement is discussed in DOC L.1.

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 184 day Surveillance Frequency, if performed at the maximum interval allowed by ITS SR 3.0.2 (230 days) 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)

ESF Ventilation System ~~ECCS PREACS~~ ①
3.7.12

CTS

3.7 PLANT SYSTEMS

3.7.12 ~~Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)~~ INSERT 1 ①

3.7.6.1 LCO 3.7.12 Two ~~ECCS PREACS~~ ESF Ventilation trains shall be OPERABLE. ①

DOC M.1

- NOTE -
The ~~ECCS pump room~~ ESF enclosure boundary may be opened intermittently under administrative control. ①

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

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
Action	A. One ~~ECCS PREACS~~ ESF Ventilation train inoperable.	A.1 Restore ~~ECCS PREACS~~ ESF Ventilation train to OPERABLE status.	7 days	①
DOC M.1	B. Two ~~ECCS PREACS~~ ESF Ventilation trains inoperable due to inoperable ~~ECCS pump room~~ ESF enclosure boundary.	B.1 Restore ~~ECCS pump room~~ ESF enclosure boundary to OPERABLE status.	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

~~ECCS PREACS~~
3.7.12

SURVEILLANCE REQUIREMENTS

CTS	SURVEILLANCE	FREQUENCY	
4.7.6.1.a	SR 3.7.12.1 ESF Ventilation Operate each ~~ECCS PREACS~~ train for ~~[≥ 10 continuous hours with the heaters operating or (for systems without heaters)~~ ≥ 15 minutes~~]~~.	~~[31]~~ 184 days ESF Ventilation System	④ 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 ESF Ventilation Verify one ~~ECCS PREACS~~ train can maintain a ~~pressure ≤ [-0.125] inches water gauge~~ Negative pressure 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 184 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)

ESF Ventilation System → ECCS PREACS ①

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

ESF enclosure areas

The ECCS PREACS filters air from the area of the active ECCS ~~components during the recirculation~~ phase of a loss of coolant accident (LOCA). The ECCS PREACS, in conjunction with other ~~normally operating~~ systems, also provides ~~environmental control of temperature and humidity~~ in the ~~ECCS pump room area and the lower reaches of the auxiliary building~~. ← INSERT 2 ② ①

adequate cooling ② 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 prefilters 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 roughing ②

ESF Ventilation System

). u 9.7.3.1

The ECCS 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. 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 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,~~ during the recirculation mode. In such a case, the system limits radioactive release to within the 10 CFR 100 (Ref. 3) limits ~~, or the NRC staff approved licensing basis (e.g., a specified fraction of Reference 6 limits)~~. The analysis of the effects and consequences of a large break LOCA is presented in Reference 8. ~~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.~~

INSERT 4 ①

②

INSERT 4A

②

②

②

④

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

ESF Ventilation System

The ECCS PREACS satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii). ①

LCO

Two independent and redundant trains of the ECCS PREACS 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 exceeding 10 CFR 100 limits in the event of a Design Basis Accident (DBA). ①

ESF enclosure areas ①

ECCS PREACS is considered OPERABLE when the individual components necessary to maintain the ECCS pump room filtration are OPERABLE in both trains. ① ②

ESF enclosure areas

An ECCS PREACS 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 can be maintained. ②

flow

ESF enclosure ①

INSERT 4B

The LCO is modified by a Note allowing the ECCS pump 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 ②

② **INSERT 4**

leakage from the 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~~ ESF Ventilation trains for reasons other than Condition B would result in the loss of functional capability; therefore, LCO 3.0.3 must be entered immediately. (8) (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.~~ (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~~ ESF enclosure boundary within 24 hours. During the period that the ~~ECCS pump room~~ ESF enclosure boundary is inoperable, appropriate compensatory measures (consistent with the intent, as (1)

ESF Ventilation System (1)

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 184 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~~ INSERT 4C for ≥ 15 minutes ~~to~~ demonstrate the function of the ~~system~~ train. ~~]~~ The ~~31~~ 184 day Frequency is based on the known reliability of equipment and the two train redundancy available. (1) (2) (5) (2) (3) (1)

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

This SR verifies that each ESF Ventilation ~~ECCS PREACS~~ train starts and operates on an actual or simulated actuation signal. ~~The [18] month Frequency is consistent with that specified in Reference 6~~. INSERT 5 ① ③ ⑥

SR 3.7.12.4

This SR verifies the integrity of the ESF ~~ECCS pump room~~ ESF enclosure enclosure. The ability of the ~~ECCS pump room~~ ESF enclosure to maintain a negative pressure, with respect to potentially uncontaminated adjacent areas, is periodically tested to verify proper functioning of the ~~ECCS PREACS~~ ESF Ventilation System. 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, at a flowrate ≤ 22,500 cfm 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]~~ 24 months on a STAGGERED TEST BASIS ~~is consistent with the guidance provided in NUREG-0800, Section 6.5.1 (Ret. 6)~~. INSERT 6 ① ③ 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. ④ FSAR, Section ~~15.6.5~~ 14.3.5.19 ③ ②
~~4. Regulatory Guide 1.52 (Rev. 2)~~ ⑥
② ~~6~~. 10 CFR 100.11. ②
3. 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

REFERENCES (continued)

6. NUREG-0800, Section 6.5.1, Rev. 2, July 1981. ⑦

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.

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.

ATTACHMENT 13

ITS 3.7.13, Fuel Handling Area Exhaust Ventilation (FHAEV) System

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

A.1

ITS

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.9 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 L.1

ACTIONS Note b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable. M.1

SURVEILLANCE REQUIREMENTS Add proposed SR 3.7.13.1

train A.4

SR 3.7.13.2 4.9.12 The above required fuel storage pool ventilation system shall be demonstrated OPERABLE:

184

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 L.5

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 builiding 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

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; or

See ITS 5.5

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 months by: 24 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.

the FHAEV System actuates

actual or simulated

LA.1 M.1

SR 3.7.13.4

3. Verifying that on a 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

required

train A.4

SR 3.7.13.5

4. Verifying that the exhaust ventilation system 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 M.2

A.4

ITS 3.7.13

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

L.1

ACTIONS Note b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

Add proposed SR 3.7.13.1

M.1

SURVEILLANCE REQUIREMENTS

train A.4

L.5

SR 3.7.13.2 4.9.12 The above required fuel storage pool ventilation system shall be demonstrated OPERABLE:

184

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:

See ITS 5.5

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%.

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

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

L.4

SR 3.7.13.4, SR 3.7.13.5

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 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.

LA.1 M.1

SR 3.7.13.4

3. Verifying that the FHAEV System actuates on a ~~high-radiation~~ actual or simulated 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

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 3.7.13

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.

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 $\leq$ 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 $\geq$ 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. CTS 3.9.12 Action b also provides an exception to Specification 3.0.4. 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. ITS 3.7.13 also does not provide an exception to ITS LCO 3.0.4. 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 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. Furthermore, due to the Applicability change and subsequent Action change, the exception to LCO 3.0.4 is no longer necessary (since ITS 3.7.13 ACTION A requires exiting the Applicability of the LCO). 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 $\geq$ 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 $\geq$ 0.125 inches of vacuum water gauge with respect to atmospheric pressure during the accident mode of operation at a flow rate of $\leq$ 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.

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 184 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 184 days (i.e., a maximum of 230 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 184 day Surveillance Frequency, if performed at the maximum interval allowed by ITS SR 3.0.2 (230 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)

3.7.13 Fuel ~~Building Air Cleanup~~ System ~~(FBACS)~~ ①

3.9.12 LCO 3.7.13 One FHAEV ~~Two~~ ~~FBACS~~ train~~s~~ shall be OPERABLE and in operation. ① ②

3.9.12 Action a footnote*

- NOTE -
The auxiliary ~~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 auxiliary ~~fuel~~ building. ④ ①

Action b

ACTIONS

- NOTE -
LCO 3.0.3 is not applicable.

②

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~~

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 — Ⓐ ~~E.~~ ~~Two FBACS trains inoperable during movement of [recently] irradiated fuel assemblies in the fuel building.~~ INSERT 1	Ⓐ ~~E~~.1 Suspend movement of ~~[recently]~~ irradiated fuel assemblies in the ~~fuel~~ auxiliary building.	Immediately ② ④ ⑦

INSERT 2 ②

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
4.9.12.a SR 3.7.13.~~1~~ ②	Operate ~~each~~ required ~~FBACS train~~ FHAEV fan for ~~[≥ 10 continuous hours with the heaters operating or (for systems without heaters)~~ ≥ 15 minutes~~]~~.	~~31~~ 184 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~~ required FHAEV train actuates on an actual or simulated actuation signal.	[18] 24 months]	① ④ ②
4.9.12.d.4	SR 3.7.13.4 ⑤	Verify one FBACS FHAEV required train can maintain a pressure of vacuum ≤ [-0.125] inches water gauge with respect to atmospheric pressure during the [post accident] mode of operation at a flow rate ≤ [20,000] 27,000 cfm. ⑦	[18] 24 months on a STAGGERED TEST BASIS	① ④ ② ④ ④ ②
	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 184 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

FHAEV System

BASES

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.~~ ①② INSERT 1B ② 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 9.9.3.2 14.2.1

The ~~FBACS~~ is discussed in the FSAR, Sections ~~6.5.1~~, ~~9.4.5~~, and ~~15.7.4~~ (Refs. 1, ~~2~~ ② and ~~3~~ ①, respectively) ~~because it may be used for normal, as well as post accident, atmospheric cleanup functions~~. ①②③

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~~ ②, 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 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 (2) building is determined for a fuel handling accident ~~and for a LOCA~~. (2) ~~[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)

The ~~FBACS~~ FHAEV System satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii). (1)

LCO

~~Two independent and redundant~~ One train~~s~~ of the ~~FBACS~~ FHAEV System ~~are~~ is required to be OPERABLE (1)(2) ~~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.~~ INSERT 4 (1) Total system failure could result in the atmospheric release from the fuel handling building exceeding the 10 CFR 100 (Ref. ~~5~~ 4) (2) limits in the event of a fuel handling accident ~~involving handling recently irradiated fuel~~. (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~~. (1) (1) ~~An FBACS~~ Thus, the required FHAEV train is considered OPERABLE when its associated:

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. (1) 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)

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.

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

BASES

APPLICABILITY

In MODE 1, 2, 3, ~~or~~ 5, or 6, 4, the ~~FBACS~~ FHAEV System is not 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

~~In MODE 5 or 6, the FBACS is not required to be OPERABLE since the ECCS is not required to be OPERABLE.~~

During movement of ~~recently~~ irradiated fuel in the ~~fuel handling area~~ auxiliary building, the ~~FBACS~~ FHAEV System is required to be OPERABLE to alleviate the consequences of a fuel handling accident.

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~~

~~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.~~

~~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

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.~~

Ⓐ → 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 auxiliary ①
taken to place the unit in a condition in which the LCO does not apply. Action must be taken immediately to suspend movement of

BASES

ACTIONS (continued)

auxiliary

~~recently~~ irradiated fuel assemblies in the ~~fuel~~ 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~~ 184 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~~ 184 ① day Frequency is based on the known reliability of the equipment ~~and the two train redundancy available~~. ⑤ INSERT 8 ② ①

SR 3.7.13.~~2~~ ③

FHAEV System

This SR verifies that the required ~~FBACS~~ 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~~]~~. ③ ③ ⑤ ③

~~[~~SR 3.7.13.~~3~~ ④ ③

the required FHAEV actuates

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 ① ⑥ ②

SR 3.7.13.~~4~~ ⑤ auxiliary 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 of vacuum water gauge with respect to atmospheric pressure at a flow rate of ~~[20,000]~~ ≤ 27,000 cfm ~~to the fuel building~~. The ② ① ③ ② ① ⑦ ③ 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 ⑦

~~An [18] month Frequency (on a STAGGERED TEST BASIS) is consistent with Reference 6.~~

~~[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. UFSAR, Section ~~6.5.1~~ 9.9.3.2.
~~2. FSAR, Section [9.4.5].~~ ② ③
② ~~3.~~ UFSAR, 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.

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.

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.

ATTACHMENT 14

ITS 3.7.14, Fuel Storage Pool Water Level

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

A.1

ITS

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 A

ACTION:

irradiated

immediately

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 water level to within its limit within 4 hours~~. The provision of Specification 3.0.3 are not applicable.

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

A.1

ITS

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

irradiated

immediately

L.2

A.2

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.

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

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 $\geq$ 23 ft over the top of irradiated fuel assemblies seated in the storage racks. Also, this change is acceptable

DISCUSSION OF CHANGES
ITS 3.7.14, FUEL STORAGE POOL WATER LEVEL

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 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)

①

CTS

3.7 PLANT SYSTEMS

3.7.15 Fuel Storage Pool Water Level ①

④

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.

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

①

B 3.7 PLANT SYSTEMS

B 3.7.1~~6~~ ④ Fuel Storage Pool Water Level ①

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 ② 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 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 3.7.1~~5~~.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. ⓤFSAR, Section ~~[9.7.2]~~ 9.7.2 ② ③
2. ⓤFSAR, Section ~~[9.1.3]~~ 9.4 ② ③
3. ⓤFSAR, Section ~~[15.7.4]~~. 14.2.1 ② ③
4. Regulatory Guide 1.25~~, Rev. 0~~. ④

①

BASES

REFERENCES (continued)

5. 10 CFR 100.11.

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.

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

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 2~~

LA.1

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 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.

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

CTS ①

3.7 PLANT SYSTEMS

3.7.16 15 [Fuel Storage Pool Boron Concentration] ① ②

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

①

SURVEILLANCE REQUIREMENTS

4.9.15

SURVEILLANCE		FREQUENCY
SR 3.7.1~~6~~⑤.1	Verify the fuel storage pool boron concentration is within limit.	7 days

①

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.

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~~]~~ ① ②

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~~ Would result 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 for Normal storage be evaluated in the absence of soluble boron. Hence, the design of ~~both~~ all 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. ~~2~~ 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 LCO 3.7.~~17~~ 16, "Spent Fuel ~~Assembly~~ Pool Storage." Prior to movement of an assembly, it is necessary to perform SR 3.7.16.1. 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

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).

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.

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.

ATTACHMENT 16

ITS 3.7.16, Spent Fuel Pool Storage

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

A.1

ITS

5.0 DESIGN FEATURES

See ITS Chapter 4.0

5.4 REACTOR COOLANT SYSTEM

DESIGN PRESSURE AND TEMPERATURE

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

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

A.1

ITS

5.0 DESIGN FEATURES

See ITS Chapter 4.0

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

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 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

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

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 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

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

CTS

~~[~~Spent Fuel Pool Storage~~]~~ ①
3.7.~~17~~ ⑯ ②

3.7 PLANT SYSTEMS

3.7.~~17~~ 16 ~~[~~Spent Fuel Pool Storage~~]~~ ① ②

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

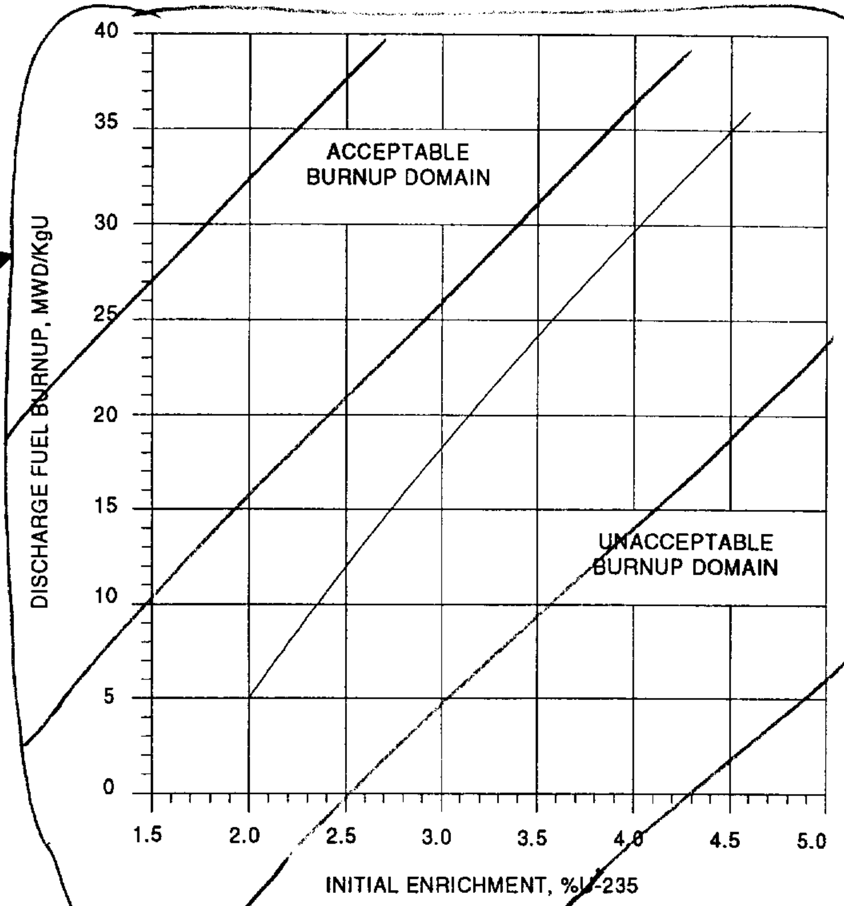
SURVEILLANCE		FREQUENCY
SR 3.7.~~17~~ 16.1	Verify by administrative means the initial enrichment and burnup of the fuel assembly is in accordance with ~~Figure 3.7.17-1 or Specification 4.3.1.1~~ Table 3.7.16-1.	Prior to storing the fuel assembly in ~~[Region 2]~~ Region 2 or 3

② ① ③

~~(~~Spent Fuel Pool Storage~~)~~ ①
3.7.~~17~~ 16 ②

③

INSERT 1



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

5.6.1.1.c.2,
5.6.1.1.c.3

③ **INSERT 1**

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)

B 3.7 Plant Systems

B 3.7.~~17~~ 16 ~~[~~Spent Fuel Pool Storage~~]~~ 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.~~ ③ Fuel assemblies not meeting the criteria of ~~Figure [3.7.17-1]~~ Table 3.7.16-1 ② shall be stored in accordance with ~~paragraph~~ Specification 4.3.1.1 in Section 4.3, " Fuel Storage." ②

The water in the spent fuel storage pool normally contains soluble boron, which would ~~results~~ result 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 for normal storage be evaluated in the absence of soluble boron. Hence, the design of ~~both~~ all 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. 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. 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.

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

The restrictions on the placement of fuel assemblies within the spent fuel pool, in accordance with ~~Figure 3.7.17-1~~ Table 3.7.16-1 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]~~ Table 3.7.16-1 shall be stored in accordance with Specification 4.3.1.1 ~~in Section 4.3~~. ② ② ⑤

APPLICABILITY

This LCO applies whenever any fuel assembly is stored in ~~Region 2~~ Region 2 or 3 of the fuel storage pool. ③

ACTIONS

A.1

Required Action A.1 is modified by a Note indicating that LCO 3.0.3 does not apply.

When the configuration of fuel assemblies stored in ~~Region 2~~ Region 2 or 3 of the spent fuel storage pool is not in accordance with ~~Figure 3.7.17-1~~ Table 3.7.16-1 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~~ Table 3.7.16-1 or Specification 4.3.1.1. ③ ② ②

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~~16.1 ②

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]~~ Table 3.7.16-1 in the accompanying LCO. For fuel assemblies ~~in the unacceptable range of~~ that do not meet the criteria of ②

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.

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

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
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.

L.1

LA.1

SR 3.7.17.1

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 ≤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

A.1

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.
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.~~

SR 3.7.17.1

L.1

LA.1

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.

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

3.7.1~~8~~ ⑦ Secondary Specific Activity

①

LCO 3.7.1.4

LCO 3.7.1~~8~~ 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	6 hours
	A.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

4.7.1.4
Table 4.7-2

SURVEILLANCE		FREQUENCY
SR 3.7.1~~8~~.1 ⑦	Verify the specific activity of the secondary coolant is ≤ [0.10] μCi/gm DOSE EQUIVALENT I-131.	31 days

②

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 3.7.1~~8~~ 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 tube leak allowed by (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"). ③ ② 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).

With the specified activity limit, the resultant 2 hour thyroid dose to a person at the ~~exclusion area~~ site boundary (EAB) would be about 0.58 2.2 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. ③ ③ ② ② 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

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)

BASES

APPLICABLE SAFETY ANALYSES (continued)

③

main steam safety valves

power operated relief valves (PORVs)

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

are ⑤

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 generators ~~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. SG PORVs ③ ⑤

③

Secondary specific activity limits satisfy Criterion 2 of 10 CFR 50.36(c)(2)(ii).

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 site boundary limit (Ref. 1). ②

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

of

DOSE EQUIVALENT I-131 exceeding the allowable value ~~in~~ the secondary coolant ~~is~~ 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

①

SURVEILLANCE REQUIREMENTS

SR 3.7.1~~8~~.1 ⑦

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~~. ④ FSAR, Section ~~Chapter~~ 14.2.7 ~~15~~.

② ③

INSERT 5

③

③ **INSERT 5**

2. 10 CFR 50, Appendix A, GDC 19.

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.

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.

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.

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.

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

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.

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 and 3.0.4 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

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.

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 and 3.0.4 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.

R.1

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.

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,

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.

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 evaluatio 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

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.

LA.1

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

If any snubber selected for functional testing either fails to loc or fails to move, i.e., frozen in place, the cause will be evalua 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.

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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.

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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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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 Nc 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

LA.1

*

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

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* 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.

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 ife 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.

LA.1

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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.

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.

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

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.

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
	<u>AND</u>		
	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.

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

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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).

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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.

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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.]

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BASES

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.]

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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.