Summary of Changes
ITS Section 3.7

Change Description	Affected Pages
The MSIV related changes described in the KPS letter (from J.A Price) to the NRC (Document Control Desk), dated May 12, 2010 (ADAMS Accession No. ML101380399) have been made. This change adds modifies the ITS SR 3.7.2.1 Note.	Pages 39, 42, 43, and 51
An additional change not described in any KPS response has been made to ITS 3.7.5 DOC M05. Minor corrections have been made to the Discussion of Change (DOC) to make the DOC consistent with the actual change being described. The more important of the changes is that the DOC previously used the word "are" and it should have been "that are not."	Page 107
The changes described in the KPS response to question MEH-004 have been made. This change adds the specific boron limit value to LCO 3.7.14 in lieu of referencing another LCO.	Pages 305, 307 (deleted DOCs), 308, 309, 311, 313, 317, and 318
The changes described in the KPS response to question ALK-007 have been made. This change adds new fuel assembly requirements into LCO 3.7.15.	Pages 331, 336, and 338
The changes described in the KPS response to question RPG-010 have been made. This change is due to the addition of ISTS 3.9.4 into the KPS ITS. Specifically, a CTS Markup reference change to the new Specification is made..	Page 364

ATTACHMENT 1

VOLUME 12

KEWAUNEE POWER STATION
IMPROVED TECHNICAL
SPECIFICATIONS CONVERSION

ITS SECTION 3.7
PLANT SYSTEMS

Revision 1

LIST OF ATTACHMENTS

ATTACHMENT 1

ITS 3.7.1, MAIN STEAM SAFETY VALVES (MSSVs)

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

A01

ITS

ITS 3.7.1

3.4 STEAM AND POWER CONVERSION SYSTEM

APPLICABILITY

Applies to the OPERATING status of the Steam and Power Conversion System.

OBJECTIVE

To assure minimum conditions of steam-relieving capacity and auxiliary feedwater supply necessary to assure the capability of removing decay heat from the reactor, and to limit the concentrations of water activity that might be released by steam relief to the atmosphere.

SPECIFICATION

a. Main Steam Safety Valves (MSSVs)

LCO 3.7.1 and Applicability

1. The Reactor Coolant System shall not be heated > 350°F unless a minimum of two MSSVs per steam generator are OPERABLE. A02

2. The reactor shall not be made critical unless five MSSVs per steam generator are OPERABLE. A03 L01

Add proposed ACTIONS Note

Add proposed ACTIONS A and B

ACTIONS A and B

3. If the conditions of TS 3.4.a.1 or TS 3.4.a.2 cannot be met within 48 hours, then within 1 hour initiate action to: M01

ACTION C

- Achieve HOT STANDBY within 6 hours
- Achieve HOT SHUTDOWN within the following 6 hours
- Achieve and maintain the Reactor Coolant System temperature < 350°F within an additional 12 hours.

M02

Add proposed Table 3.7.1-1 L01

Add proposed SR 3.7.1.1 and Table 3.7.1-2 M03

b. Auxiliary Feedwater System

1. The Reactor Coolant System shall not be heated > 350°F unless the following conditions are met:

A. Auxiliary feedwater train "A" and auxiliary feedwater train "B" are OPERABLE and capable of taking suction from the Service Water System and delivering flow to the associated steam generator.

B. The turbine-driven auxiliary feedwater train is OPERABLE and capable of taking suction from the Service Water System and delivering flow to both steam generators, OR

The turbine-driven auxiliary feedwater train is declared inoperable.

C. The auxiliary feedwater pump low discharge pressure trip channels are OPERABLE.

D. The auxiliary feedwater pump low suction pressure trip channels are OPERABLE.

See ITS 3.7.5

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

ADMINISTRATIVE CHANGES

A01 In the conversion of the Kewaunee Power Station (KPS) 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. 3.0, "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.

A02 CTS 3.4.a.1 states that the Reactor Coolant System shall not be heated to > 350ºF (ITS MODE 3) unless a minimum of two MSSVs per steam generator are OPERABLE. CTS 3.4.a.2 states that the reactor shall not be made critical (ITS MODES 1 and 2) unless five MSSVs per steam generator are OPERABLE. ITS LCO 3.7.1 requires five MSSVs per steam generator to be OPERABLE in MODES 1, 2, and 3. In addition, when less then five MSSVs per steam generator are OPERABLE but at least two MSSVs per steam generator are OPERABLE, ITS 3.7.1 ACTION B only requires a power reduction to as low as 19% RTP. Thus, as long as two MSSVs per steam generator are OPERABLE, the unit is allowed to remain at a THERMAL POWER of at least 19% RTP. This changes the CTS by combining both current LCO requirements into a single requirement, and placing the unit in an ACTION (in lieu of meeting the LCO statement) when less than five but at least two MSSVs per steam generator are OPERABLE. The change from MODE 3 to 19% RTP is discussed in DOC L01.

This change is acceptable because the number of MSSVs required OPERABLE under the various conditions has not changed. This change results in a format change only to comply with the manner in which the ISTS presents the MSSV requirements. This change is designated as an administrative change since it does not result is any technical changes to the CTS.

A03 CTS 3.4.a.2 states, in part, that the reactor can not be made critical with less than five MSSVs per steam generator. CTS 3.4.a.3 allows 48 hours to return 5 MSSVs to OPERABLE status. 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 CTS 3.4.a.2 and CTS 3.4.a.3 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 Completion Time is allowed to complete the compensatory actions. The ITS 3.7.1 ACTIONS Note allows a separate Completion Time 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.

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

MORE RESTRICTIVE CHANGES

M01 CTS 3.4.a.3 states that with one or more MSSVs inoperable, they must be returned to OPERABLE status within 48 hours or a unit shutdown is required. ITS 3.7.1 ACTION A requires that with one or more steam generators with one MSSV inoperable and the Moderator Temperature Coefficient (MTC) is zero or negative at all power levels, to reduce THERMAL POWER to ≤ 55% RTP within 4 hours. Furthermore, if there are one or more steam generators with 4 or more inoperable MSSVs, ITS 3.7.1 ACTION C will require an immediate unit shutdown. No time is provided to restore the inoperable MSSVs. This changes the CTS by decreasing the amount of time provided to restore an MSSV when there are one, two, or three MSSVs per steam generator from 48 hours to 4 hours and by deleting the time allowed to restore an MSSV when there are four or five MSSVs per steam generator inoperable (i.e., reduces the time from 48 hours to 0 hours).

The primary purpose of the MSSVs is to provide overpressurization protection for the secondary system. This is accomplished by allowing the MSSVs to have sufficient relief capacity to limit the secondary system pressure to ≤ 110% of the steam generator design capacity. ITS 3.7.1 provides an appropriate reduction in reactor power and is based on the heat removal capacity of the remaining OPERABLE MSSVs. This change is designated as more restrictive because less time is provided to restore MSSVs in the ITS than was provided in the CTS.

M02 CTS 3.4.a.3 requires that if the MSSVs are not restored to OPERABLE status within 48 hours, then, within 1 hour, initiate action to achieve HOT STANDBY (ITS MODE 2) within 6 hours, achieve HOT SHUTDOWN (ITS MODE 3) within the following 6 hours, and achieve and maintain the Reactor Coolant System temperature < 350°F (ITS MODE 4) within an additional 12 hours. However, as long as two MSSVs per steam generator are OPERABLE, only a unit shutdown to HOT SHUTDOWN is required, since CTS 3.4.a only requires two MSSVs when not critical and Reactor Coolant System temperature > 350ºF. The unit is only required to be cooled down to ≤ 350ºF when there are less than two MSSVs per steam generator. ITS 3.7.1 ACTION B provides the shutdown requirements when two or more MSSVs per steam generator are inoperable or one or more steam generators with one MSSV inoperable, and the MTC positive at any power level. ACTION B requires reducing 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 in 4 hours and, if in MODE 1, to reduce the Power Range Neutron Flux – High reactor trip setting to less than or equal to the Maximum Allowable % RTP specified in Table 3.7.1-1 for the number of OPERABLE MSSVs. ITS 3.7.1 ACTION C provides the shutdown requirements when the Required Action and associated Completion Time is not met or when four or five MSSVs per steam generator are inoperable and not restored to OPERABLE status within the allowed time period. ITS 3.7.1 ACTION C requires the unit to be in MODE 3 (equivalent to CTS HOT SHUTDOWN) within 6 hours and to be in MODE 4 (equivalent to CTS RCS temperature < 350°F) within 12 hours. This changes the time required to be in MODE 3 from 13 hours to 6 hours, deletes the requirement to be in MODE 2 within 7 hours, and changes the time to be in MODE 4 from 25 hours to 12 hours.

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

The purpose of CTS 3.4.a.3 is to place the unit in a condition in which it does not rely on the steam generators for heat removal when the MSSVs are 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 6 hours to be in MODE 3 in lieu of the current 13 hours and 12 hours to be in MODE 4 in lieu of the current 25 hours ensures a unit shutdown is commenced and completed within a reasonable period of time upon failure to restore the MSSVs to OPERABLE status within the allowed Completion Time. Additionally, since ITS 3.7.1 Required Action C.1 requires the unit to be in MODE 3 within 6 hours, there is no need to maintain the requirement to be MODE 2 within the same 6 hours. This change is designated as more restrictive because less time is allowed for the unit to reach MODE 3 and 4 than was allowed in the CTS.

M03 CTS 3.4.a does not provide Surveillance Requirements for testing the MSSVs nor does it specify any lift settings. ITS SR 3.7.1.1 and ITS Table 3.7.1-2 provide the testing requirements and the lift setpoints for the MSSVs. This changes the CTS by adding specific requirements for testing and maintaining OPERABLE the MSSVs.

The purpose of ITS SR 3.7.1.1 and ITS Table 3.7.1-2 is to provide a means of verifying that the MSSVs are capable of performing their required safety function. ITS Table 3.7.1-2 defines the specific pressure that each MSSV on each steam generator is required to lift. Currently, Kewaunee Power Station performs this testing in the Inservice Testing Program required by CTS 4.2. In accordance with ITS SR 3.7.1.1, this testing will continue in the Inservice Testing Program, but will now be specifically stated as being required for OPERABILITY of the MSSVs. This change is more restrictive because a new Surveillance Requirement with specific MSSV lift settings has been added.

<u>RELOCATED SPECIFICATIONS</u>

None

<u>REMOVED DETAIL CHANGES</u>

None

<u>LESS RESTRICTIVE CHANGES</u>

L01 *(Category 4 – Relaxation of Required Action)* CTS 3.4.a.3 states that with one or more MSSVs inoperable, they must be returned to OPERABLE status within 48 hours or a unit shutdown is required. ITS 3.7.1 ACTION A provides the requirements when one or more SGs have one MSSV inoperable and the moderator temperature coefficient (MTC) is zero or negative at all power levels,

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

and requires a reduction in THERMAL POWER to 55% RTP. ITS 3.7.1 ACTION B provides the requirements when one or more SGs have one MSSV inoperable and the MTC is positive at any power level or one or more SGs have two or three MSSVs inoperable, and requires a reduction in power level to less than the Maximum Allowable %RTP specified in Table 3.7.1-1 for the number of OPERABLE MSSVs. In addition, when in MODE 1, the Power Range Neutron Flux – High reactor trip setpoint must be reduced within 36 hours to less than or equal to the Maximum Allowable %RTP specified in table 3.7.1-1 for the number of inoperable MSSVs. The Table 3.7.1-1 Maximum Allowable Power for one inoperable MSSV is 48% RTP, for two inoperable MSSVs is 33% RTP, and for three inoperable MSSVs is 19% RTP. This changes the CTS by allowing power operation to continue for an unlimited amount of time provided THERMAL POWER is reduced to a predetermined value and in some cases, the Power Range Neutron Flux – High setpoint reduced similarly.

The 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 by providing a heat sink for removal of energy from the reactor coolant system. KPS has performed an analysis and determined that the proposed power levels of ITS 3.7.1 Required Action A.1 and ITS Table 3.7.1-1 will provide the necessary overpressure protection with one, two, or three MSSVs per SG inoperable. Therefore, this change is considered acceptable. This change is designated as less restrictive because less stringent required actions are being applied in the ITS than were applied in the CTS.

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

CTS

3.7 PLANT SYSTEMS

3.7.1 Main Steam Safety Valves (MSSVs)

3.4.a.1, 3.4.a.2 LCO 3.7.1 [Five] MSSVs per steam generator shall be OPERABLE. 2

3.4.a.1, 3.4.a.2 APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

DOC A03
---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).~~
~~---~~ 1

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
3.4.a.3	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. 55	4 hours	2 2 2
3.4.a.3	B. One or more steam generators with two or more MSSVs inoperable. [OR One or more steam generators with one MSSV inoperable and the MTC positive at any power level.]*	B.1 Reduce THERMAL POWER to less than or equal to the Maximum Allowable % RTP specified in Table 3.7.1-1 for the number of OPERABLE MSSVs. AND	4 hours	2 2

CTS

ACTIONS (continued)

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

2

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
DOC M03 SR 3.7.1.1	------------------------------NOTE------------------------------ Only required to be performed in MODES 1 and 2. -- Verify each required MSSV 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

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

DOC L01

NUMBER OF OPERABLE MSSVs PER STEAM GENERATOR	MAXIMUM ALLOWABLE POWER (% RTP)	
~~[~~4~~]~~	~~[65]~~ 48	2
3	~~[46]~~ 33	2
2	~~[28]~~ 19	2

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CTS

MSSVs
3.7.1

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

4

DOC
M03

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

2

2

2

INSERT 1

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2

INSERT 1

SD1A3	SD1B3	1074
SD1A2	SD1B4	1090
SD1A4	SD1B2	1105
SD1A1	SD1B5	1120
SD1A5	SD1B1	1127

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

1. The Reviewer's Note has been deleted. The information is for the NRC reviewer to be keyed into what is needed to meet this requirement, This is not meant to be retained in the final version of the plant specific submittal.

2. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

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

All changes are 1 unless otherwise noted

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.

~~[~~Five~~]~~ MSSVs are located on each main steam header, outside containment, upstream of the main steam isolation and non-return valves, as described in the U ~~F~~SAR, Section ~~[10.3.1]~~ 10.2.2.2 (Ref. 1). The MSSVs must have sufficient capacity to limit the secondary system pressure to ≤ 110% of the steam generator design pressure in order to meet the requirements of the ASME Code, Section III (Ref. 2). The MSSV design includes staggered setpoints, according to Table 3.7.1-2 ~~in the accompanying LCO~~, so that only the needed valves will actuate. Staggered setpoints reduce the potential for valve chattering that is due to steam pressure insufficient to fully open all valves following a turbine reactor trip. 2 6

APPLICABLE SAFETY ANALYSES

INSERT 1

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.

The events that challenge the relieving capacity of the MSSVs, and thus secondary system and RCS pressure, are those characterized as decreased heat removal events, which are presented in the U ~~F~~SAR, Section ~~[15.2]~~ 14.1 (Ref. 3). Of these, the full power loss of external load event, ~~turbine trip without steam dump~~, is typically the limiting AOO. ~~This event also terminates normal feedwater flow to the steam generators.~~ 2

The safety analysis demonstrates that the transient response for ~~turbine trip~~ loss of external load event 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

2 **INSERT 1**

The transient and accident analysis requires five MSSVs per steam generator to provide overpressure protection for design basis transients and accidents occurring from an initial power of 100.6% RTP. By relieving steam, the MSSVs prevent secondary system (Main Steam System and SG secondary side) and RCS overpressurization.

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All changes are 1 unless otherwise noted

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.

Increasing core heat flux such as the uncontrolled rod cluster control assembly (RCCA) event,

~~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 , or Pressurizer Pressure - High ΔT , ~~or~~ Power Range Neutron Flux-High setpoint is reached. ~~Steam flow to the turbine will not increase from its initial value for this event.~~ The increased heat transfer to the secondary side causes an increase in steam pressure and may result in opening of the MSSVs prior to reactor trip, assuming no credit for operation of the atmospheric or condenser steam dump valves. The U~~F~~SAR Section ~~[15.4]~~ 14.1.2 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 and RCS overpressurization for this AOO. 2

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

All changes are 1 unless otherwise noted

BASES

APPLICABLE SAFETY ANALYSES (continued)

an RCS heatup event (e.g., turbine trip). Thus, for any number of 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.~~

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. 2 2

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. 2

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.

All changes are 1 unless otherwise noted

BASES

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. 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. 2

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. 2

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):~~ 3

All changes are 1 unless otherwise noted

BASES

ACTIONS (continued)

Maximum NSSS Power ≤ (100/Q) ($w_s h_{fg}$N) / K

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. 3

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.

B.1 and B.2

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. 2 2

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All changes are 1 unless otherwise noted

BASES

ACTIONS (continued)

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

~~-----------------------------------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.~~
~~---~~ 3

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

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

C.1 and C.2

If the Required Actions are not completed within the associated Completion Time, or if one or more steam generators have ≥ ~~[~~4~~]~~ inoperable MSSVs, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

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 (Ref. 4), requires that safety and relief valve~~ MSSV tests are to be performed in accordance with ~~ANSI/~~ASME OM~~-1-1987~~ Code (Ref. ~~5~~ 4). According to Reference ~~5~~ 4, the following tests are required:

a. Visual examination~~,~~; 4

All changes are 1 unless otherwise noted

BASES

SURVEILLANCE REQUIREMENTS (continued)

b. Seat tightness determination~~,~~ ;

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

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

4

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. 2

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. ~~F~~ U SAR, Section ~~[10.3.1]~~ 10.2.2.2. 2

2. ASME, Boiler and Pressure Vessel Code, Section III, ~~Article NC-7000, Class 2 Components~~ Division 1, Subsection NB, Class 1, 1986 Edition through 1987 Addenda (for lower units) and ASME, Section III, Class C, 1965 Edition through Summer of 1966 Addenda (for steam domes). 2

3. ~~F~~ U SAR, Section ~~[15.2]~~ 14.1.

4. ASME Code for Operation and Maintenance of Nuclear Power Plants~~.~~ 1998 Edition with 2000 Addenda

~~5. ANSI/ASME OM-1-1987.~~

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

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

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 ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

3. The Reviewer's Note has been deleted. This information is for the NRC reviewer to be keyed in to what is needed to meet this requirement. This is not meant to be retained in the final version of the plant specific submittal.

4. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, TSTF-GG-05-01, Section 5.1.3.

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, MAIN STEAM ISOLATION VALVES (MSIVs)

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

ITS

A01

ITS 3.7.2

3.6 CONTAINMENT SYSTEM

APPLICABILITY

Applies to the integrity of the Containment System.

OBJECTIVE

To define the operating status of the Containment System.

SPECIFICATION

a. CONTAINMENT SYSTEM INTEGRITY shall not be violated if there is fuel in the reactor which has been used for power operation, except whenever either of the following conditions remains satisfied:

   1. The reactor is in the COLD SHUTDOWN condition with the reactor vessel head installed, or

   2. The reactor is in the REFUELING shutdown condition.

See ITS 3.6.1, 3.6.2, 3.6.8, and 3.6.9

b. Containment Isolation Valves

L01

Applicability

A02

LCO 3.7.2

   1. When CONTAINMENT SYSTEM INTEGRITY is required, all containment isolation valves and blind flanges shall be OPERABLE, except as permitted by TS 3.6.b.2 and TS 3.6.b.3.

   2. Containment Penetration flow paths can be unisolated intermittently under administrative controls. This TS does not apply to the 36" containment purge valves when they are required to be sealed closed.

See ITS 3.6.3

ACTIONS

Condition C NOTE

   3. When CONTAINMENT SYSTEM INTEGRITY is required, the following conditions of inoperability may exist during the time interval specified. Separate entry is allowed into TS 3.6.b.3 for each penetration flowpath.

M01

A03

      A. For one or more penetration flow paths with two containment isolation valves per penetration with one containment isolation valve inoperable:

         1. Return the valve to OPERABLE status within 24 hours or isolate the affected penetrations flow path by use of at least one:

            a) Closed and de-activated automatic valve, or

            b) Closed manual valve, or

            c) Blind flange, or

See ITS 3.6.3 and 3.7.3

ITS

A01

ITS 3.7.2

d) Check valve with flow through the valve secured

See ITS 3.6.3

2. Verify the affected flow path is isolated:

a) For isolation devices outside containment, at least once per 31 days, or

See ITS 3.6.3 and 3.7.3

b) For isolation devices inside containment, prior to entering INTERMEDIATE SHUTDOWN from COLD SHUTDOWN if not performed within the previous 92 days.

B. For one or more penetration flow paths with two containment isolation valves per penetration with two containment isolation valves inoperable:

1. Return at least one isolation valve to an OPERABLE status within 1 hour or isolate the affected flow path by use of at least one:

a) Closed and de-activated automatic valve, or

b) Closed manual valve, or

c) Blind flange.

2. Verify the affected flow path is isolated:

a) For isolation devices outside containment, at least once per 31 days, or

b) For isolation devices inside containment, prior to entering INTERMEDIATE SHUTDOWN from COLD SHUTDOWN if not performed within the previous 92 days.

See ITS 3.6.3

C. For one or more penetration flow paths with one containment isolation valve and a closed system per penetration with one containment isolation valve inoperable:

See ITS 3.6.3

ACTION A

1. Return the valve to OPERABLE status within ~~72~~ 24 hours or isolate the affected penetrations flow path by use of at least one:

M02

ACTION C

a) Closed and de-activated automatic valve, or

b) Closed manual valve, or

c) Blind flange.

See ITS 3.6.3

ACTION C

2. Verify the affected flow path is isolated:

7 M03

a) For isolation devices outside containment, at least once per ~~31~~ days, or

b) For isolation devices inside containment, prior to entering INTERMEDIATE SHUTDOWN from COLD SHUTDOWN if not performed within the previous 92 days.

See ITS 3.6.3

D. Valves and blind flanges in high radiation areas may be verified, as required by TS 3.6.b.3.A.2, TS 3.6.b.3.B.2, and TS 3.6.b.3.C.2, by use of administrative means.

ACTION D

4. If CONTAINMENT SYSTEM INTEGRITY is required and the OPERABILITY requirements of TS 3.6.b.3 are not met within the times specified, then initiate action to:

M04

A. Achieve HOT STANDBY within the next 6 hours,

B. Achieve HOT SHUTDOWN within the following 6 hours, and

C. Achieve ~~COLD SHUTDOWN~~ within the ~~subsequent~~ 36 hours.

L01

c. All of the following conditions shall be satisfied whenever CONTAINMENT SYSTEM INTEGRITY, as defined by TS 1.0.g, is required:

See ITS 3.6.10 and 3.7.12

1. Both trains of the Shield Building Ventilation System, including filters, shall be OPERABLE or the reactor shall be shut down within 12 hours, except that when one of the two trains of the Shield Building Ventilation System is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding 7 days.

See ITS 3.6.10

2. Both trains of the Auxiliary Building Special Ventilation System, including filters, shall be OPERABLE or the reactor shall be shut down within 12 hours, except that when one of the two trains of the Auxiliary Building Special Ventilation System is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding 7 days.

See ITS 3.7.12

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A01

4.7 MAIN STEAM ISOLATION VALVES

~~**APPLICABILITY**~~

~~Applies to periodic testing of the main steam isolation valves.~~

~~**OBJECTIVE**~~

~~To verify the ability of the main steam isolation valves to close upon signal.~~

SPECIFICATION

Add proposed SR 3.7.2.1 Note L02

in accordance with the IST Program LA02

SR 3.7.2.1 The main steam isolation valves shall be tested ~~once per operating cycle~~. A closure time of ~~5 seconds or less shall be verified~~.

each MSIV is within limits LA01

Add proposed SR 3.7.2.2 M05

DISCUSSION OF CHANGES
ITS 3.7.2, MAIN STEAM ISOLATION VALVES (MSIVs)

ADMINISTRATIVE CHANGES

A01 In the conversion of the Kewaunee Power Station (KPS) 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. 3.0, "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.

A02 CTS 3.6.b requires the containment isolation valves to be OPERABLE. ITS 3.7.2 requires the MSIVs to be OPERABLE. This changes the CTS by placing the MSIVs into a separate Specification, and not include it as part of the containment isolation specification.

The purpose of ITS 3.7.2 is to provide all the requirements for the MSIVs in a single, separate Specification. As such, this change to move the requirements to a separate Specification is acceptable since it does not result in any technical changes. Any technical changes to the current requirements are described and justified in other DOCs. This change is designated as administrative because it does not result in a technical change to the CTS.

A03 CTS 3.6.b.3 states, in part, that separate entry is allowed into TS 3.6.b.3 for each "penetration flowpath." ITS 3.7.2 Condition C Note states that separate Condition entry is allowed for each "MSIV." This changes the CTS by explicitly specifying separate condition entry for each inoperable MSIV.

This change is acceptable because it clearly states the current requirement. ITS 3.7.2 includes only MSIVs, and only one MSIV is in each penetration flowpath. Thus, allowing the Note to apply to each MFIV is consistent with the current requirements. This change is designated as administrative because it does not result in a technical change to the Specifications.

MORE RESTRICTIVE CHANGES

M01 CTS 3.6.b.3.C.1, requires that when one MSIV is inoperable, the MSIV is restored to OPERABLE status or closed within 72 hours. CTS 3.6.b.3 allows separate condition entry for each inoperable MSIV. ITS 3.7.2 ACTION A does not include the allowance for separate Condition entry when in MODE 1. This changes the CTS by eliminating the allowance for separate Condition entry when in MODE 1.

The purpose of CTS 3.6.b.3.C.1 is to provide compensatory measures to be taken if an MSIV is inoperable. The Kewaunee design includes two RCS loops and two steam generators, each with a single MSIV. Therefore, it is not currently possible for Kewaunee to close one of the two MSIVs and operate in MODE 1 with a single steam generator in service. Thus, Kewaunee cannot use this CTS allowance in MODE 1. If an MSIV is inoperable, the restoration requirement must be met or a unit shutdown to MODE 2 is required. Therefore, since this

DISCUSSION OF CHANGES
ITS 3.7.2, MAIN STEAM ISOLATION VALVES (MSIVs)

allowance cannot be used, and the ITS retains a requirement to restore compliance with the LCO, this change is acceptable. This change is designated as more restrictive because an allowance for separate condition entry for inoperable MSIVs in MODE 1 is being deleted from the CTS.

M02 CTS 3.6.b.3.C.1, requires that when an MSIV is inoperable, the MSIV is restored to OPERABLE status or closed within 72 hours. ITS 3.7.2 ACTION A allows 24 hours to restore an inoperable MSIV in MODE 1. ITS 3.7.2 ACTION C allows 24 hours to close an inoperable MSIV when in MODE 2 or 3. This changes the time allowed in the CTS to restore an inoperable MSIV from 72 hours to 24 hours when in MODE 1, and changes the time to close an inoperable MSIV from 72 hours to 24 hours when in MODE 2 or 3.

The purpose of CTS 3.6.b.3.C.1 is to provide time to restore or close the inoperable MSIVs. 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 change is designated as more restrictive because less time is allowed to meet the Required Actions of the specified Condition than was allowed in the CTS.

M03 CTS 3.6.b.3.C.2, requires verification that the inoperable MSIV is isolated every 31 days. ITS 3.7.2 Required Action C.2 requires a similar verification every 7 days. This changes the CTS by requiring the verification every 7days in lieu of every 31 days.

The purpose of CTS 3.6.b.3.C.2 is to periodically verify that the isolated MSIV remains isolated until it is restored to OPERABLE status. This change is acceptable because the Required Action is performed to ensure the assumptions of the accident analysis remain valid. The 7 day Completion Time is reasonable, in view of MSIV status indication in the control room, and other administrative controls, to ensure that these valves are in the closed position. This change is considered more restrictive because less time is provided to verify an inoperable MSIV is closed in the ITS than is provided in the CTS.

M04 CTS 3.6.b.4, in part, requires that if the MSIV actions of CTS 3.6.b.3 are not met, then initiate action to achieve HOT STANDBY in 6 hours and HOT SHUTDOWN within the following 6 hours. Under similar conditions in MODE 1, ITS 3.7.3 ACTION B requires the unit to be in MODE 2 (equivalent to CTS HOT STANDBY) in 6 hours. Under similar conditions in MODES 2 and 3, Required Action D.1 requires the unit to be in MODE 3 (equivalent to CTS HOT SHUTDOWN) within 6 hours. For MODE 1, the CTS and ITS are the same, For MODES 2 and 3, this deletes the requirement to be in HOT STANDBY (equivalent to ITS MODE 2) within 6 hours and changes the time required to be in MODE 3 from 12 hours to 6 hours.

The purpose of CTS 3.6.b.4 is to place the unit in a condition in which the LCO does not apply. 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

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DISCUSSION OF CHANGES
ITS 3.7.2, MAIN STEAM ISOLATION VALVES (MSIVs)

allowed Completion Time. Allowing 6 hours to be in MODE 3 in lieu of the current 12 hours ensures a unit shutdown is commenced and completed within a reasonable period of time upon failure to meet the inoperable MSIV compensatory measures. Additionally, since ITS 3.7.2 Required Action D.1 requires the unit to be in MODE 3 within 6 hours, there is no need to maintain the requirement to be in MODE 2 within 6 hours. This change is designated as more restrictive because less time is allowed for the unit to reach MODE 3 than was allowed in the CTS.

M05 CTS 4.7 does not include a requirement to verify that each MSIV actuates to the isolation position on an actual or simulated actuation signal. ITS SR 3.7.2.2 is being added to perform this requirement every 18 months. This changes the CTS by adding a new Surveillance Requirement.

The purpose of ITS SR 3.7.2.2 is to verify that the MSIVs can close on an actual or simulated actuation signal. This change is acceptable because the test is conducted to ensure that the MSIVs will perform their safety function. The 18 month Frequency is consistent with CTS 4.7, which requires the isolation time of each MSIV to be measured once per operating cycle. This change is considered more restrictive because a new Surveillance Requirement is added to the ITS that is not included in the CTS.

<u>RELOCATED SPECIFICATIONS</u>

None

<u>REMOVED DETAIL CHANGES</u>

LA01 *(Type 3 - Removing Procedural Detail for Meeting TS Requirements or Reporting Requirements)* CTS 4.7 states the main steam isolation valves shall be tested once per operating cycle with a closure time of 5 seconds or less. ITS SR 3.7.2.1 does not include the closure time limits. This changes the CTS by moving the MSIV closure time limit to the Technical Requirements Manual (TRM).

The removal of this detail, for performing Surveillance Requirements, from the Technical Specifications is acceptable because this type of information is not necessary to be in the Technical Specifications in order to provide adequate protection of the public health and safety. The ITS retains the requirement to verify that the isolation time of each MSIV is within limits. Also, this change is acceptable because these types of procedural details will be adequately controlled in the TRM. The TRM is incorporated by reference into the USAR 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 procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LA02 *(Type 3 - Removing Procedural Detail for Meeting TS Requirements or Reporting Requirements)* CTS 4.7 requires the MSIV closure time to be verified once per

DISCUSSION OF CHANGES
ITS 3.7.2, MAIN STEAM ISOLATION VALVES (MSIVs)

operating cycle. ITS SR 3.7.2.1 requires a similar verification in accordance with the Inservice Testing Program. This changes the CTS by moving the specific Frequency for this test (once per operating cycle) to the Inservice Testing (IST) Program.

The removal of this detail, for performing Surveillance Requirements, from the Technical Specifications is acceptable because the Frequency for the verification has not changed. The Kewaunee IST Program requires this verification every 18 months, which is the current Kewaunee Power Station operating cycle. Therefore, this type of information is not necessary to be in the Technical Specifications in order to provide adequate protection of the public health and safety. The ITS retains the requirement to verify that the isolation time of each MSIV is within limits at a Frequency of in accordance with the IST Program. Also, this change is acceptable because these types of details will be adequately controlled in the IST Program, which is controlled by 10 CFR 50.55a. This change is designated as a less restrictive removal of detail change because details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L01 *(Category 2 - Relaxation of Applicability)* CTS 3.6.b requires the MSIVs to be OPERABLE when CONTAINMENT INTEGRITY is required. CTS 3.6.a requires CONTAINMENT SYSTEM INTEGRITY in all conditions, except COLD SHUTDOWN with the vessel head installed and REFUELING (i.e., it is required in MODES 1, 2, 3, and 4). Furthermore, when one or more MSIVs are inoperable and a unit shutdown is required by CTS 3.6.b.4, the unit must be in HOT STANDBY (MODE 2) within 6 hours, HOT SHUTDOWN (MODE 3) within the following 6 hours, and in COLD SHUTDOWN (MODE 5) within the subsequent 36 hours. ITS 3.7.2 requires the MSIVs to be OPERABLE in MODE 1, and MODES 2 and 3 except when all MSIVs are closed and de-activated. When a shutdown of the unit is required due to an inoperable MSIV, ITS 3.7.2 ACTION D requires the unit to be in MODE 3 within 6 hours and MODE 4 within 12 hours. This changes the CTS by making the Specification not applicable in MODES 2 and 3 when all MSIVs are closed and de-activated, and in MODE 4. Due to this change, the shutdown action has also been changed to only require entry into MODE 4, which exits the new Applicability. The change to the requirements to be in HOT STANDBY and HOT SHUTDOWN are described in DOC M03.

The purpose of the MSIV requirements in CTS 3.6.b is to ensure the MSIVs can be isolated if a main steam line break (MSLB) occurs. Following a steam generator tube rupture, the MSIV downstream of the ruptured steam generator isolates the ruptured steam generator from the intact steam generator to establish control of fission products released to the secondary system from the primary system. Furthermore, the MSIVs are not subject to 10 CFR 50 Appendix J, Option B leak rate testing. Thus, leakage through these valves is not included in the Type C leakage limit. Additionally, when the valves are in the closed position, they are in their assumed accident position. Therefore, this change is acceptable because the requirement continues to ensure that the structures,

DISCUSSION OF CHANGES
ITS 3.7.2, MAIN STEAM ISOLATION VALVES (MSIVs)

systems, components are maintained in the MODES and other specified conditions assumed in the safety analyses and licensing basis. Due to this change in Applicability, the shutdown action has also been modified to only require entering MODE 4, which will exit the new Applicability. The proposed time to reach MODE 4 is reasonable, based on operating experience, to reach MODE 4 from full power conditions in an orderly manner and without challenging plant systems. This change is designated as less restrictive because the ITS LCO requirements are applicable in fewer operating conditions than in the CTS.

L02 (Category *7- Relaxation Of Surveillance Frequency)* CTS 4.7 states that the main steam isolation valves shall be tested once per operating cycle to verify a closure time of 5 seconds or less. ITS SR 3.7.2.1 requires a similar test, but Note modifying ITS SR 3.7.2.1 allows that the SR is not required to be performed in MODES 2 and 3 until 12 hours after the MSIVs are open. This changes the CTS by allowing entry into MODES 2 and 3 under certain conditions without performing the Surveillance Requirement.

The purpose of CTS 4.7 is to demonstrate that the closure time of each MSIV is within the limits assumed in the containment and accident analyses. This test is normally conducted in MODE 2 with the unit at operating temperature and pressure. Addition of the NOTE modifying the Surveillance Requirement allows a delay in testing until MODE 2, to establish conditions consistent with those for which the acceptance criterion was generated. Once the MSIVs are opened when in MODE 2 or 3, 12 hours is allowed to perform the SR. This provides the necessary time to perform the SR, but restricts the time the SR is not performed with the MSIVs open when in these MODES. This change is designated as less restrictive because the ITS Surveillance Requirement is required to be performed in fewer operating conditions than in the CTS.

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

CTS

MSIVs
3.7.2

All changes are 1 unless otherwise noted

3.7 PLANT SYSTEMS

3.7.2 Main Steam Isolation Valves (MSIVs)

3.6.b.1 LCO 3.7.2 ~~[Four]~~ Two MSIVs shall be OPERABLE.

3.6.b.1 APPLICABILITY: MODE 1,
MODES 2 and 3 except when all MSIVs are closed ~~[~~and de-activated~~]~~.

ACTIONS

CTS	CONDITION	REQUIRED ACTION	COMPLETION TIME	
3.6.b.3.C	A. One MSIV inoperable in MODE 1.	A.1 Restore MSIV to OPERABLE status.	~~[8]~~ 24 hours	2
3.6.b.4	B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 2.	6 hours	
3.6.b.3 3.6.b.3.C	C. ------------NOTE------------ Separate Condition entry is allowed for each MSIV. --------------------------------- One or more MSIVs inoperable in MODE 2 or 3.	C.1 Close MSIV. AND C.2 Verify MSIV is closed.	~~[8]~~ 24 hours Once per 7 days	2
3.6.b.4	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	

CTS

All changes are 1 unless otherwise noted

SURVEILLANCE REQUIREMENTS

CTS		SURVEILLANCE	FREQUENCY	
4.7	SR 3.7.2.1	-------------------------------NOTE------------------------------ ~~Only required to be performed in MODES 1 and 2.~~ Not required to be performed in MODES 2 and 3 until 12 hours after the MSIVs are open. --- Verify the isolation time of each MSIV is ~~≤ [4.6] seconds~~ within limits.	In accordance with the Inservice Testing Program	3 TSTF-491-A
DOC M05	SR 3.7.2.2	-------------------------------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.	[18] months	

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JUSTIFICATION FOR DEVIATIONS
ITS 3.7.2, MAIN STEAM ISOLATION VALVES (MSIVs)

1. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

2. ISTS 3.7.2 Required Actions A.1 and C.1 provide a bracketed 8 hours to restore an inoperable MSIV to OPERABLE status (A.1) or to close the MSIV (C.1). CTS 3.6.b.3.C provides the Actions for an inoperable MSIV, since the MSIVs are containment isolation valves that isolate closed system penetrations. The CTS provides a 72 hour time to either restore the inoperable MSIV or to isolate the affected penetration. This allowance was approved by the NRC in Amendment No. 155, as documented in the NRC Safety Evaluation, dated June 8, 2001 (ADAMS accession No. ML011650102). Since the currently allowed 72 hours is much longer than the bracketed 8 hour time in the ISTS, and to bring the Completion Time more in line with the ISTS, Dominion Energy Kewaunee (DEK) has decided to reduce the Completion Time to 24 hours, consistent with the containment isolation valves associated with non-closed system penetrations.

3. ISTS SR 3.7.2.1 includes a Note that allows entry into MODE 3 without the SR being performed. This allows the SR to be performed at temperatures and pressures closer to operating temperature and pressure, in order to more closely match the conditions under which the MSIVs need to be closed within the 5 second time limit. Normally, the stroke time test is performed during a shutdown. However, if maintenance is performed on the MSIVs, the test needs to be re-performed sometime during the startup. Following maintenance, the MSIVs are stroked prior to entering MODE 3 to ensure they are OPERABLE and will close if required. However, the actual stroke time test of record is not performed until MODE 2. At KPS, the steam lines cannot be kept warm with the MSIVs open in MODE 3. Thus, the MSIVs are normally kept closed (after initial stroke test) in MODE 3 and in MODE 2 until after the unit is critical in MODE 2 and physics tests are complete. At that time, the MSIVs are opened and the timing test is performed. Therefore, KPS is changing the Note to state "Not required to be performed in MODES 2 and 3 until 12 hours after the MSIVs are open." This proposed Note will allow entry into both MODES 2 and 3, provided the MSIVs are closed. Within 12 hours after opening the MSIVs in either MODE 2 or 3, SR 3.7.2.1 will be required to be performed. This 12 hour time limits the time the MSIVs are open in both MODES 2 and 3 without the SR being performed. The Note also does not discuss any exception to MODE 1, thus the SR is required to be performed prior to entry into MODE 1, consistent with the ISTS Note. Furthermore, if the unit is started up with the MSIVs open (which while not normally done, can be done this way), the SR must be performed within 12 hours after entering MODE 3. This is actually more restrictive than the ISTS since the MSIVs must remain closed to use the allowance. The LCO does not require the MSIVs to be OPERABLE in MOES 2 and 3 if they are closed and deactivated. While the MSIVs are not required to be deactivated in the Note, the MSIVs are closed and their operation is closely controlled by plant procedures.

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

B 3.7 PLANT SYSTEMS

B 3.7.2 Main Steam Isolation Valves (MSIVs)

BASES

BACKGROUND

The MSIVs isolate steam flow from the secondary side of the steam generators following a ~~high energy~~ line break (~~HE~~LB). MSIV closure terminates flow from the unaffected (intact) steam generator~~s~~.

main steam MS 1

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

Dump 1

. INSERT 1

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

as is on loss of control power and (i.e., air) 1 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

INSERT 2 U 2

A description of the MSIVs is found in the ~~F~~SAR, Section ~~[~~10.~~3]~~ (Ref. 1).

1 2

APPLICABLE SAFETY ANALYSES

integrity

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

14.2.5 U

integrity and the accident analysis of the SLB events as

The limiting case for the containment analysis is the SLB inside containment, ~~with a loss of offsite power following turbine trip, and failure of the MSIV on the affected steam generator to close~~. At lower powers, the steam generator inventory and temperature are at their maximum, maximizing the analyzed mass and energy release to the containment. ~~Due to reverse flow and failure of the MSIV to close, the additional mass and energy in the steam headers downstream from the other MSIV~~

with offsite power available and failure of a safeguards train

1

1 **INSERT 1**

Individual MSIV closures will occur upon receipt of a Safety Injection concurrent with High-High Steam Flow signals or a Safety Injection, a High Steam Flow, and a Lo-Lo T_{avg} signal. Both MSIVs will close upon receipt of a Containment High-High pressure signal.

1 **INSERT 2**

In addition to the fast-closing stop valve, each steam line has a downstream non-return check valve (NRCV). The four valves (one MSIV and one NCRV in each of the two lines) prevent blowdown of more than one steam generator for any break location even if one valve fails to close.

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BASES

APPLICABLE SAFETY ANALYSES (continued)

~~contribute to the total release.~~ With the most reactive rod cluster control assembly assumed stuck in the fully withdrawn position, there is an 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. 1

INSERT 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 to close. 1

The MSIVs serve only a safety function and remain open during power operation. These valves operate under the following situations:

MSLB

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.~~ 1

INSERT 4

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. 1

non-return check valve in the affected loop
(or the MSIV in the unfaulted loop)

1

INSERT 3

The analysis of several different SLB events is performed to demonstrate that the acceptance criteria listed in the USAR are satisfied. The events analyzed are containment response due to a large SLB inside of containment; core response due to a large SLB inside of containment; and small SLB.

1

INSERT 4

For this accident scenario, steam is discharged into containment from both steam generators until the NRCV on the broken line (or MSIV on the intact line) closes. After the valve closes, steam is discharged into containment only from the affected steam generator and from the residual steam in the main steam header between the closed valve and the affected steam generator. Closure of the NRCV in the affected line (or the MSIV in the intact line) isolates the break from the unaffected steam generator.

BASES

APPLICABLE SAFETY ANALYSES (continued)

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

d. Following a steam generator tube rupture, closure of the MSIV~~s~~ downstream of the ruptured generator isolates the ruptured steam generator from the intact steam generators to minimize radiological releases. 1

~~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.~~ 1

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

LCO

This LCO requires that the ~~[four]~~ MSIV~~s~~ in both ~~the~~ steam lines be OPERABLE. The MSIVs are considered OPERABLE when the isolation times are within limits, and they close on an isolation actuation signal. 2 3

This LCO provides assurance that the MSIVs will perform their design safety function to mitigate the consequences of accidents that could result in offsite exposures comparable to the 10 CFR ~~100~~ 50.67 (Ref. ~~4~~ 3) limits or the NRC staff approved licensing basis. 1

APPLICABILITY

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

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

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

ACTIONS

A.1

With one MSIV inoperable in MODE 1, action must be taken to restore OPERABLE status within 24 ~~[8]~~ hours. Some repairs to the MSIV can be made with the unit hot. The 24 ~~[8]~~ hour Completion Time is reasonable, considering the low probability of an accident occurring during this time period that would require a closure of the MSIVs. 6

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ACTIONS (continued)

24 consistent with

The [8] hour Completion Time is greater than that normally allowed for containment isolation valves because the MSIVs are valves that isolate a closed system penetrating containment. These valves differ from other containment isolation valves in that the closed system provides an additional means for containment isolation. 6

that isolate a non-closed system penetrating containment.

B.1

24

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

C.1 and C.2

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

must

Since the MSIVs are required to be OPERABLE in MODES 2 and 3, the inoperable MSIVs may either be restored to OPERABLE status or closed. When closed, the MSIVs are already in the position required by the assumptions in the safety analysis. 5

24

The [8] hour Completion Time is consistent with that allowed in Condition A. 6

For inoperable MSIVs that cannot be restored to OPERABLE status within the specified Completion Time, but are closed, the inoperable MSIVs must be verified on a periodic basis to be closed. This is necessary to ensure that the assumptions in the safety analysis remain valid. The 7 day Completion Time is reasonable, based on engineering judgment, in view of MSIV status indications available in the control room, and other administrative controls, to ensure that these valves are in the closed position. 5

BASES

ACTIONS (continued)

D.1 and D.2

If the MSIVs ~~cannot be restored to OPERABLE status or~~ are not closed within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed at least in MODE 3 within 6 hours, and in MODE 4 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from MODE 2 conditions in an orderly manner and without challenging unit systems. 5

SURVEILLANCE REQUIREMENTS

SR 3.7.2.1

the | of each MSIV | within the limit given in Reference 4 and is within that

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~~ SR 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 (Ref. 5), requirements during operation in MODE 1 or 2. TSTF-491-A

This SR also verifies the valve closure time is in accordance with the Inservice Testing Program.

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~~ MODES 2 and 3 prior to performing the SR, provided the MSIVs are closed. Once the MSIVs are opened in MODE 2 or 3, the SR must be performed within 12 hours. In addition, if the MSIVs are open when entering MODE 3, then the SR must be performed within 12 hours after entering MODE 3. This allows a delay of testing until ~~MODE 3~~ 12 hours after the MSIVs are opened in MODE 2 or 3, to establish conditions consistent with those under which the acceptance criterion was generated. 3

SR 3.7.2.2

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. 2 2

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BASES

REFERENCES

U

1. ~~F~~SAR, Section ~~[~~10.~~3~~]. 2

2. ~~F~~SAR, Section ~~[6.2]~~. 14.2.5

~~3. FSAR, Section [15.1.5].~~

1 2

3 ~~4~~. 10 CFR ~~100.11~~. 50.67

4. Technical Requirements Manual.

TSTF-491-A

5. ASME Code for Operation and Maintenance of Nuclear Power Plants.

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JUSTIFICATION FOR DEVIATIONS
ITS 3.7.2 BASES, MAIN STEAM ISOLATION VALVES (MSIVs)

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 ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

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

4. Changes are made to reflect the actual Specification. ACTION B does not require the inoperable MSIV to be closed.

5. Changes are made to reflect the actual Specification. ACTIONS C and D do not state to restore the inoperable MSIVs to OPERABLE status.

6. The Completion Times for Required Actions A.1 and C.1 have been changed to 24 hours, consistent with the change to the actual Specification. The justification for this change is provided in ITS 3.7.2 JFD 2.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.2, MAIN STEAM ISOLATION VALVES (MSIVs)

There are no specific NSHC discussions for this Specification.

ATTACHMENT 3

ITS 3.7.3, MAIN FEEDWATER ISOLATION VALVES (MFIVs), MAIN FEEDWATER REGULATION VALVES (MFRVs), AND MFRV BYPASS VALVES

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

ITS

A01

ITS 3.7.3

3.6 CONTAINMENT SYSTEM

APPLICABILITY

Applies to the integrity of the Containment System.

OBJECTIVE

To define the operating status of the Containment System.

SPECIFICATION

a. CONTAINMENT SYSTEM INTEGRITY shall not be violated if there is fuel in the reactor which has been used for power operation, except whenever either of the following conditions remains satisfied:

1. The reactor is in the COLD SHUTDOWN condition with the reactor vessel head installed, or

2. The reactor is in the REFUELING shutdown condition.

See ITS 3.6.1, 3.6.2, 3.6.8, and 3.6.9

b. Containment Isolation Valves

L01

Applicability

LCO 3.7.3

1. When CONTAINMENT SYSTEM INTEGRITY is required, all containment isolation valves and blind flanges shall be OPERABLE, except as permitted by TS 3.6.b.2 and TS 3.6.b.3.

A02

2. Containment Penetration flow paths can be unisolated intermittently under administrative controls. This TS does not apply to the 36" containment purge valves when they are required to be sealed closed.

See ITS 3.6.3

ACTIONS

ACTIONS NOTE

3. When CONTAINMENT SYSTEM INTEGRITY is required, the following conditions of inoperability may exist during the time interval specified. Separate entry is allowed into TS 3.6.b.3 for each penetration flowpath.

A03

A. For one or more penetration flow paths with two containment isolation valves per penetration with one containment isolation valve inoperable:

See ITS 3.6.3

A04

ACTION A, ACTION D

1. Return the valve to OPERABLE status within 24 hours or isolate the affected penetrations flow path by use of at least one:

M01

L02

a) Closed and de-activated automatic valve, or

See ITS 3.6.3

Applicability

b) Closed manual valve, or

c) Blind flange, or

See ITS 3.6.3

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06/08/2001

ITS

A01

ITS 3.7.3

d) Check valve with flow through the valve secured

See ITS 3.6.3

ACTION A

2. Verify the affected flow path is isolated:

M02

7

a) For isolation devices outside containment, at least once per ~~31~~ days, or

b) For isolation devices inside containment, prior to entering INTERMEDIATE SHUTDOWN from COLD SHUTDOWN if not performed within the previous 92 days.

B. For one or more penetration flow paths with two containment isolation valves per penetration with two containment isolation valves inoperable:

1. Return at least one isolation valve to an OPERABLE status within 1 hour or isolate the affected flow path by use of at least one:

See ITS 3.6.3

a) Closed and de-activated automatic valve, or

b) Closed manual valve, or

c) Blind flange.

2. Verify the affected flow path is isolated:

a) For isolation devices outside containment, at least once per 31 days, or

b) For isolation devices inside containment, prior to entering INTERMEDIATE SHUTDOWN from COLD SHUTDOWN if not performed within the previous 92 days.

C. For one or more penetration flow paths with one containment isolation valve and a closed system per penetration with one containment isolation valve inoperable:

1. Return the valve to OPERABLE status within 72 hours or isolate the affected penetrations flow path by use of at least one:

See ITS 3.6.3 and 3.7.2

a) Closed and de-activated automatic valve, or

b) Closed manual valve, or

c) Blind flange.

ITS

A01

ITS 3.7.3

2. Verify the affected flow path is isolated:

a) For isolation devices outside containment, at least once per 31 days, or

See ITS 3.6.3 and 3.7.2

b) For isolation devices inside containment, prior to entering INTERMEDIATE SHUTDOWN from COLD SHUTDOWN if not performed within the previous 92 days.

D. Valves and blind flanges in high radiation areas may be verified, as required by TS 3.6.b.3.A.2, TS 3.6.b.3.B.2, and TS 3.6.b.3.C.2, by use of administrative means.

See ITS 3.6.3

ACTION E

4. If CONTAINMENT SYSTEM INTEGRITY is required and the OPERABILITY requirements of TS 3.6.b.3 are not met within the times specified, then initiate action to:

A. Achieve HOT STANDBY within the next 6 hours,

B. Achieve HOT SHUTDOWN within the following 6 hours, and

M03

C. Achieve COLD SHUTDOWN within the subsequent 36 hours.

L01

c. All of the following conditions shall be satisfied whenever CONTAINMENT SYSTEM INTEGRITY, as defined by TS 1.0.g, is required:

See ITS 3.6.10 and 3.7.12

1. Both trains of the Shield Building Ventilation System, including filters, shall be OPERABLE or the reactor shall be shut down within 12 hours, except that when one of the two trains of the Shield Building Ventilation System is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding 7 days.

See ITS 3.6.10

2. Both trains of the Auxiliary Building Special Ventilation System, including filters, shall be OPERABLE or the reactor shall be shut down within 12 hours, except that when one of the two trains of the Auxiliary Building Special Ventilation System is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding 7 days.

See ITS 3.7.12

Add proposed SR 3.7.3.1 and SR 3.7.3.2 for MFIVs

M04

Add proposed LCO 3.7.3 and Applicability for MFRVs and MFRV Bypass Valves

Add proposed ACTIONS B, C, D, and E for MFRVs and MFRV Bypass Valves

Add proposed SR 3.7.3.1 and SR 3.7.3.2 for MFRVs and MFRV Bypass Valves

M05

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

ADMINISTRATIVE CHANGES

A01 In the conversion of the Kewaunee Power Station (KPS) 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. 3.0, "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

A02 CTS 3.6.b requires the containment isolation valves to be OPERABLE. ITS 3.7.3, in part, requires the MFIVs to be OPERABLE. This changes the CTS by placing the MFIVs into a Specification with the other main feedwater isolation valves (MFIVs); i.e., the MFRVs and MFRV bypass valves.

The purpose of ITS 3.7.3 is to provide all the requirements for the Main Feedwater Valves (MFIVs, MFRVs, and MFRV bypass valves) in a single Specification. As such, this change to move the requirements to a separate Specification is acceptable since it does not result in any technical changes. Any technical changes to the current requirements are described and justified in other DOCs. This change is designated as administrative because it does not result in a technical change to the CTS.

A03 CTS 3.6.b.3 states, in part, that separate entry is allowed into TS 3.6.b.3 for each "penetration flowpath." ITS 3.7.3 ACTIONS Note states that separate Condition entry is allowed for each "valve." This changes the CTS by explicitly specifying separate condition entry for each inoperable MFIV.

This change is acceptable because it clearly states the current requirement. ITS 3.7.3 includes MFIVs, MFRVs, and MFRV bypass valves. Of these three, only the MFIV is a Containment Isolation Valve. Thus, allowing the Note to apply to each MFIV is consistent with the current requirements. This change is designated as administrative because it does not result in a technical change to the Specifications.

A04 When one or more of the MFIVs are inoperable, CTS 3.6.b.3.A requires restoring the inoperable valve to OPERABLE status within 24 hours or taking one of the other specified compensatory actions. ITS 3.7.3 does not state the requirement to restore an inoperable isolation valve to OPERABLE status, but includes other compensatory Required Actions to take within 72 hours or 8 hours, as applicable. This changes the CTS by not explicitly stating the requirement to restore an inoperable valve to OPERABLE status. The change in the time allowed to meet the compensatory Required Actions (72 hours and 8 hours) is discussed in DOCs L03 and M01).

This change is acceptable because the technical requirements have not changed. Restoration of compliance with the LCO is always an available Required Action and it is the convention in the ITS to not state such "restore" options explicitly unless it is the only action or is required for clarity. This change

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

is designated as administrative because it does not result in any technical changes to the CTS.

MORE RESTRICTIVE CHANGES

M01 CTS 3.6.b.3.A.1 allows 24 hours to isolate the affected penetration when one or more of the MFIVs are inoperable. ITS 3.7.3 ACTION D will only allow 8 hours to close or isolate the MFIV if the MFRV or MFRV bypass valve in the same line is concurrently inoperable. The changes the CTS by decreasing the time allowed to isolate the penetration when both an MFIV and a MFRV or its MFRV bypass valve in the same line are inoperable.

The purpose of CTS 3.6.b.3.A.1 is to provide a degree of assurance that the affected flow path with an inoperable MFIV maintains the containment penetration isolation boundary. This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, the capacity and capability of remaining features, a reasonable time for repairs or replacement of required features, and the low probability of a DBA occurring during the allowed Completion Time. The proposed time is acceptable since both valves in the penetration are inoperable. This change is designated as more restrictive because less time is allowed to isolate the MFIVs than was allowed in the CTS.

M02 CTS 3.6.b.3.A.2.a) requires a verification that the inoperable MFIV is isolated every 31 days. ITS 3.7.3 Required Action A.2 requires a similar verification every 7 days. This changes the CTS by requiring the verification every 7 days in lieu of every 31 days.

The purpose of CTS 3.6.b.2.A.2.a) is to verify the isolated MFIV remains isolated until it is restored to OPERABLE status. The change is acceptable since the verification is now being performed on a more frequent basis. This change is designated more restrictive since a 31 days verification required by the CTS is now being performed every 7 days in the ITS.

M03 CTS 3.6.b.4, in part, requires that if the MFIV actions of CTS 3.6.b.3 are not met, then initiate action to achieve HOT STANDBY in 6 hours and HOT SHUTDOWN within the following 6 hours. Under similar conditions, ITS 3.7.3 Required Action E.1 requires the unit to be in MODE 3 (equivalent to CTS HOT SHUTDOWN) within 6 hours. This deletes the requirement to be in HOT STANDBY (equivalent to ITS MODE 2) within 6 hours and changes the time required to be in MODE 3 from 12 hours to 6 hours.

The purpose of CTS 3.6.b.4 is to place the unit in a condition in which the LCO does not apply. 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 6 hours to be in MODE 3 in lieu of the

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

current 12 hours ensures a unit shutdown is commenced and completed within a reasonable period of time upon failure to meet the inoperable MFIV compensatory measures. Additionally, since ITS 3.7.3 Required Action E.1 requires the unit to be in MODE 3 within 6 hours, there is no need to maintain the requirement to be MODE 2 within 6 hours. This change is designated as more restrictive because less time is allowed for the unit to reach MODE 3 than was allowed in the CTS.

M04 CTS 3.6.b does not provide a Surveillance Requirement to verify the isolation time of each MFIV is within limits. The ITS adds a Surveillance Requirement (SR 3.7.3.1) to verify the isolation time of each MFIV is within limits in accordance with the Inservice Testing Program. CTS 3.6.b does not provide a Surveillance Requirement to verify each MFIV actuates to the isolation position on an actual or simulated actuation signal. The ITS adds a Surveillance Requirement (SR 3.7.3.2) to verify each MFIV actuates to the isolation position on an actual or simulated actuation signal once every 18 months. This changes the CTS by adding new Surveillance Requirements for the MFIVs.

This change is acceptable because the added Surveillance Requirements prove that the MFIVs are capable of isolating to the accident position when required. This change is designated as more restrictive because new Surveillance Requirements are added.

M05 The CTS does not include any requirements for the Main Feedwater Regulation Valves (MFRVs) and MFRV bypass valves. ITS 3.7.3 requires the MFRVs and MFRV bypass valves to be OPERABLE in MODES 1, 2, 3 except when all MFRVs and MFRV bypass valves are closed and de-activated. Commensurate with the new LCO requirement, ACTIONS and Surveillance Requirements have also been added. ITS 3.7.3 ACTION B allows 72 hours to close or isolate the MFRV when a MFRV is inoperable, and once isolated, will require verification that the flow path remains isolated every 7 days. ITS 3.7.3 ACTION C allows 72 hours to close or isolate the MFRV bypass valve when an MFRV bypass valve is inoperable, and once isolated, will require verification that the flow path remains isolated every 7 days. If a MFRV or an MFRV bypass valve and a MFIV in the same flow path are concurrently inoperable, ITS 3.7.3 ACTION D allows 8 hours to isolate the affected flow path. ITS 3.7.3 ACTION E states that if the Required Action and associated Completion Time (i.e., of Conditions B, C, or D for MFRVs and MFRV bypass valves) is not met, be in MODE 3 in 6 hours and be in MODE 4 in 12 hours. All the ACTIONS are modified by the ACTIONS Note, which allows separate Condition entry for each valve. ITS SR 3.7.3.1 verifies the isolation time of each MFRV and MFRV bypass valve in accordance with the Inservice Testing Program. ITS SR 3.7.3.2 verifies each MFRV and MFRV bypass valve actuates to the isolation position on an actual or simulated actuation signal every 18 months. This changes the CTS by adding new MFRV and MFRV bypass valve requirements, including LCO requirements, ACTIONS, and Surveillance Requirements.

The purpose of the ITS 3.7.3 is to ensure that the MFRVs and MFRV bypass valves are OPERABLE and capable of closing to support the safety analyses. Alternately, ACTIONS are provided to compensate for their inoperability. In

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

addition, Surveillance requirements help ensure their OPERABILITY. This change is acceptable because the requirements continue to ensure that the structures, systems, components are maintained in the MODES and other specified conditions assumed in the safety analyses and licensing basis. This change is designated as more restrictive because it adds new requirements for the MFRVs and associated bypass valves to the CTS.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

None

LESS RESTRICTIVE CHANGES

L01 *(Category 2 – Relaxation of Applicability)* CTS 3.6.b requires the MFIVs to be OPERABLE when CONTAINMENT SYSTEM INTEGRITY is required. CTS 3.6.a requires CONTAINMENT SYSTEM INTEGRITY in all conditions, except COLD SHUTDOWN and REFUELING (i.e., it is required in MODES 1, 2, 3, and 4). Furthermore, when one or more MFIVs are inoperable and a unit shutdown is required by CTS 3.6.b.4, the unit must be in HOT STANDBY (MODE 2) within 6 hours, HOT SHUTDOWN (MODE 3) within the following 6 hours, and in COLD SHUTDOWN (MODE 5) within the subsequent 36 hours. ITS 3.7.3 requires the MFIVs to be OPERABLE in MODES 1, 2, and 3 except when all MFIVs, MFRVs, and associated bypass valves are closed and de-activated. When a shutdown of the unit is required due to an inoperable MFIV, ITS 3.7.3 ACTION E requires the unit to be in MODE 3 within 6 hours and MODE 4 within 12 hours. This changes the CTS by making the Specification not applicable in MODES 1, 2, and 3 when all MFIVs, MFRVs, and associated bypass valves are closed and de-activated and by deleting the MODE 4 requirements. Due to this change, the shutdown action has also been changed to only require entry into MODE 4, which exits the new Applicability. The change to the requirements to be in HOT STANDBY and HOT SHUTDOWN are described in DOC M03.

The purpose of the MFIV requirements in CTS 3.6.b is to ensure the MFIVs can be isolated if a main steam line break (MSLB) or feedwater line break (FWLB) occurs. The MFIVs help isolate the steam generators to establish control of fission products released to the secondary system from the primary system following an MSLB or FWLB. Furthermore, the MFIVs are not subject to 10 CFR 50 Appendix J, Option B leak rate testing. Thus, leakage through these valves is not included in the type C leakage limit. In addition, the associated penetrations do not communicate with the containment atmosphere or the reactor coolant pressure boundary. Furthermore, when all the valves are in the closed position or are isolated by a closed manual valve, they (or their flowpath) are in their assumed accident position. Therefore, this change is acceptable because the

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

requirements continue to ensure that the structures, systems, components are maintained in the MODES and other specified conditions assumed in the safety analyses and licensing basis. Due to this change in Applicability, the shutdown action has also been modified to only require entering MODE 4, which will exit the new Applicability. The proposed time to reach MODE 4 is reasonable, based on operating experience, to reach MODE 4 from full power conditions in an orderly manner and without challenging plant systems. This change is designated as less restrictive because the ITS LCO requirements are applicable in fewer operating conditions than in the CTS.

L02 *(Category 4 – Relaxation of Required Action)* CTS 3.6.b.3.A.1 allows 24 hours to isolate the affected penetration when one or more of the MFIVs are inoperable. ITS 3.7.3 Required Action A.1 will allow 72 hours to close or isolate the MFIV when a MFIV is inoperable, and once isolated, will require verification that the flow path remains isolated every 7 days. This changes the CTS by extending the Completion Time from 24 hours to 72 hours when a MFIV is inoperable.

The purpose of CTS 3.6.b.3.A.1 is to provide a degree of assurance that the affected flow path with an inoperable MFIV maintains the containment penetration isolation boundary. This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, the capacity and capability of remaining features, a reasonable time for repairs or replacement of required features, and the low probability of a DBA occurring during the allowed Completion Time. While the MFIVs are containment isolation valves, they do not receive a containment isolation signal. They close on a Safety Injection (SI) signal and each MFIV closes on Hi-Hi Steam Generator (SG) level for their respective SG when 2 of 3 channels reach the setpoint. The MFIVs help isolate the steam generators following a MSLB or MFWB. Furthermore, the MFIVs are not subject to 10 CFR 50 Appendix J, Option B leak rate testing. Thus, leakage through these valves is not included in the type C leakage limit. The MFIVs do not communicate with the containment atmosphere or reactor coolant pressure boundary, thus 72 hours is a reasonable time period considering the relative stability of a system to act as a penetration isolation boundary and the redundancy provided by the remaining feedwater isolation valves in the associated flow path (i.e., the MFRV and associated bypass valve). In addition, the periodic 7 day verification will ensure that the closed or isolated MFIV remains in the correct position. This change is designated as less restrictive because additional time is allowed to isolate the MFIVs than was allowed in the CTS.

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

CTS

, MFIVs ~~and~~ MFRVs, and [~~Associated~~ Bypass Valves] , MFRV 3.7.3 (3)

All changes are (1) unless otherwise noted

3.7 PLANT SYSTEMS

3.7.3 Main Feedwater Isolation Valves (MFIVs) ~~and~~ , Main Feedwater Regulation Valves (MFRVs) , and [~~Associated~~ MFRV Bypass Valves] (3)

3.6.b.1, DOC M05 — LCO 3.7.3 Two [~~Four~~] MFIVs, [~~four~~] MFRVs, [and ~~associated~~ MFRV bypass valves] shall be OPERABLE. (2)

3.6.b.1, DOC M05 — APPLICABILITY: MODES 1, [~~and 2~~] [2, and 3] except when all MFIVs, MFRVs, and MFRV [~~or associated~~ bypass valve] s [~~is~~ are closed and [de-activated] [or isolated by a closed manual valve]. (4)

ACTIONS

3.6.b.3, DOC M05

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

	CONDITION	REQUIRED ACTION	COMPLETION TIME
3.6.b.3.A	A. One or more MFIVs inoperable.	A.1 Close or isolate MFIV. AND A.2 Verify MFIV is closed or isolated.	[72] hours Once per 7 days
DOC M05	B. One or more MFRVs inoperable.	B.1 Close or isolate MFRV. AND B.2 Verify MFRV is closed or isolated.	[72] hours Once per 7 days
DOC M05	C. [One or more [MFRV ~~or preheater~~] bypass valves inoperable.	C.1 Close or isolate MFRV bypass valve. AND C.2 Verify MFRV bypass valve is closed or isolated.	[72] hours Once per 7 days]

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CTS

, MFIVs ~~and~~ MFRVs, and [~~Associated~~ MFRV Bypass Valves] 3.7.3 3

All changes are 1 unless otherwise noted

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME
3.6.b.3.A, DOC M05	D. Two valves in the same flow path inoperable.	D.1 Isolate affected flow path.	8 hours
3.6.b.4, DOC M05	E. Required Action and associated Completion Time not met.	E.1 Be in MODE 3. [AND E.2 Be in MODE 4.	6 hours 12 hours]

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY
DOCs M04 and M05	SR 3.7.3.1	Verify the isolation time of each MFIV, MFRV[, and ~~associated~~ MFRV bypass valve] is ~~≤ [7] seconds~~ within limits.	In accordance with the Inservice Testing Program TSTF-491-A
DOCs M04 and M05	SR 3.7.3.2	Verify each MFIV, MFRV[, and ~~associated~~ MFRV bypass valves] actuates to the isolation position on an actual or simulated actuation signal.	[18] months

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

1. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

2. 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.

3. Grammatical error corrected.

4. Typographical error corrected. The word "all" should be included similar to the ISTS 3.7.2 Applicability and the word "or" should be "and" since both MFRVs and their associated bypass valves are required to be OPERABLE.

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

All changes are 1 unless otherwise noted

, , MFRV 9

B 3.7 PLANT SYSTEMS

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

, , MFRV 9 2

BASES

BACKGROUND

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

a main steam line break or 10

MFRV

MFRV

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.

MFIVs or MFRVs and MFRV bypass

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.

MFRV

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, All changes are 1 unless otherwise noted , MFRV 9

BASES

BACKGROUND (continued)

INSERT 1 Both The MFRV INSERT 2

~~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 inside containment is available. The check valve isolates the feedwater line, penetrating containment, and ensures that the consequences of ~~events do not exceed the capacity of the containment heat removal systems.~~

) , INSERT 3 MFRV a MFLB are bounded by the MSLB analysis

U

A description of the MFIVs and MFRVs is found in the ~~F~~SAR, Section ~~[10.4.7]~~ (Ref. 1). 10.2.2.7 2

APPLICABLE SAFETY ANALYSES

INSERT 4

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~~.

MFRV and trip of the MFW pumps feedwater flow during a MSLB for the containment response analyses

MFRV M

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.

M

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

LCO

MFRV

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

MFIVs two

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.

MFRV 2 MFRV

1 **INSERT 1**

close on a Safety Injection (SI) signal and each MFIV closes on High-High Steam Generator (SG) level for their respective SG when 2 of 3 channels reach the setpoint.

1 **INSERT 2**

Main Feedwater Isolation signal (SI signal,

1 **INSERT 3**

MFRVs and the MFRV bypass valves

1 **INSERT 4**

Main Steam Line Break (MSLB)

, MFIVs ~~and~~ MFRVs [and ~~Associated~~ Bypass Valves] 9
All changes are 1 unless otherwise noted
, MFRV
B 3.7.3

BASES

LCO (continued)

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.

M
Since

APPLICABILITY

The MFIVs and MFRVs and the ~~associated~~ bypass valves must be OPERABLE whenever there is significant mass and energy in the Reactor Coolant System 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.

MFRV
MFRV 2
all 3

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.

ACTIONS

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

A.1 and A.2

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

s 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

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.

All changes are 1 unless otherwise noted

BASES

ACTIONS (continued)

B.1 and B.2

With one MFRV ~~in one~~ s 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. 5 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

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

With one or more MFRV ~~associated~~ bypass valves ~~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. 6 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

Inoperable MFRV ~~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.

, MFIVs ~~and~~ MFRVs [and ~~Associated~~ Bypass Valves] 9
B 3.7.3

All changes are 1 unless otherwise noted

, MFRV

BASES

ACTIONS (continued)

D.1

(i.e., an inoperable MFIV and either an inoperable MFRV or MFRV bypass valve)

is

With two inoperable valves in the same flow path, there ~~may be~~ no redundant system to operate automatically and perform the required safety function. ~~Although the containment can be isolated with the failure of two valves in parallel in the same flow path, the double failure can be an indication of a common mode failure in the valves of this flow path, and as such, is treated the same as a loss of the isolation capability of this flow path.~~ Under these conditions, ~~affected valves in each flow path must be restored to OPERABLE status, or~~ the affected flow path 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. 7

must be

and MFRV bypass valve

E.1 and E.2

Required Action and associated Completion Time is not met

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~~, 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. 8 2

SURVEILLANCE REQUIREMENTS

SR 3.7.3.1

MFRV

This SR also verifies the valve closure time is in accordance with the Inservice Testing Program.

within the limit given in Reference 2 and is within that

SR

when shutting the unit down prior to

This SR verifies that the closure time of each MFIV, MFRV, and ~~[associated~~ bypass valve] is ~~≤ 7 seconds.~~ ~~The MFIV and MFRV isolation~~ ~~times are~~ assumed in the accident and containment 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 partial stroke exercise increases the risk of a valve closure with the unit generating power. This is consistent with the ASME Code (Ref. 2), quarterly stroke requirements during operation in MODES 1 and 2. 1 1 TSTF-491-A

3

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

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.3.2

MFRV

This SR verifies that each MFIV, MFRV, and [~~associated~~ bypass valves] can close on an actual or simulated actuation signal. This Surveillance is normally performed upon returning the plant to operation following a refueling outage. 2

The Frequency for this SR 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.

2

REFERENCES

U 10.2.2.7

1. ~~F~~SAR, Section ~~[10.4.7]~~.

2. Technical Requirements Manual.

3 ~~2~~. ASME Code for Operation and Maintenance of Nuclear Power Plants. 1998 Edition through OMB 2000 Addenda

TSTF-491-A

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

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 ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

3. Changes made to be consistent with a change made to the Specification. The word "all" was added to be consistent with a similar Applicability in ISTS 3.7.3.

4. The ISTS ACTIONS A.1 and A.2 text reads in part "with one MFIV in one or more flow paths inoperable". In the conversion to the ITS, this text has been changed to read "with one or more MFIVs inoperable". This change is acceptable since rewording of the Bases ACTION text agrees with the text as it appears in ITS 3.7.3 Condition A.

5. The ISTS ACTIONS B.1 and B.2 text reads in part "with one MFRV in one or more flow paths inoperable". In the conversion to the ITS, this text has been changed to read "with one or more MFRVs inoperable". This change is acceptable since rewording of the Bases ACTION text agrees with the text as it appears in ITS 3.7.3 Condition B.

6. The ISTS ACTIONS C.1 and C.2 text reads in part "with one associated bypass valve in one or more flow paths inoperable". In the conversion to the ITS, this text has been changed to read "with one or more MFRV bypass valves inoperable". This change is acceptable since rewording of the Bases ACTION text agrees with the text as it appears in ITS 3.7.3 Condition C.

7. Changes made to be consistent with the Specification. ITS 3.7.3 ACTION D does not have a Required Action to restore the affected valves in 8 hours.

8. The ISTS ACTIONS E.1 and E.2 text reads in part "If the MFIV(s) and MFRV(s) and the associated bypass valve(s) cannot be restored to OPERABLE status, or closed or initiated within the associated Completion Time". In the conversion to the ITS, this text has been changed to read "If any Required Action and associated Completion Time is not met." This change is acceptable since rewording of the Bases ACTION text agrees with the text as it appears in ITS 3.7.3 Condition E.

9. Grammatical error corrected.

10. The term "safety related function" has been change to "safety function" to be consistent with terminology in the definition of OPERABLE – OPERABILITY.

Specific No Significant Hazards Considerations (NSHCs)

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

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 4

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

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

ITS 3.7.4

Add Proposed ITS 3.7.4

M01

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

ADMINISTRATIVE CHANGES

None

MORE RESTRICTIVE CHANGES

M01 The CTS does not have any requirements for the Steam Generator (SG) Power Operated Relief Valves (PORVs) to be OPERABLE. ITS 3.7.4 requires the PORVs to be OPERABLE in MODES 1, 2, and 3, and MODE 4 when steam generator is relied upon for heat removal. This changes the CTS by incorporating the requirements of ITS 3.7.4. The ITS also provides Actions when one or both SG PORVs are inoperable (ACTIONS A, B, and C) and a Surveillance Requirement (SR 3.7.4.1) to verify one complete cycle of each SG PORV in accordance with the IST Program.

The safety function of the SG PORVs is to permit the unit to cool down to residual heat removal (RHR) entry conditions for accidents accompanied by a loss of offsite power. The SG PORVs are expected to be operated during the recovery from a steam generator tube rupture (SGTR) event, in which a limited cooldown is established to achieve subcooling as necessary to terminate the primary to secondary break flow into the ruptured steam generator. This change is acceptable because the safety analysis of record bounds the use of the SG PORVs and the SG PORVs are the preferred means of providing controlled relief of the main steam flow and are capable of fully opening and closing on demand. 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

All changes are 1 unless otherwise noted

SG POR ~~AD~~Vs
3.7.4

3.7 PLANT SYSTEMS

3.7.4 ~~Atmospheric Dump~~ Steam Generator (SG) Power Operated Relief Valves (~~AD~~ POR Vs)

DOC M01 LCO 3.7.4 ~~[Three]~~ Two ~~AD~~ SG POR V lines shall be OPERABLE. 2

DOC M01 APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is relied upon for heat removal.

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
DOC M01	A. One ~~required~~ ~~AD~~ SG POR V line inoperable.	A.1 Restore ~~required~~ ~~AD~~ SG POR V line to OPERABLE status.	7 days	3
DOC M01	B. Two ~~or more required~~ ~~AD~~ SG POR V lines inoperable.	B.1 Restore ~~all but~~ one ~~AD~~ SG POR V line to OPERABLE status.	24 hours	3
DOC M01	C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 4 without reliance upon steam generator for heat removal.	6 hours ~~[~~24~~]~~ hours	2

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY	
DOC M01	SR 3.7.4.1 Verify one complete cycle of each ~~AD~~ SG POR V.	~~[18] months~~ In accordance with the Inservice Testing Program	4

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CTS

All changes are 1 unless otherwise noted

SG POR ~~AD~~Vs
3.7.4

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY	
DOC M01	SR 3.7.4.2 ~~[~~ Verify one complete cycle of each ~~AD~~V ~~block~~ valve. SG POR manual isolation	~~[~~18~~]~~ months ~~]~~	2

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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 Specification which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

3. The ISTS ACTIONS A and B are written such that there may be more than a total of two SG PORVs. The design of the Kewaunee Power Station is such that there is a total of two SG PORVs, one for each main steam header. Consequently, the markup of the ISTS deletes the terms included in ACTIONS A and B that reflect more than two SG PORVs.

4. The ISTS SR 3.7.4.1 Surveillance Frequency is 18 months. The Kewaunee SG PORVs are currently tested in accordance with the pump and valve Inservice Testing (IST) Program for the Kewaunee Power Station. The KPS IST program contains the valve testing frequency and other guidelines for the SG PORVs. The ISTS markup for the Surveillance Frequency is changed from "18 months" to "In accordance with the Inservice Testing Program." This is acceptable since the Surveillance Frequency is established and controlled by the IST Program and is currently quarterly.

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

All changes are 1 unless otherwise noted

B 3.7 PLANT SYSTEMS

B 3.7.4 ~~Atmospheric Dump~~ Steam Generator (SG) Power Operated Relief Valves (~~AD~~ POR Vs)

BASES

BACKGROUND

The SG POR ~~AD~~Vs provide a method for cooling the unit to residual heat removal (RHR) entry conditions should the preferred heat sink via the Steam Dump ~~Bypass~~ System to the condenser not be available, as discussed in the U ~~F~~SAR, Section 10.2.2.2 ~~[10.3]~~ (Ref. 1). This is done in conjunction with the Auxiliary Feedwater System providing cooling water from the condensate storage tank s (CST). [The SG POR ~~AD~~Vs 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

One SG POR ~~AD~~V ~~line~~ for each of the two ~~[four]~~ steam generators is provided. Each SG POR ~~AD~~V line consists of one SG POR ~~AD~~V and an associated manual isolation ~~block~~ valve. 2

The SG POR ~~AD~~Vs are provided with upstream manual isolation ~~block~~ valves to permit their being tested at power, and to provide an alternate means of isolation. The SG POR ~~AD~~Vs are equipped with pneumatic controllers to permit control of the cooldown rate.

The SG POR ~~AD~~Vs 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 SG POR ~~AD~~Vs. The nitrogen supply is sized to provide the sufficient pressurized gas to operate the SG POR ~~AD~~Vs for the time required for Reactor Coolant System cooldown to RHR entry conditions during a Station Blackout.

A description of the SG POR ~~AD~~Vs 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.~~ 3

APPLICABLE SAFETY ANALYSES

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

INSERT 1

2 **INSERT 1**

As originally licensed, the safe shutdown condition is defined as hot shutdown. The SG PORVs are not currently credited in the safety analyses for accident mitigation, obviating requirements for SG PORVs to support cooldown to residual heat removal entry conditions. Although not crediting SG PORVs for event mitigation, the SGTR event description includes a supplementary thermal hydraulic evaluation that includes the use of SG PORVs, and expected operator actions, should a SGTR occur.

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All changes are 1 unless otherwise noted

SG POR~~AD~~Vs
B 3.7.4

BASES

APPLICABLE SAFETY ANALYSES (continued)

In the SGTR ~~accident analysis~~ supplementary evaluation presented in Reference ~~1~~ 2, the SG POR~~AD~~V~~s~~ ~~are~~ in the unaffected steam generator is 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 operator actions to cool down the unit, the SG POR~~AD~~Vs and/or 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 POR~~AD~~Vs. ~~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.~~ 4

The SG POR~~AD~~Vs are equipped with ~~block~~ manual isolation valves in the event a~~n~~ SG POR~~AD~~V spuriously fails to open or fails to close during use.

The SG POR~~AD~~Vs satisfy Criterion ~~3~~ 4 of 10 CFR 50.36(c)(2)(ii). 7

LCO

~~[Three]~~ Two SG POR~~AD~~Vs lines are required to be OPERABLE. One SG POR~~AD~~V line is required from each ~~of [three]~~ steam generator~~s~~ to ensure that at least one SG POR~~AD~~V 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~~ manual isolation valves must be OPERABLE to isolate a failed open SG POR~~AD~~V line. A closed ~~block~~ manual isolation valve does not render it or its SG POR~~AD~~V line inoperable if operator action time to open the ~~block~~ manual isolation valve is supported in the accident analysis. 2

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

A~~n~~ SG POR~~AD~~V is considered OPERABLE when it is capable of providing controlled relief of the main steam flow and capable of fully opening and closing on demand.

All changes are 1 unless otherwise noted

BASES

APPLICABILITY

In MODES 1, 2, and 3, and in MODE 4, when a steam generator is being relied upon for heat removal, the SG POR ~~AD~~V~~s~~ lines are required to be OPERABLE. 6

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

ACTIONS

A.1

With one ~~required~~ SG POR ~~AD~~V 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 SG POR ~~AD~~V line~~s~~, a nonsafety grade backup in the Steam Dump ~~Bypass~~ System, and MSSVs.

B.1

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

C.1 and C.2

If the SG POR ~~AD~~V 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. 2

All changes are 1 unless otherwise noted

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.4.1

SG POR

To perform a controlled cooldown of the RCS, the ~~AD~~Vs must be able to be opened ~~either~~ remotely ~~or locally~~ and throttled through their full range. This SR ensures that the ~~AD~~Vs are tested through a full control cycle at least once per fuel cycle. Performance of inservice testing or use of an ~~AD~~V 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~~ ~~F~~requency. The Frequency is acceptable from a reliability standpoint. 5

SG POR

specified in the Inservice Testing Program

~~[~~ SR 3.7.4.2

manual isolation SG POR manual isolation

The function of the ~~block~~ valve is to isolate a failed open ~~AD~~V. 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. ~~]~~ 2

REFERENCES

U

1. ~~F~~SAR, Section ~~[10.3]~~. 10.2.2.2 2

2. USAR, Section 14.2.4.

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 ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

3. The ISTS states that the ADVs (changed to KPS terminology of SG PORVs in the ITS) are OPERABLE with only a DC power source available and that handwheels are provided for local manual operation. The SG PORVs are air operated globe valves that are provided with a nitrogen supply as a backup in the event that normal instrument air is lost during a station blackout. There is no DC power to the SG PORVs and since the valves are pneumatically operated, there are no handwheels provided for local operation of the valve. This change is acceptable since the deletion of the text provides additional clarity relative to the type and operation of the valve and is reflective of the current Kewaunee design.

4. The ISTS states that the number of ADVs (changed to KPS terminology of SG PORVs in the ITS) required to be OPERABLE to satisfy the SGTR accident analysis requirements depends upon the number of unit loops. The design of the Kewaunee Power Station is such that there is a total of two SG PORVs, one for each main steam header. Consequently, all (both) SG PORVs are required to be OPERABLE to satisfy the SGTR accident analysis requirements and, therefore, this information in the ISTS was deleted from the ITS. This change is acceptable since the deletion of the text is reflective of the current Kewaunee design.

5. The ISTS SR 3.7.4.1 Surveillance Frequency is 18 months. The Kewaunee SG PORVs are currently tested in accordance with the pump and valve Inservice Testing (IST) Program for the Kewaunee Power Station. The KPS IST Program contains the valve testing frequency and other guidelines for the SG PORVs. The ITS markup for the Surveillance Frequency is changed from 18 months to the frequency specified in the Inservice Testing Program. This is acceptable since the Surveillance Frequency is established and controlled by the IST Program and is currently quarterly.

6. Typographical error corrected.

7. As stated in the Applicable Safety Analyses (ASA) Section, the SG PORVs are not assumed in the KPS accident analysis. However, SG PORVs are considered risk significant, so they will be maintained since they meet Criterion 4.

Specific No Significant Hazards Considerations (NSHCs)

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

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 5

ITS 3.7.5, AUXILIARY FEEDWATER (AFW) SYSTEM

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

ITS

A01

ITS 3.7.5

3.4 STEAM AND POWER CONVERSION SYSTEM

APPLICABILITY

Applies to the OPERATING status of the Steam and Power Conversion System.

OBJECTIVE

To assure minimum conditions of steam-relieving capacity and auxiliary feedwater supply necessary to assure the capability of removing decay heat from the reactor, and to limit the concentrations of water activity that might be released by steam relief to the atmosphere.

SPECIFICATION

a. Main Steam Safety Valves (MSSVs)

1. The Reactor Coolant System shall not be heated > 350°F unless a minimum of two MSSVs per steam generator are OPERABLE.

2. The reactor shall not be made critical unless five MSSVs per steam generator are OPERABLE.

3. If the conditions of TS 3.4.a.1 or TS 3.4.a.2 cannot be met within 48 hours, then within 1 hour initiate action to:

   - Achieve HOT STANDBY within 6 hours
   - Achieve HOT SHUTDOWN within the following 6 hours
   - Achieve and maintain the Reactor Coolant System temperature < 350°F within an additional 12 hours.

See ITS 3.7.1

b. Auxiliary Feedwater System

Applicability

1. The Reactor Coolant System shall not be heated > 350°F unless the following conditions are met:

Add proposed second Applicability — M01

LCO 3.7.5

A. Auxiliary feedwater train "A" and auxiliary feedwater train "B" are OPERABLE and capable of taking suction from the Service Water System and delivering flow to the associated steam generator.

LA01 — LA01 — L03

LCO 3.7.5

B. The turbine-driven auxiliary feedwater train is OPERABLE and capable of taking suction from the Service Water System and delivering flow to both steam generators, OR

LA01

The turbine-driven auxiliary feedwater train is declared inoperable.

C. The auxiliary feedwater pump low discharge pressure trip channels are OPERABLE.

D. The auxiliary feedwater pump low suction pressure trip channels are OPERABLE.

LA02

Amendment No. 183
6/20/2005

ITS | ITS 3.7.5

A01

Add proposed ACTION Note — A02

ACTION E

2. When the Reactor Coolant System temperature is > 350°F, if three auxiliary feedwater trains are discovered to be inoperable, initiate immediate action to restore one auxiliary feedwater train to OPERABLE status and suspend all LIMITING CONDITIONS FOR OPERATION requiring MODE changes until one auxiliary feedwater train is restored to OPERABLE status.

3. ~~The reactor power shall not be increased above 1673 MWt unless three trains of AFW are OPERABLE.~~ L04 If two of the three AFW trains are inoperable, then within two hours, reduce reactor power to ≤ 1673 MWt. M02

ACTIONS

4. When the Reactor Coolant System temperature is > 350°F, any of the following conditions of inoperability may exist during the time interval specified:

ACTIONS A and B

A. One auxiliary feedwater train may be inoperable for 72 hours. L01

ACTIONS C and D

B. Two auxiliary feedwater trains may be inoperable for 4 hours. L02 M02

ACTION A

C. One steam supply to the turbine-driven auxiliary feedwater pump may be inoperable for 7 days.

5. ~~When the Reactor Coolant System temperature is > 350°F, one auxiliary feedwater pump's low discharge pressure trip channel and/or low suction pressure trip channel may be inoperable for a period not to exceed 4 hours. If this time period is exceeded or more than one pump's trip channel(s) are inoperable then the associated auxiliary feedwater train(s) shall be declared inoperable and the OPERABILITY requirements of TS 3.4.b.3 and TS 3.4.b.4 applied.~~ LA02

ACTION D

6. If the OPERABILITY requirements of TS 3.4.b.4 above are not met within the times specified, then within 1 hour action shall be initiated to: M03

- Achieve HOT STANDBY within 6 hours
- Achieve HOT SHUTDOWN within the following 6 hours
- Achieve and maintain the Reactor Coolant System temperature < 350°F within an additional 12 hours.

Add proposed Required Action D.2 — M01

Notes to SR 3.7.5.1 and SR 3.7.5.3, Note 2 to SR 3.7.5.4

7. When reactor power is < 15% of RATED POWER, any of the following conditions may exist without declaring the corresponding auxiliary feedwater train inoperable:

~~A. The auxiliary feedwater pump control switches located in the control room may be placed in the "pull out" position.~~

~~B. Valves AFW-2A and AFW-2B may be in a throttled or closed position.~~

~~C. Valves AFW-10A and AFW-10B may be in the closed position.~~ LA03

Add proposed ACTION F — M01

ITS

A01

ITS 3.7.5

4.8 AUXILIARY FEEDWATER SYSTEM[1]

APPLICABILITY

Applies to periodic testing requirements of the turbine-driven and motor-driven auxiliary feedwater pumps.

OBJECTIVE

To verify the OPERABILITY of the auxiliary feedwater equipment and its ability to respond properly when required.

SPECIFICATION

SR 3.7.5.2 a. The OPERABILITY of the motor-driven auxiliary feedwater pumps as required by TS 3.4.b.1.A shall be demonstrated quarterly during power operation and within one week after the pumps are required to be operable by the Technical Specifications, if the test surveillance interval expired during the shutdown period. A03 M04

SR 3.7.5.2 b. The OPERABILITY of the turbine-driven auxiliary feedwater pump as required by TS 3.4.b.1.B shall be demonstrated quarterly during power operation and within 72 hours after exceeding 350°F, if the test surveillance interval expired during the shutdown period. A03 M04

c. ~~The valves on the discharge side of the turbine-driven pump that direct flow to either steam generator shall be tested by operator action whenever the turbine-driven pump is tested.~~ LA04

d. ~~The service water supply valves to the auxiliary feedwater pump suctions shall be tested by operator action following the auxiliary feedwater pump tests.~~ L03

e. ~~These tests shall be considered satisfactory if control board indication or visual observation of the equipment demonstrate that all components have operated properly.~~ A04

Add proposed SR 3.7.5.1, SR 3.7.5.3, and SR 3.7.5.4 M05 L05

[1] USAR Section 6.6

A01

TABLE TS 4.1-1

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS

LA02

CHANNEL DESCRIPTION	CHECK	CALIBRATE	TEST	REMARKS
43. AFW Pump Low Discharge Pressure Trip	Not Applicable	Each refueling cycle	Quarterly (a)	(a) Verification of relay setpoints not required.
44. Axial Flux Difference (AFD)	Weekly			Verify AFD within limits for each OPERABLE excore channel
45. Service Water Turbine Header Isolation Logic Trip (SW 4 A/B)	Not Applicable	Each refueling cycle	Each refueling cycle	See ITS 3.3.2 See ITS 3.2.3
46. AFW Pump Low Suction Pressure Trip	Not Applicable	Each refueling cycle	Quarterly (a)	(a) Verification of relay setpoints not required.

LA02

Amendment No. 183
6/20/2005

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

ADMINISTRATIVE CHANGES

A01 In the conversion of the Kewaunee Power Station (KPS) 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. 3.0, "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.

A02 The ITS 3.7.5 ACTIONS include a Note that states LCO 3.0.4.b is not applicable. CTS 3.4.b does not include this Note. This changes the CTS by including the ACTION Note.

The purpose of ITS 3.7.5 ACTIONS Note is to prevent application of LCO 3.0.4.b. LCO 3.0.4.b allows entry into a MODE or other specified condition in the Applicability when a Technical Specification required component is inoperable if a risk assessment is performed, that determines it is acceptable to enter the Applicability, and appropriate risk management actions are established. Currently, CTS 3.4.b precludes entering MODE 1, 2, and 3 when an AFW train or the turbine-driven auxiliary feedwater train, respectively, are inoperable. ITS LCO 3.0.4 has been added in accordance with the Discussion of Changes for ITS Section 3.0, DOC L01. ITS LCO 3.0.4 allows entry into a MODE or other condition in the Applicability of a Specification if a risk assessment is performed, that determines it is acceptable to enter the Applicability, and appropriate risk management actions are established. The ITS 3.7.5 ACTIONS Note will continue to prevent this entry because of increased risk associated with entering a MODE or other specified condition with an AFW train inoperable. This change is considered administrative because it does not result in a technical change to the CTS.

A03 CTS 4.8.a requires that the motor-driven auxiliary feedwater pumps are demonstrated OPERABLE quarterly during power operation. CTS 4.8.b requires that the turbine-driven auxiliary feedwater pump is demonstrated OPERABLE quarterly during power operation. ITS 3.7.5.2 provides the Surveillance Frequency in accordance with the Inservice Testing Program. This changes the CTS by changing the Surveillance Frequency from quarterly to in accordance with the Inservice Testing Program.

This change is acceptable because the Inservice Testing Frequency is quarterly as required by Technical Specifications. This change is considered administrative because it does not result in a technical change to the CTS.

A04 CTS 4.8.e states, in part, that all of the tested performed in CTS 4.8 are considered satisfactory if control board indication or visual observation of the equipment demonstrates that all components have operated properly. ITS 3.7.5 does not contain this statement. This changes the CTS by deleting the specific method of verifying Surveillances.

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

This change is acceptable because this type of information is not needed in the Technical Specifications. This information is found in the individual Surveillance procedures used to perform the testing. Therefore, stating it in the Technical Specifications is unnecessary. Additionally, 10 CFR 50 Appendix B requires "Instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished." Thus this CTS requirement is already covered by 10 CFR 50 Appendix B requirements. This change is considered administrative because it does not result in a technical change to the CTS.

MORE RESTRICTIVE CHANGES

M01 The CTS requirements on the Auxiliary Feedwater (AFW) System are applicable when the Reactor Coolant System is > 350ºF. ITS 3.7.5 is applicable in MODES 1, 2, 3, (equivalent to the CTS Applicability) and, in addition, MODE 4 when the steam generator is relied upon for heat removal. This changes the CTS by adding the MODE of Applicability requirement. 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 F is added which requires immediate action to restore a required AFW train to OPERABLE status when the steam generator (SG) is relied upon for heat removal in MODE 4;
- ITS 3.7.5 Required Action D.2 has been added to require the unit to be in MODE 4 within 18 hours whenever a unit shutdown is required; and
- CTS 4.8.a, b, and c (SR 3.7.5.2 and SR 3.7.5.3) which are applicable when the Reactor Coolant System is > 350ºF, are now also applicable in MODE 4 when the SG is relied upon for heat removal for the required AFW train.

These changes are acceptable because the AFW system may be needed in MODE 4 if the residual heat removal (RHR) loop has not yet been placed in service. ITS 3.4.6, "RCS Loops – MODE 4," includes requirements for OPERABLE steam generators, thus a required AFW train must be OPERABLE to ensure the steam generators have a source of feedwater. This change is designated as more restrictive because the AFW system is now required to be OPERABLE in MODE 4 when a steam generator is relied upon for heat removal.

M02 CTS 3.4.b.3 states that if two of the three AFW trains are inoperable, to reduce power to $\leq$ 1673 MWt within 2 hours. CTS 3.4.b.4.B then continues the actions for two inoperable AFW trains and requires restoration of one of the trains within 4 hours. In the ITS, when two AFW trains are inoperable for reasons other than ITS 3.7.5 Condition C (i.e., reasons other than one turbine driven AFW train inoperable due to an inoperable steam supply concurrent with one inoperable motor driven AFW train), ITS 3.7.5 ACTION D requires a unit shutdown; no time is provided for restoration of one of the inoperable trains. This changes the CTS

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by requiring a unit shutdown under certain conditions when two AFW trains are inoperable.

The purpose of the current actions is to provide some time to restore the inoperable AFW trains before requiring a unit shutdown. However, the short amount of time currently provided for restoration will not be allowed in the ITS since only one AFW train remains OPERABLE. This change is acceptable since the ITS ACTIONS now require a unit shutdown to commence sooner under the certain conditions of two inoperable AFW trains. This change is designated as more restrictive since the ITS will require a unit shutdown to commence sooner than in the CTS.

M03 CTS 3.4.b.6 requires that if the AFW actions of CTS 3.4.b.4 are not met, then, within 1 hour, initiate action to achieve HOT STANDBY within 6 hours, HOT SHUTDOWN within the following 6 hours, and reduce Reactor Coolant System temperature to < 350ºF within an additional 12 hours. ITS 3.7.5 ACTION D requires that the unit be in MODE 3 (equivalent to CTS HOT SHUTDOWN) within 6 hours and to be in MODE 4 (equivalent to CTS RCS temperature < 350ºF) within 18 hours. This changes the time required to be in MODE 3 from 13 hours to 6 hours, the time to be in MODE 4 from 25 hours to 18 hours, and deletes the requirement to be in MODE 2 (equivalent to CTS HOT STANDBY) within 7 hours.

The purpose of CTS 3.4.b.6 is to place the unit in a condition in which the LCO does not apply. The change is acceptable because the Completion Times are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the allowed Completion Times. Allowing 6 hours to be in MODE 3 in lieu of the current 13 hours and 18 hours to be in MODE 4 in lieu of the current 25 hours ensures a unit shutdown is commenced and completed within a reasonable period of time upon failure to restore the AFW System to OPERABLE status within the allowed Completion Times. Additionally, since ITS 3.7.5 Required Action D.1 requires the unit to be in MODE 3 within 6 hours, there is no need to maintain the requirement to be in MODE 2 within the same 6 hours. This change is designated as more restrictive because less time is allowed for the unit to reach MODES 3 and 4 than was allowed in the CTS.

M04 CTS 4.8.a requires that the motor-driven auxiliary feedwater pumps are demonstrated OPERABLE quarterly during power operation and within one week after the pumps are required to be OPERABLE by Technical Specifications, if the test surveillance interval expired during the shutdown period. CTS 4.8.b requires that the turbine-driven auxiliary feedwater pump is demonstrated OPERABLE quarterly during power operation and within 72 hours after exceeding 350°F, if the test surveillance interval expired during the shutdown period. ITS SR 3.7.5.2 requires verification that the developed head of each AFW pump at the test point is greater than or equal to the required developed head. Additionally, it allows 24 hours after the pressure in the steam generator reaches $\geq$ 500 psig before the Surveillance is required to be performed for the turbine driven AFW pump. This changes the CTS by a) requiring that the developed head is greater than or equal to the required developed head for the AFW pumps; b) deleting the allowance to

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

not require the flow test until 1 week after entering MODE 3 for the motor-driven AFW pumps; and c) decreasing the time allowed to perform the flow test of the turbine-driven AFW pump from 72 hours after entering MODE 3 to 24 hours after $\geq$ 1000 psig in the steam generators.

The purpose of CTS 4.8.a and 4.8.b is demonstrate that AFW pump (motor-driven and turbine-driven) are able to perform their design function. ITS SR 3.7.5.2 confirms the component's OPERABILITY, trends the performance, and detects incipient failure by indicating abnormal performance. This change is designated as more restrictive because a more specific test of the AFW pumps will be performed than was required in the CTS and the time period after entering MODE 3 until the Surveillance is required to be performed has been reduced or eliminated.

M05 CTS 4.8 does not provide any Surveillance Requirements for verifying that each AFW manual, power operated and automatic valve in each water flow path, and in both steam supply flow paths to the steam driven pump, that are not locked sealed or otherwise secured in position, is in the correct position. CTS 4.8 does not provide any Surveillance Requirements for verifying each AFW automatic valve that is not locked sealed or otherwise secured into position, actuates to the correct position on a actual or simulated actuation signal. CTS 4.8 does not provide any Surveillance Requirements for verifying that each AFW pump starts automatically on an actual or simulated signal. ITS SR 3.7.5.1 requires verifying that each AFW manual, power operated and automatic valve in each water flow path, and in both steam supply flow paths to the steam driven pump, that are not locked sealed or otherwise secured in position, is in the correct position every 31 days. The SR is modified by Note 1, consistent with the allowance specified in CTS 3.4.b.7, and by Note 2, as justified in DOC L05. ITS SR 3.7.5.3 requires verifying 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 every 18 months. ITS SR 3.7.5.4 requires verifying that each AFW pump starts automatically on an actual or simulated signal every 18 months. The SR is modified by a Note that states the SR is not required to be performed until 24 hours after $\geq$ 500 psig in the steam generator. This changes the CTS by adding new Surveillance Requirements.

This change is acceptable because the added Surveillance Requirement proves that the AFW is capable of supplying feedwater to the steam generators to remove decay heat from the Reactor Coolant System upon the loss of normal feedwater supply. This change is designated as more restrictive because new Surveillance Requirements are added to the ITS that are not required by the CTS.

RELOCATED SPECIFICATIONS

None

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REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.4.b requires auxiliary feedwater train "A" and auxiliary feedwater train "B" are OPERABLE and capable of … delivering flow to the associated steam generator. Additionally, it requires the turbine driven auxiliary feedwater train is OPERABLE and capable of … delivering flow to both steam generators. Furthermore, CTS 3.4.b also requires that the auxiliary feedwater pump low discharge pressure and low suction pressure trip channels are OPERABLE. ITS LCO 3.7.5 requires three AFW trains to be OPERABLE. The ITS does not define the component and the associated flow path that comprise an OPERABLE AFW train. This changes the CTS by moving the description of the AFW trains 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 of 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.

LA02 *(Type 4 – Removal of LCO, SR, or other TS requirement to the TRM, USAR, ODCM, NFQAPD, CLRT Program, IST Program, ISI Program, or Setpoint Control Program)* CTS 3.4.b.1.C requires the auxiliary feedwater pump low discharge pressure trip channels to be OPERABLE when the Reactor Coolant System is heated > 350°F. CTS 3.4.b.1.D requires the auxiliary feedwater pump low suction pressure trip channels to be OPERABLE when the Reactor Coolant System is heated > 350°F. Additionally, CTS 3.4.b.5 provides the Actions for an inoperable auxiliary feedwater pump low discharge pressure channel or an inoperable auxiliary feedwater pump low suction pressure channel. CTS Table TS 4.1-1 Items 43 and 46 require a quarterly functional test and a refueling cycle calibration test of the AFW pump low discharge pressure trip channels and the AFW pump low suction pressure trip channels. ITS 3.7.5 does not contain these requirements. This changes the CTS by moving these requirements to the Technical Requirements Manual (TRM).

The removal of this LCO and associated Action Requirement from the Technical Specification 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 purpose of the low discharge pressure signal in the AFW pump discharge line is to protect the AFW pumps from damage due to runout conditions during alignment and operation of the pumps to a depressurized steam generator. The purpose of the low pressure signal in the AFW pump suction line is to protect the AFW pumps against a loss of normal water supply from the condensate storage tanks (CSTs). Since these pressure switches are used for pump protection, they are not necessary to be included in

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

the Technical Specifications. Therefore, this change is acceptable because the removed requirements will be adequately controlled in the TRM. The TRM is incorporated by reference into the USAR and any changes to the TRM are made under 10 CFR 50.59, which ensures changes are properly evaluated. This change is designated as less restrictive removal of detail change because a Technical Specification Requirement is being removed from the Technical Specifications.

LA03 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.4.b.7 states that when the reactor power is < 15% of RATED POWER, the corresponding auxiliary feedwater train is not inoperable with the auxiliary feedwater pump control switches in the control room in the "pull out" position, valves AFW-2A and AFW-2B in a throttled or closed position, and valves AFW-10A and AFW-10B in the closed position. ITS SR 3.7.5.1 Note, SR 3.7.5.3 Note, and SR 3.7.5.4 Note 2 states that AFW train(s) may be considered OPERABLE during alignment and operation for steam generator level control when THERMAL POWER is < 15% RTP, if it is capable of being manually realigned to the AFW mode of operation. The ITS does not include the specific details (e.g., valves AFW-10A and AFW-10B may be in the closed position) concerning AFW alignment for steam generator level control. This changes the CTS by moving the description of the details concerning AFW alignment for steam generator level control 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 of the AFW trains, including Surveillance Requirement Notes describing the use of the allowance. 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.

LA04 *(Type 4 – Removal of LCO, SR, or other TS requirement to the TRM, USAR, ODCM, NFQAPD, CLRT Program, IST Program, ISI Program or Setpoint Control Program)* CTS 4.8.c states "The valves on the discharge side of the turbine-driven pump that direct flow to either steam generator shall be tested by operator action whenever the turbine-driven pump is tested." ITS 3.7.5 does not include this requirement. This changes the CTS by relocating this Surveillance Requirement to the IST Program.

The removal of this 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. These valves (AFW-10A and AFW-10B) are normally open valves. ITS LCO 3.7.5 still requires the turbine driven AFW train to be OPERABLE, including a Surveillance Requirement to verify the valves are in the correct position every 31 days and a Surveillance Requirement that ensures the automatic valves will

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

actuate to the correct position on an actual or simulated actuation signal. This CTS requirement is essentially a valve stroke test. Also, this change is acceptable because this type of Surveillance Requirement will be adequately controlled in the IST Program, which is controlled under 10 CFR 50.55a. This change is designated as a less restrictive removal of detail change because a requirement is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L01 *(Category 4 – Relaxation of Required Action)* CTS 3.4.b.4.A requires an inoperable train of auxiliary feedwater be restored to OPERABLE status within 72 hours. ITS 3.7.5 ACTION A permits 7 days to restore an inoperable turbine-driven AFW train if it is inoperable in MODE 3 following refueling. This changes the CTS by extending the restoration time from 72 hours for 7 days for an inoperable turbine-driven AFW train in MODE 3 following refueling.

The purpose of CTS 3.4.b.4.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 redundant systems and features. This includes the capacity and capability of remaining systems and features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the repair period. An inoperable turbine-driven AFW train in MODE 3 following a refueling is acceptable because two AFW trains remain OPERABLE and the residual heat in the Reactor Coolant System is low. The probability of an event occurring during the extended outage time that would require AFW train to function is low. The ITS ACTION provides adequate assurance that the AFW trains will continue to meet the assumption stated in the safety analyses for the AFW to mitigate postulated accidents. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L02 *(Category 4 – Relaxation of Required Action)* CTS 3.4.b.4.B allows two inoperable auxiliary feedwater trains to be inoperable for 4 hours. ITS 3.7.5 ACTION C specifies that with the turbine driven AFW inoperable due to one inoperable steam supply and one motor driven AFW train inoperable, to restore the steam supply on the turbine driven train to OPERABLE status within 48 hours or to restore the motor driven AFW train to OPERABLE status within 48 hours. This changes the CTS by extending the restoration time from 4 hours to 48 hours when the turbine-driven AFW train is inoperable due to one steam supply concurrent with an inoperable motor-driven AFW train.

The purpose of CTS 3.4.b.4.B is to provide a limit on the length of time the unit may remain in the MODES of Applicability with two auxiliary feedwater trains inoperable. The proposed time in ITS 3.7.5 ACTION C is acceptable because the remaining motor driven AFW train is capable of providing 100% of the AFW

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

flow requirements following a MSLB accident and there is a low probability of an event occurring during this time period that would challenge the AFW system. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.\

L03 *(Category 5 – Deletion of Surveillance Requirement)* CTS 3.4.b, in part, requires AFW trains to be capable of taking suction from the Service Water System. CTS 4.8.d requires that the service water valves to the auxiliary feedwater pump suctions shall be tested by operator action following the auxiliary feedwater pump tests. ITS 3.7.5 does not contain these requirements. This changes the CTS by deleting these requirements from the CTS.

The Service Water System is not the normal supply to the AFW System; it is the backup water supply. The Condensate Storage Tanks are the primary source of water. ITS 3.7.6 requires the CSTs to be OPERABLE in the same MODES as the AFW System is required to be OPERABLE. Also, a new Surveillance Requirement, ITS SR 3.7.5.1, now requires a verification that each 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. Thus, this SR will ensure the CSTs remain aligned to the AFW suction. In addition, when the CSTs are inoperable, ITS 3.7.6 Required Action A.1 will require the OPERABILITY of the backup water supply, i.e., the Service Water System, to be verified within 4 hours and every 12 hours thereafter. Inherent in this requirement is that the Service Water System supply valves must be capable of being aligned to the AFW suction. This is stated in the Bases for the ITS 3.7.6 Required Action. Therefore, since the Service Water System supply is not normally required to be OPERABLE, and the ITS 3.7.6 Bases clearly requires the flow path from the Service Water System to the AFW suction to be OPERABLE when using the allowances of ITS 3.7.6 ACTION A, this deletion is considered acceptable. This change is designated as less restrictive since an OPERABILITY requirement and a Surveillance Requirement in the CTS is not being maintained in the ITS.

L04 *(Category 4 – Relaxation of Required Action)* CTS 3.4.b.1.A and B require three trains of AFW to be Operable. In addition, CTS 3.4.b.3 states that reactor power shall not be increased above 1673 MWt unless three trains of AFW are OPERABLE. ITS 3.7.5 does not have this power restriction when one or more AFW trains are inoperable. This changes the CTS by deleting a power restriction when one or more trains of AFW are inoperable.

The purpose of the CTS 3.4.b.3 is to limit the power level of the unit since, at power levels above 1673 MWt, two AFW trains are required to meet the accident analysis assumptions related to AFW flow. The ITS includes ACTIONS when one or more AFW trains are inoperable. When one train is completely inoperable (i.e., not capable of providing required AFW flow), ITS 3.7.5 ACTION B requires restoration within 72 hours. However, while in this ACTION, the remaining two AFW trains provide the assumed AFW flow needed to meet accident analysis assumptions up to 100% RTP. Furthermore, while in an ACTION, the NRC does not require a single failure to be assumed in addition to the accident. Thus, there is no reason to limit the reactor power to 1673 MWt. This current action basically ensures that if a single failure of one of the two remaining AFW trains occurred

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

while one AFW train is inoperable, the one AFW train remaining OPERABLE can provide the required AFW flow. This type of limitation is not consistent with any of the other ITS requirements, in that the single failure criteria is not applied when in an ACTION that requires restoration within a finite time limit. If two AFW trains are completely inoperable, ITS 3.7.5 ACTION D requires a unit shutdown, thus precluding increasing reactor power while in the condition. When three AFW trains are inoperable, ITS 3.7.5 ACTION E requires actions to be immediately initiated to restore the AFW trains. While this specific ACTION does not preclude increasing power, since the two train inoperable ACTION (ACTION D) is still applicable, reactor power could not be increased. Therefore, based on the above, deletion of the power increase limitation is acceptable. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L05 *(Category 1 – Relaxation of LCO Requirement)* CTS 3.4.b.1.B requires the turbine driven AFW train to be capable of delivering flow to both steam generators. When the quarterly pump test of CTS 4.8.a is performed on the motor driven AFW pumps, one of the AFW header cross-tie valves is closed so that the motor driven AFW pump being tested will only pump to one of the SGs. When either of these valves is closed to perform this testing, KPS declares the turbine driven AFW train inoperable since the turbine driven AFW train cannot automatically provide flow to both SGs. In addition, during this test the motor driven AFW pump is also inoperable. Thus, two AFW trains are inoperable when either of the motor driven AFW pumps is being tested as required by CTS 4.8.a. This requires entry into CTS 3.4.b.4.B, which allows 4 hours to restore one of the two inoperable trains to OPERABLE status. The ITS does not provide any restoration time when two AFW trains are inoperable. ITS 3.7.5 ACTION C requires a shutdown to MODE 3 within 6 hours and to MODE 4 within 18 hours. However, ITS SR 3.7.5.1, which requires verification that each manual, power operated, and automatic valve in each water flow path that is not locked sealed, or otherwise secured in position, is in the correct position, has been modified by Note 2. This Note states that one AFW header cross-tie valve is allowed to be closed for up to 4 hours during testing of the motor driven AFW pump and the turbine driven AFW train may be considered OPERABLE, provided the cross-tie valve is capable of being remotely realigned. This changes the CTS by allowing the turbine driven AFW train to be considered OPERABLE during motor driven AFW pump testing when an AFW header cross-tie valve is closed (i.e., not in its normal open position).

The purpose of the CTS 3.4.b is to ensure the necessary AFW trains needed to meet the accident analysis assumptions can meet those assumptions. The CTS requires pump testing to demonstrate OPERABILITY of the three AFW pumps. In order to test the AFW pumps under conditions that trending of performance can be better achieved and the ASME OM Code requirements can be more closely followed, KPS tests the motor driven AFW pumps by pumping only to one SG. In order to perform the test in this manner, one of the AFW header cross-tie valves must be closed, which results in the turbine driven AFW train only being able to provide flow to one SG (it is isolated from the SG to which the motor driven pump is being tested).

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

Currently, CTS 3.4.b.4.B allows this condition (two AFW trains inoperable) for 4 hours. During this 4 hours, KPS completes the required Technical Specification testing and restores both AFW trains to OPERABLE status. However, the ISTS does not allow a 4 hour restoration time when two AFW trains are inoperable (except if the turbine driven train is one of the two trains and it is inoperable due to one inoperable steam supply). The ISTS requires a unit shutdown in this condition, as shown in ISTS 3.7.5 ACTION D. KPS is adopting this restriction, as discussed in Discussion of Change M02. Due to this adoption, KPS would be required to enter a shutdown action every time the ASME pump test required by CTS 4.8.a (ITS SR 3.7.5.2) is performed. In lieu of entering a shutdown action, KPS proposes to allow the turbine driven AFW train to be considered OPERABLE when one AFW header cross-tie valve is closed to perform testing of the motor driven AFW pump. This would be allowed for up to 4 hours provided the cross-tie valve is capable of being remotely realigned. This allowance is provided in the Note for ITS SR 3.7.5.1, which is the Surveillance that verifies these valves are in their correct position. The KPS design includes valve controls in the control room for these two AFW header cross-tie valves (AFW-10A and 10B). The valves are DC controlled, and are powered from the safety related DC Electrical Power System required by ITS 3.8.4.

The KPS safety analyses require the AFW header cross-tie valves to be in two different positions following an accident, depending upon the accident. For the loss of normal feedwater flow event, the AFW header cross-tie valves are required to be open so that the turbine driven AFW train can provide flow to both SGs. However, for the SG tube rupture event, the ruptured SG is required to be isolated, which requires one of the cross-tie valves to be closed. Closing the valve is assumed to be performed manually by the operator – no automatic closure function is provided for the valves. In addition, following a MSLB, AFW flow is assumed to be isolated by the operators, by tripping the pumps or isolating the flow path (potentially using these valves). Thus, one of the analyses requires the valves to be open while the other analyses require at least one of the valves closed. The CTS placed the requirement on maintaining the valves open for the AFW System to be considered OPERABLE.

The proposed change will allow one of the AFW header cross-tie valves to be closed for up to 4 hours only during performances of required testing. This testing normally takes less than 4 hours, which is the time presently allowed in the CTS when two AFW trains are inoperable. Furthermore, the proposed allowance can only be used if the closed valve can be remotely realigned. The ITS SR 3.7.5.1 Bases states that this remote realignment capability must be from the control room. Thus, operations personnel performing the required motor driven AFW pump testing will have the capability to secure the testing and realign the system from the control room if a loss of normal feedwater flow event occurs. Therefore, based on the above discussion, this proposed change 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.

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

3.7 PLANT SYSTEMS

3.7.5 Auxiliary Feedwater (AFW) System

3.4.b.1.A
3.4.b.1.B

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

DOC M01

-----NOTE-----
~~[~~ Only one AFW train, which includes a motor driven pump, is required to be OPERABLE in MODE 4. ~~]~~

3.4.b.1

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

ACTIONS

DOC A02

-----NOTE-----
LCO 3.0.4.b is not applicable ~~[when entering MODE 1.]~~ . 2

CONDITION	REQUIRED ACTION	COMPLETION TIME
3.4.b.4.C A. ~~[One steam supply to turbine driven AFW pump inoperable.~~ Turbine driven AFW train inoperable due to one inoperable steam supply OR -----NOTE----- Only applicable if MODE 2 has not been entered following refueling. ---------- 3.4.b.4.A ~~One~~ ~~[~~turbine driven AFW train ~~pump~~ inoperable in MODE 3 following refueling.	A.1 Restore affected equipment to OPERABLE status.	7 days ~~]~~ TSTF-412-A 3

CTS

All changes are 1 unless otherwise noted

AFW System
3.7.5

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
3.4.b.4.A	B. One AFW train inoperable in MODE 1, 2, or 3 ~~[~~for reasons other than Condition A~~]~~.	B.1 Restore AFW train to OPERABLE status.	72 hours	
	INSERT 1			TSTF-412-A
3.4.b.6 3.4.b.4.B	~~C~~ D. Required Action and associated Completion Time ~~for~~ of Condition A ~~[or B]~~ , B, or C not met. ~~[~~ OR Two AFW trains inoperable in MODE 1, 2, or 3 ~~]~~ for reasons other than Condition C.	~~C~~ D.1 Be in MODE 3. AND ~~C~~ D.2 ~~[~~ Be in MODE 4.	6 hours ~~[~~18~~]~~ hours ~~]~~	TSTF-412-A TSTF-412-A
3.4.b.2	~~D~~ E. ~~[~~ Three~~]~~ AFW trains inoperable in MODE 1, 2, or 3.	~~D~~ E.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 ~~]~~	TSTF-412-A
DOC M01	~~E~~ F. Required AFW train inoperable in MODE 4.	~~E~~ F.1 Initiate action to restore AFW train to OPERABLE status.	Immediately	TSTF-412-A

CTS

3.7.5

TSTF-412-A

INSERT 1

3.4.b.4.B	C. Turbine driven AFW train inoperable due to one inoperable steam supply. AND One motor driven AFW train inoperable.	C.1 Restore the steam supply to the turbine driven train to OPERABLE status. OR C.2 Restore the motor driven AFW train to OPERABLE status.	~~[24 or~~ 48~~]~~ hours ~~[24 or~~ 48~~]~~ hours	4 4

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
3.4.b.7 DOC L05 DOC M05	SR 3.7.5.1	S ------------------------------NOTE------------------------------ 1. [AFW train(s) may be considered OPERABLE during alignment and operation for steam generator level control, when THERMAL POWER is < 15% RTP if it is capable of being manually realigned to the AFW mode of operation.] INSERT 2 --- Verify each 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	7 5 7
4.8.a, 4.8.b	SR 3.7.5.2	------------------------------NOTE------------------------------ [Not required to be performed for the turbine driven AFW pump until [24 hours] after ≥ ~~[1000]~~ 500 psig in the steam generator.] --- Verify the developed head of each AFW pump at the flow test point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program	
3.4.b.7 DOC M05	SR 3.7.5.3	------------------------------NOTE------------------------------ [AFW train(s) may be considered OPERABLE during alignment and operation for steam generator level control, when THERMAL POWER is < 15% RTP if it is capable of being manually realigned to the AFW mode of operation.] --- 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] months	5

7 **INSERT 2**

2. One AFW header cross-tie valve is allowed to be closed for up to 4 hours during testing of the motor driven AFW pump and the turbine driven AFW train may be considered OPERABLE, provided the cross-tie valve is capable of being remotely realigned.

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CTS

All changes are 1 unless otherwise noted

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.5.4	-----------------------------NOTES----------------------------- 1. [Not required to be performed for the turbine driven AFW pump until [24 hours] after ≥ ~~[1000]~~ 500 psig in the steam generator.] 2. [AFW train(s) may be considered OPERABLE during alignment and operation for steam generator level control, when THERMAL POWER is < 15% RTP if it is capable of being manually realigned to the AFW mode of operation.] -- Verify each AFW pump starts automatically on an actual or simulated actuation signal.	[18] months
~~SR 3.7.5.5~~	~~[Verify proper alignment of the required AFW flow paths by verifying flow from the condensate storage tank to each steam generator.~~	~~Prior to entering MODE 2 whenever unit has been in MODE 5, MODE 6, or defueled for a cumulative period of > 30 days]~~

DOC M05

3.4.b.7

DOC M05

5

6

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

1. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

2. The ISTS ACTIONS Note states "LCO 3.0.4.b is not applicable [when entering MODE 1]." The Reviewer's Note in the ISTS ACTIONS Bases states that if the plant depends on AFW for startup, the Note should state "LCO 3.0.4.b is not applicable." Kewaunee Power Station (KPS) depends on AFW during a startup, thus the bracketed words "when entering MODE 1" have not been included in the ITS.

3. The KPS design includes only one turbine driven AFW train. Therefore, the words in ISTS Condition A (Second Condition) have been changed from "One turbine driven AFW …" to "Turbine driven AFW …" Furthermore, since the AFW train could be inoperable for reasons other than the "pump," the word "pump" is changed to "train," consistent with the description in the ISTS Bases. This Condition is intended to apply to the entire train not just the pump. This change was also approved during the Davis-Besse ITS conversion.

4. ISTS 3.7.5 ACTION C, which was added by TSTF-412-A, provides either 24 or 48 hours to restore the components listed in the Condition. The ISTS Bases Reviewer's Note for this ACTION states that a 48 hour Completion Time is applicable to plants that can still meet the safety analysis requirement of 100% AFW flow to the SG(s) assuming no single failure and a FLB or MSLB resulting in the loss of the remaining steam generator supply to the turbine driven AFW pump. While the KPS design requires two AFW trains to provide 100% of the required flow, this is for a loss of normal feedwater event. The accident described in the ISTS ACTION C Bases is a MSLB accident. As stated in the Bases, one motor driven AFW train is inoperable, the turbine driven AFW train has one steam supply inoperable, and the accident, a MSLB, could result in the loss of the remaining steam supply to the turbine driven AFW train (due to the MSLB being on the remaining steam supply's associated SG). For the MSLB accident, the remaining motor driven AFW train can provide 100% AFW flow to the non-affected SG. This is described in the ITS 3.7.5 Bases, Applicable Safety Analyses section. Therefore, ITS 3.7.5 ACTION C includes a 48 hour Completion Time for Required Actions C.1 and C.2.

5. ISTS SRs 3.7.5.1, 3.7.5.3 and 3.7.5.4 include Notes that allow the AFW trains to be considered OPERABLE during alignment and operation for steam generator level control. KPS currently has a similar allowance in CTS 3.4.b.7, but limits this allowance to when THERMAL POWER is < 15% RTP. Therefore, this limit has been included in the applicable Notes in the SRs.

6. ISTS SR 3.7.5.5 is a bracketed Surveillance Requirement that verifies proper alignment of the AFW flow path by verifying flow from the condensate storage tanks to each steam generator. The ISTS Bases for the SR includes a Reviewer's Note that states this SR is not required by those units that use AFW for normal startup and shutdown. KPS uses the AFW System during normal startup and shutdown, as described in the ITS Bases, Background section. Therefore, this SR, which is not in the KPS CTS, has not been included in the ITS.

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

7. ISTS SR 3.7.5.1 has been modified by a second Note. The Note states that one of the two AFW header cross-tie valves (either AFW-10A or -10B) is allowed to be closed to perform testing of the motor driven AFW pump (e.g., performance of SR 3.7.5.2) for up to 4 hours and the turbine driven AFW train may be considered OPERABLE, provided the closed cross-tie valve is capable of being remotely (i.e., from the control room) realigned to the open position. This exception allows the AFW System to be out of its normal standby alignment and the turbine driven AFW train temporarily incapable of automatic injection to both SGs without declaring the turbine driven AFW train inoperable. The manner in which ISTS SR 3.7.5.2 is performed at KPS results in the turbine driven AFW train being incapable of automatically providing flow to both SGs. Thus, as written in the ISTS, two AFW trains would be inoperable during motor driven AFW pump testing, which would result in entry into ISTS 3.7.5 ACTION C and an immediate shutdown required (i.e., no time is allowed to restore one of the two inoperable AFW trains). This Note will preclude declaring the turbine driven AFW train inoperable during this test. This allowance is further justified in ITS 3.7.5 Discussion of Change L05.

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

All changes are 1 unless otherwise noted

B 3.7 PLANT SYSTEMS

B 3.7.5 Auxiliary Feedwater (AFW) System

s

, "Condensate Storage Tank (CST)"

TSTF-412-A

BASES

BACKGROUND

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

two

a common

s

inside

steam generator power operated relief valves

TSTF-412-A

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

, "Atmospheric Dump Valves (ADVs)"

, "Main Steam Safety Valves (MSSVs)"

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.

2

Any two AFW pumps provide greater than 100% of the AFW flow requirements

safeguard bus

one

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INSERT 1

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

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

both

1 **INSERT 1**

Since the discharge side of the two motor driven AFW pumps is interconnected by two normally open motor operated valves, each pump has the capability of feeding the other steam generator.

All changes are 1 unless otherwise noted

BACKGROUND (continued)

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

The AFW System actuates automatically on steam generator water level - low-low by the ESFAS (LCO 3.3.2) , "Engineered Safety Feature Actuation System (ESFAS) Instrumentation". TSTF-412-A The system also actuates on loss of offsite power, safety injection, and trip of all MFW pumps.

The AFW System is discussed in the ~~F~~ U SAR, Section ~~[10.4.9]~~ 6.6 (Ref. 1). 6

APPLICABLE SAFETY ANALYSES

The AFW System mitigates the consequences of any event with loss of normal feedwater.

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

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

INSERT 2

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

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

~~b. Loss of MFW.~~

~~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).~~ 4

~~The AFW System design is such that it can perform its function following an FWLB 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~~

1 **INSERT 2**

The limiting Design Basis Accident (DBA) for the AFW System is the loss of normal feedwater (LONF) event. The LONF event is limiting for AFW System performance requirements due to the requirement that the pressurizer not go water solid during the transient. The analysis of LONF event has been performed assuming no AFW flow is available until 13 minutes from event initiation with acceptable results. After 13 minutes, two AFW trains are required to meet the AFW flow requirements.

In addition to its accident mitigation function, the energy and mass addition capability of the AFW System is also considered with respect to Main Steam Line Break (MSLB) within containment. For MSLBs within containment, maximum pump flow from all three AFW pumps is assumed for 10 minutes until operations can isolate the flow by tripping the AFW pumps or by closing the respective pump discharge flow path(s). The isolation of the AFW System limits the energy and mass addition so that containment remains within design limits. Furthermore, flow from only one AFW train is actually required to meet the AFW flow requirement to remove decay heat.

All changes are 1 unless otherwise noted

BASES

APPLICABLE SAFETY ANALYSES (continued)

~~ESFAS logic may not detect the affected steam generator if the backflow check valve to the affected MFW header worked properly. One motor 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.~~

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 AC ~~power.~~ voltage on 4kV Bus 1 and Bus 2. ~~DC~~ power operated throttle valves are provided ~~for each~~ at the discharge of each motor driven AFW ~~line~~ pump to control the AFW flow to each steam generator. INSERT 3

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 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. 2

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~~ and capable of ~~[two] diverse paths, each~~ supplying AFW to ~~separate~~ their respective 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, and shall be capable of supplying AFW to ~~any~~ both of the steam generators. The piping, valves, instrumentation, and controls in the required flow paths also are required to be OPERABLE. 2

The LCO is modified by a Note indicating that 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 3**

The discharge of the turbine driven AFW pump is tied into the cross-over pipe located on the discharge of the motor driven AFW pumps. The cross-tie valves (AFW-10A and AFW-10B) are DC motor operated throttle valves and are used to control the AFW flow to each steam generator from the turbine driven AFW pump.

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All changes are 1 unless otherwise noted

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

~~-----------------------------------REVIEWER'S NOTE------------------------------------~~
~~The LCO 3.0.4.b Note prohibits application of the LCO 3.0.4.b exception when entering MODE 1 if the plant does not depend on AFW for startup. If the plant does depend on AFW for startup, the Note should state, "LCO 3.0.4.b is not applicable."~~
~~---~~ 3

A Note prohibits the application of LCO 3.0.4.b to an inoperable AFW train ~~[when entering MODE 1]~~. There is an increased risk associated with ~~[~~entering a MODE or other specified condition in the Applicability~~]~~ ~~[entering MODE 1]~~ with an AFW train inoperable and the provisions of LCO 3.0.4.b, which allow entry into a MODE or other specified condition in the Applicability with the LCO not met after performance of a risk assessment addressing inoperable systems and components, should not be applied in this circumstance. 2

~~[~~ A.1 2

due to one inoperable steam supply train for any reason TSTF-412-A

If ~~one of the two steam supplies to~~ the turbine driven AFW train is inoperable, or if ~~a~~ the 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: 7

due to one inoperable steam supply TSTF-412-A

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 and the turbine driven train is still capable of performing its specified function for most postulated events.

train

b. For the inoperability of a turbine driven AFW ~~pump~~ train 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. 7

TSTF-412-A

All changes are 1 unless otherwise noted

BASES

ACTIONS (continued)

due to one inoperable steam supply

c. For both the inoperability of ~~a steam supply line to~~ the turbine driven pump and an inoperable turbine driven AFW ~~pump~~ train 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~~ train. TSTF-412-A 7

train for an inoperable turbine driven AFW ~~pump~~ in MODE 3

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

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 the redundant capabilities afforded by the AFW System, the time needed for repairs, and the low probability of a DBA occurring during this time period. 2 TSTF-412-A

C.1 and C.2

INSERT 4

When Required Action A.1 ~~[or~~ , B.1~~]~~ , C.1, or C.2 cannot be completed within the required Completion Time, or if two AFW trains are inoperable in MODE 1, 2, or 3 for reasons other than Condition C, 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. TSTF-412-A 2

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.

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.

TSTF-412-A

INSERT 4

With one of the required motor driven AFW trains (pump or flow path) inoperable and the turbine driven AFW train inoperable due to one inoperable steam supply, action must be taken to restore the affected equipment to OPERABLE status within ~~[24]~~ ~~[~~48~~]~~ hours. 2
Assuming no single active failures when in this condition, the accident (a ~~FLB or~~ MSLB) could result in the loss of the remaining steam supply to the turbine driven AFW pump due to the faulted SG. ~~In this condition, the AFW system may no longer be able to meet the required flow to the SGs assumed in the safety analysis, [either due to the analysis requiring flow from two AFW pumps or due to the remaining AFW pump having to feed a faulted SG].~~ 1

~~-----REVIEWER'S NOTE-----~~
~~Licensees should adopt the appropriate Completion Time based on their plant design. The 24 hour Completion Time is applicable to plants that can no longer meet the safety analysis requirement of 100% AFW flow to the SG(s) assuming no single active failure and a FLB or MSLB resulting in the loss of the remaining steam supply to the turbine driven AFW pump. The 48 hour Completion Time is applicable to plants that can still meet the safety analysis requirement of 100% AFW flow to the SG(s) assuming no single active failure and a FLB or MSLB resulting in the loss of the remaining steam supply to the turbine driven AFW pump.~~ 3
~~-----~~

~~[The 24 hour Completion Time is reasonable based on the remaining OPERABLE steam supply to the turbine driven AFW pump, the availability of the remaining OPERABLE motor driven AFW pump, and the low probability of an event occurring that would require the inoperable steam supply to be available for the turbine driven AFW pump]~~ 2

~~[~~The 48 hour Completion Time is reasonable based on the fact that the remaining motor driven AFW train is capable of providing 100 % of the AFW flow requirements following a MSLB accident, and the low probability of an event occurring that would challenge the AFW system.~~]~~ 2 2 1

D.1 and D.2

All changes are 1 unless otherwise noted

BASES

ACTIONS (continued)

E ~~D~~.1 TSTF-412-A

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. 2

Required Action E ~~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. TSTF-412-A

F ~~E~~.1 TSTF-412-A

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

SURVEILLANCE REQUIREMENTS

SR 3.7.5.1

Verifying the correct alignment for manual, power operated, and automatic valves in the 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.

All changes are 1 unless otherwise noted

BASES

SURVEILLANCE REQUIREMENTS (continued)

(Note 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 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. 2 7

INSERT 5

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

Alignment and operation for steam generator load control includes placing the AFW pump control switches in the control room in the "pull out" position, throttling or closing AFW-2A and AFW-2B, and closing AFW-10A and AFW-10B. 5

SR 3.7.5.2

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

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. 2

7 **INSERT 5**

This SR is modified by a second Note (Note 2) that states one of the two AFW header cross-tie valves (either AFW-10A or -10B) is allowed to be closed to perform testing of the motor driven AFW pump (e.g., performance of SR 3.7.5.2) for up to 4 hours and the turbine driven AFW train may be considered OPERABLE, provided the closed cross-tie valve is capable of being remotely (i.e., from the control room) realigned to the open position. This exception allows the AFW System to be out of its normal standby alignment and the turbine driven AFW train temporarily incapable of automatic injection to both SGs without declaring the turbine driven AFW train inoperable. This is acceptable since the valves are capable of remote manual operation from the control room.

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All changes are 1 unless otherwise noted

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.5.3

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] 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. The [18] month Frequency is acceptable based on operating experience and the design reliability of the equipment. 2 2

[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 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.] 2 5 2

Alignment and operation for steam generator load control includes placing the AFW pump control switches in the control room in the "pull out" position, throttling or closing AFW-2A and AFW-2B, and closing AFW-10A and AFW-10B.

~~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.~~ 6

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] 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. 2

All changes are 1 unless otherwise noted

BASES

SURVEILLANCE REQUIREMENTS (continued)

This SR is modified by [a] [two] Note[s]. [Note 1 indicates that the SR be deferred until suitable test conditions are established. This deferral is required because there is insufficient steam pressure to perform the test.] 2
[The Note [2] states that one or more AFW trains may be considered OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually (i.e., remotely or locally, as appropriate) realigned to the AFW mode of operation, provided it is not otherwise inoperable. This exception allows the system to be out of its normal standby alignment and temporarily incapable of automatic initiation without declaring the train(s) inoperable. Alignment and operation for steam generator load control includes placing the AFW pump control switches in the control room in the "pull out" position, throttling or closing AFW-2A and FW-2B and closing AFW-10A and AFW-10B. 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.] 2 3 2

[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.]~~ 3

~~-----------------------------------REVIEWER'S NOTE-----------------------------------
This SR is not required by those units that use AFW for normal startup and shutdown.
---~~

REFERENCES

1. ~~F~~ U SAR, Section ~~[10.4.9]~~ 6.6. 2

2. ASME Code for Operation and Maintenance of Nuclear Power Plants, 1998 Edition through OMB 2000 Addenda.

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.5 BASES, AUXILIARY FEEDWATER (AFW) 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 ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

3. The Reviewer's Note has been deleted. This information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This is not meant to be retained in the final version of the plant specific submittal.

4. The punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, TSTF-GG-05-01, Section 5.1.3.

5. The description of valve and switches affected by the alignment and operation for steam generator level control has been added, consistent with CTS 3.4.b.7.

6. ISTS SR 3.7.5.3 Bases describes a Note that is not in the ISTS SR 3.7.5.3. Therefore, the Bases description has been deleted.

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

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Specific No Significant Hazards Considerations (NSHCs)

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

There are no specific NSHC discussions for this Specification.

ATTACHMENT 6

ITS 3.7.6, CONDENSATE STORAGE TANKS (CSTs)

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

A01

ITS

ITS 3.7.6

s (CSTs)

c. Condensate Storage Tank

Applicability

LCO 3.7.6

SR 3.7.6.1

1. The Reactor Coolant System shall not be heated > 350°F unless a minimum usable volume of 41,500 gallons of water is available in the condensate storage tanks.

Add proposed second Applicability — M02

ACTION A

2. If the Reactor Coolant System temperature is > 350°F and a minimum usable volume of 41,500 gallons of water is not available in the condensate storage tanks, reactor operation may continue for up to ~~48 hours~~ 7 days. — L01

Add proposed Required Action A.1

ACTION B

3. If the time limit of TS 3.4.c.2 above cannot be met, within 1 hour initiate action to: — M03

- Achieve HOT STANDBY within 6 hours
- Achieve HOT SHUTDOWN within the following 6 hours
- Achieve and maintain the Reactor Coolant System temperature < 350°F within an additional 12 hours.

Add proposed Required Action B.2 — M02

Add proposed SR 3.7.6.1 — M01

d. Secondary Activity Limits

1. The Reactor Coolant System shall not be heated > 350°F unless the DOSE EQUIVALENT Iodine-131 activity on the secondary side of the steam generators is $\leq$ 0.1 μCi/gram.

2. When the Reactor Coolant System temperature is > 350°F, the DOSE EQUIVALENT Iodine-131 activity on the secondary side of the steam generators may exceed 0.1 μCi/gram for up to 48 hours.

3. If the requirement of TS 3.4.d.2 cannot be met, then within 1 hour action shall be initiated to:

- Achieve HOT STANDBY within 6 hours
- Achieve HOT SHUTDOWN within the following 6 hours
- Achieve and maintain the Reactor Coolant System temperature < 350°F within an additional 12 hours.

See ITS 3.7.16

DISCUSSION OF CHANGES
ITS 3.7.6, CONDENSATE STORAGE TANKS (CSTs)

ADMINISTRATIVE CHANGES

A01 In the conversion of the Kewaunee Power Station (KPS) 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. 3.0, "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

M01 CTS 3.4.c.1 requires, in part, a minimum usable volume of 41,500 gallons of water is available in the condensate storage tanks. However, no specific Surveillance Requirement is provided to verify the volume is met. ITS SR 3.7.6.1 requires that the CSTs minimum usable volume is ≥ 41,500 gallons every 12 hours. This changes the CTS by requiring that CSTs minimum usable volume be verified every 12 hours.

The purpose of CTS 3.4.c is to ensure that the CSTs are OPERABLE when they are the supply source for the Auxiliary Feedwater System. The 12 hour frequency for the proposed Surveillance is selected based on operating experience and the need for operator awareness. This change is more restrictive because a new SR with a specific Frequency has been added.

M02 The CTS requirement on the CSTs are applicable when the Reactor Coolant System is > 350°F. ITS 3.7.6 is Applicable in MODES 1, 2, and 3 and in addition, MODE 4 "when the 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 by requiring the CSTs to be OPERABLE in MODE 4 "when a SG is relied upon for heat removal."

This change is acceptable because the CSTs may be needed when ≤ 350°F (i.e., MODE 4) if the residual heat removal (RHR) loop has not yet been placed in service. If offsite power were to be lost when the RHR loop is not yet in service, the steam generators, fed from an auxiliary feedwater pump with the CSTs providing the suction source, would be relied upon for residual heat removal. This change is designated as more restrictive because the CSTs are now required to be OPERABLE in MODE 4 when a steam generator is relied upon for heat removal.

M03 CTS 3.4.c.3 requires that if the CSTs are not restored to OPERABLE status within 48 hours, then, within 1 hour, initiate action to achieve HOT STANDBY within 6 hours, achieve HOT SHUTDOWN within the following 6 hours, and to achieve and maintain the Reactor Coolant System temperature < 350°F within an additional 12 hours. ITS 3.7.6 ACTION B requires that the unit to be in MODE 3 (equivalent to CTS HOT SHUTDOWN) within 6 hours and to be in MODE 4 (equivalent to RCS temperature < 350°F), without reliance on the steam

DISCUSSION OF CHANGES
ITS 3.7.6, CONDENSATE STORAGE TANKS (CSTs)

generator for heat removal within 24 hours. This changes the time required to be in MODE 3 from 13 hours to 6 hours, deletes the requirement to be in MODE 2 within 7 hours, and changes the time to be in MODE 4 from 25 hours to 24 hours. The addition of the condition to be in MODE 4 "without reliance on the steam generators for heat removal" is discussed in DOC M02.

The purpose of CTS 3.4.c.3 is to place the unit in a condition in which it does not rely on the steam generators for heat removal when the CSTs are 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 6 hours to be in MODE 3 in lieu of the current 12 hours and 24 hours to be in MODE 4 in lieu of the current 25 hours ensures a unit shutdown is commenced and completed within a reasonable period of time upon failure to restore the CSTs to OPERABLE status within the allowed Completion Time. Additionally, since ITS 3.7.6 Required Action B.1 requires the unit to be in MODE 3 within 6 hours, there is no need to maintain the requirement to be MODE 2 within the same 6 hours. This change is designated as more restrictive because less time is allowed for the unit to reach MODES 3 and 4 than was allowed in the CTS.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

None

LESS RESTRICTIVE CHANGES

L01 *(Category 3 – Relaxation of Completion Time)* With the CSTs inoperable, CTS 3.4.c.2 requires restoration of the CSTs within 48 hours. ITS 3.7.6 Required Action A.1 requires verification of the OPERABILITY of the backup water supply within 4 hours and Required Action A.2 requires the CSTs to be restored to OPERABLE status within 7 days. This changes the CTS by allowing verification of the backup water supply's OPERABILITY and extending the Completion Time for restoration of the CSTs to 7 days.

The purpose of CTS 3.4.c.2 is to restore the CSTs to OPERABLE status. 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 allowed restoration time of 7 days is only allowed provided the OPERABILITY of

DISCUSSION OF CHANGES
ITS 3.7.6, CONDENSATE STORAGE TANKS (CSTs)

the backup water supply is periodically verified. This change is designated as less restrictive because it allows verification of the backup water source and additional time is allowed to restore parameters to within the LCO limits than was allowed in the CTS.

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

CTS

All changes are 1 unless otherwise noted

s CST 3.7.6

3.7 PLANT SYSTEMS

3.7.6 Condensate Storage Tank (CST) s

3.4.c.1 LCO 3.7.6 The CST s shall be OPERABLE.

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

ACTIONS

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

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY	
3.4.c.1, DOC M01	SR 3.7.6.1 Verify usable volume in the CST s ~~level~~ is ≥ ~~[110,000~~ 41,500 gal~~]~~.	12 hours	2 3

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.6, CONDENSATE STORAGE TANKS (CSTs)

1. Changes are made to the ISTS Specification which reflects the plant specific nomenclature, number as designed and built.

2. Changes are made to the ISTS Specification which reflects the Kewaunee Power Station specific value. Therefore, ISTS SR 3.7.6.1 has been changed to verify the usable volume of the CSTs. The change is necessary because Kewaunee Power Station reference document containing the plant specific value utilized in ITS SR 3.7.6.1 is referenced to volume. Therefore the term "level" is revised to "volume."

3. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

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

All changes are 1 unless otherwise noted

CST s
B 3.7.6

B 3.7 PLANT SYSTEMS

B 3.7.6 Condensate Storage Tank s (CST)

BASES

BACKGROUND

two s the preferred

The CST provides ~~a safety grade~~ 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). The steam produced is released to the atmosphere by the main steam safety valves , Pressurizer Power Operated Relief Valves (PORVs), or the ~~atmospheric dump valves~~ Steam Generator Power Operated Relief Valves (SG PORVs). The AFW pumps ~~operate with a continuous~~ can be aligned recirculation to the CST or to the turbine building standpipe. 2

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

~~Because~~ the CST ~~is~~ are a principal component in removing residual heat from ~~the RCS, it is designed to withstand earthquakes and other natural phenomena, including missiles that might be generated by natural phenomena.~~ . The CST ~~is~~ designed to Seismic Category I and the suction piping outside the auxiliary building are classified as Seismic Category III and the suction piping inside the auxiliary building is to ensure availability of the feedwater supply. Feedwater is also available from an alternate source (SW System) that is designed to Seismic Category I.

A description of the CST is found in the ~~F~~ U SAR, Section ~~[9.2.6]~~ 6.6.2 (Ref. 1). 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 ~~F~~ U SAR, Chapters ~~[6] and [15]~~ 14 (Ref~~s~~. 2 ~~and 3, respectively~~). For anticipated operational occurrences and accidents that do not affect the OPERABILITY of the steam generators, ~~the analysis assumption is generally 30 minutes at MODE 3, steaming through the MSSVs, followed by a cooldown to residual heat removal (RHR) entry conditions at the design cooldown rate.~~ 3

INSERT 1

~~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:~~

1 **INSERT 1**

the safety analyses do not specifically consider the volume of CST inventory necessary for achieving or maintaining safe shutdown subsequent to the event. The current basis for minimum CST volume required to support the safety analyses described in Reference 2 is that there be adequate water inventory in the normal supply to the AFW pump suctions to allow the operating crew sufficient time to transfer AFW pump suctions to the unlimited safety grade supply (i.e., the Service Water (SW) System) should it be necessary during an event. An additional limiting CST inventory requirement was concurrently established based upon the plant's ability to mitigate the effects of a complete loss of all alternating current (AC) power sources (Reference 3). The additional CST inventory limit was understood to bound the minimum inventory required to allow sufficient time to transfer the AFW suction alignment to the SW System.

Subsequently, the NRC identified that conditions required solely to address mitigating strategies for a complete loss of AC power were not required to be controlled in plant Technical Specifications (Reference 4).

The basis for the minimum CST inventory requirement remains the provision of adequate time to allow for the manual transfer of AFW pump suction sources from the CSTs to the SW System and that this requirement is conservatively met by maintaining the minimum CST inventory consistent with the minimum inventory necessary to mitigate the effects of a Station Blackout event.

Because any single active failure can only prevent the alignment of a single OPERABLE AFW pump suction to an OPERABLE SW System header, this arrangement is consistent with the applicable single failure criteria.

All changes are 1 unless otherwise noted

s

BASES

APPLICABLE SAFETY ANALYSES (continued)

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

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.

s

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

allow the operating crew time to transfer AFW pump suctions to the unlimited safety grade supply (SW System) should it be necessary during an event. The LCO value conservatively bounds this requirement and since the safety grade supply is the SW System, this ensures

LCO

s

To satisfy accident analysis assumptions, the CST must contain sufficient cooling water ~~to remove decay heat for [30 minutes] following a reactor trip from 102% RTP, 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.

s is

The CST ~~level~~ required ~~is equivalent to a~~ usable volume ~~of~~ 41,500 ≥ ~~[110,000~~ gallons~~]~~, ~~which is based on holding the unit in MODE 3 for [2] hours, followed by a cooldown to RHR entry conditions at [75]°F/hour. This basis is established in Reference 4 and exceeds the volume required by the accident analysis.~~ INSERT 2 3

s

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

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. s are

s are

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

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1 **INSERT 2**

The usable storage capacity of each of the two condensate storage tanks is approximately 70,500 gallons, which is more than the 41,500 gallons required by the LCO. The LCO minimum required volume can be met using one or both CSTs. If using both CSTs to meet the limit, then the CSTs must be cross-tied.

All changes are 1 unless otherwise noted

s

BASES

ACTIONS

A.1 and A.2

(Service Water (SW) System)

s are

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.

associated SW trains are OPERABLE

s

s

B.1 and B.2

s

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. 3

SURVEILLANCE REQUIREMENTS

SR 3.7.6.1

one or both, as necessary,

s

This SR verifies that the CST contain~~s~~ 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 alarm~~s~~, to alert the operator to abnormal deviations in the CST ~~level~~. 4 4

s an s usable volume

REFERENCES

1. ~~F~~SAR, Section ~~[9.2.6]~~. 6.6.2

U

~~2. FSAR, Chapter [6].~~

2 U

~~3~~. ~~F~~SAR, Chapter ~~[15]~~. 14

3

3. License Amendment 49, dated April 29, 1983.

4 Letter dated November 20, 1990 from M.J. Davis (NRC) to K.H. Evers (WPS), "Safety Evaluation of the Kewaunee Power Plant Response to the Station Blackout Rule."

1

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.6 BASES, CONDENSATE STORAGE TANKS (CSTs)

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. ISTS 3.7.6 Background section states, in part, that the steam produced is released to the atmosphere by the main steam safety valves or the atmospheric dump valves. ITS 3.7.6 Background has been revised to state, in part, the steam produced is released to the atmosphere by the main steam safety valves or the pressure operated relief valves (PORVs). Based on the Kewaunee Power Station specific plant design, the pressure operated relief valves are utilized to release steam versus atmospheric dump valves.

3. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

4. Changes are made to the ISTS Bases which reflects the Kewaunee Power Station specific design. Therefore, ISTS SR 3.7.6.1 has been changed to reflect that the operator is alerted to abnormal deviations in the CSTs usable volume rather than the CSTs level. The change is necessary because the Kewaunee Power Station reference document containing the plant specific value utilized in ITS SR 3.7.6.1 is referenced to volume. Therefore the term "level" is revised to "usable volume."

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.6, CONDENSATE STORAGE TANKS (CSTs)

There are no specific NSHC discussions for this Specification.

ATTACHMENT 7

ITS 3.7.7, COMPONENT COOLING (CC) SYSTEM

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

ITS

A01

ITS 3.7.7

(CC)

d. Component Cooling System

M01

Applicability

1. The reactor shall not be made or maintained critical unless the following conditions are satisfied, except for LOW POWER PHYSICS TESTS and except as provided by TS 3.3.d.2.

M04

LCO 3.7.7

A. TWO component cooling water trains are OPERABLE with each train consisting of:

LA01

1. ONE component cooling water pump
2. ONE component cooling water heat exchanger
3. An OPERABLE flow path consisting of all valves and piping associated with the above train of components and required to function during accident conditions.

Add proposed Required Action A.1 Note

A02

ACTION A

2. During power operation or recovery from an inadvertent trip, ONE component cooling water train may be inoperable for a period of 72 hours. If OPERABILITY is not restored within 72 hours, then within 1 hour action shall be initiated to:

M01

ACTION B

- Achieve HOT STANDBY within the next 6 hours.
- Achieve HOT SHUTDOWN within the following 6 hours.
- Achieve and maintain the Reactor Coolant System T_{avg} less than 350°F by use of alternate heat removal methods within an additional 36 hours.

M03

M01

Add proposed Required Action B.2

M01

Add proposed SR 3.7.7.1, SR 3.7.7.2, and SR 3.7.7.3

M02

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DISCUSSION OF CHANGES
ITS 3.7.7, COMPONENT COOLING (CC) SYSTEM

ADMINISTRATIVE CHANGES

A01 In the conversion of the Kewaunee Power Station (KPS) 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. 3.0, "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.

A02 The Action for CTS 3.3.d.2 allows 72 hours to restore an inoperable CC train to OPERABLE status. ITS 3.7.7 ACTION A has this same requirement; however one 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 CC System. 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 Note to ITS 3.7.7 Action A is to ensure appropriate Actions are taken when an inoperable CC train results in an inoperable RHR train. CTS 3.3.d.2 is not Applicable in MODE 4, thus if an RHR train has no CC flow, the definition of OPERABLE-OPERABILITY would require the RHR train to be considered inoperable, and the appropriate action of CTS 3.4.a.2.A taken. Thus, the addition of the Note is applicable and is administrative, since this is what the CTS currently requires.

MORE RESTRICTIVE CHANGES

M01 The CTS 3.3.d Applicability of the Component Cooling (CC) System is that the reactor shall not be made or maintained critical unless two CC trains are OPERABLE. In the ITS, this is MODES 1 and 2. Also, CTS 3.3.d.2 provides actions when a CC train is inoperable during power operation or recovery from an inadvertent trip. ITS 3.7.7 requires the CC System to be OPERABLE in MODES 1, 2, 3, and 4. Thus, ITS 3.7.7 ACTION A must be entered if a CC train is inoperable in MODE 1, 2, 3, or 4. In addition, when a CC train is inoperable and a unit shutdown is required, CTS 3.3.d.2 requires the unit to reduce RCS T_{avg} to < 350ºF (ITS equivalent MODE 4) within an additional 36 hours (after the time to reach HOT STANDBY and HOT SHUTDOWN). Consistent with the change in Applicability, the requirement to be in MODE 5 within 36 hours is added as indicated in ITS 3.7.7 Required Action B.2. This changes the CTS by requiring the CC System to be OPERABLE in MODES 3 and 4, requiring actions to be taken in MODES 3 and 4, and providing a Required Action to place the unit outside the Applicability.

The CC System is designed to operate under both normal operating conditions and accident conditions. During normal operating conditions, the CC System acts as a heat sink to provide cooling to various nonessential components. In addition, the CC system acts as a heat sink during plant cooldown conditions to remove residual heat from the Reactor Coolant System (RCS) via the Residual

DISCUSSION OF CHANGES
ITS 3.7.7, COMPONENT COOLING (CC) SYSTEM

Heat Removal System. During accident conditions, the CC System removes the post loss of coolant accident (LOCA) heat load from the containment sump fluid during the recirculation phase to provide a gradual reduction in temperature of the fluid as it is supplied to the RCS by the Emergency Core Cooling System pumps. The addition of the MODES 3 and 4 Applicability is acceptable since the CC System is required to be OPERABLE to support both normal operations and be prepared to perform its primary post accident function of RCS heat removal. The change to the final unit condition (MODE 5 versus < 350ºF) is acceptable since it places the unit outside the Applicability of the LCO and the proposed 36 hours is less than the time allowed to be < 350 ºF (48 hours). This change is more restrictive because a new Applicability containing MODES 3 and 4 has been added and an associated Required Action to exit the Applicability has been added.

M02 CTS 3.3.d does not provide a Surveillance Requirement to verify each CC 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. The ITS adds a Surveillance Requirement (SR 3.7.7.1) to verify each CC 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 once every 31 days. CTS 3.3.d does not provide a Surveillance Requirement to verify each CC 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. The ITS adds a Surveillance Requirement (SR 3.7.7.2) to verify each CC 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 once every 18 months. CTS 3.3.d does not provide a Surveillance Requirement to verify each CC pump starts automatically on an actual or simulated actuation signal. The ITS adds a Surveillance Requirement (SR 3.7.7.3) to verify each CC pump starts automatically on an actual or simulated actuation signal once every 18 months. This changes the CTS by adding new Surveillance Requirements for the CC System.

This change is acceptable because the added Surveillance Requirements prove that the CC System is capable of removing the heat load from the containment sump fluid during the recirculation phase of the LOCA to provide a gradual reduction in temperature of the fluid as it is supplied to the RCS by the Emergency Core Cooling System pumps. This change is designated as more restrictive because new Surveillance Requirements are added.

M03 CTS 3.3.d.2, in part, requires that if the CC System is not restored to OPERABLE status within 72 hours, then, within 1 hour, initiate action to achieve HOT STANDBY within 6 hours and achieve HOT SHUTDOWN within the following 6 hours. ITS 3.7.7 Required Action B.1 requires that the unit be in MODE 3 (equivalent to CTS HOT SHUTDOWN) within 6 hours. This deletes the requirement to be in HOT STANDBY (equivalent to ITS MODE 2) within 7 hours and changes the time required to be in MODE 3 from 13 hours to 6 hours.

The purpose of CTS 3.3.d.2 is to place the unit in a condition in which the LCO does not apply. This change is acceptable because the Completion Time is

DISCUSSION OF CHANGES
ITS 3.7.7, COMPONENT COOLING (CC) SYSTEM

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 6 hours to be in MODE 3 in lieu of the current 13 hours ensures a unit shutdown is commenced and completed within a reasonable period of time upon failure to restore the CC System to OPERABLE status within the allowed Completion Time. Additionally, since ITS 3.7.7 Required Action B.1 requires the unit to be in MODE 3 within 6 hours, there is no need to maintain the requirement to be MODE 2 within 7 hours. This change is designated as more restrictive because less time is allowed for the unit to reach MODE 3 than was allowed in the CTS.

M04 CTS 3.3.d.1 states that the CC System is not required to be OPERABLE during LOW POWER PHYSICS TESTS. ITS 3.7.7 does not include this exception; the CC System is required during PHYSICS TESTS. This changes the CTS by requiring the CC System to be OPERABLE during PHYSICS TESTS.

The purpose of CTS 3.3.d is to ensure the CC System is OPERABLE under both normal operating and accident conditions. Since the KPS Physics Tests do not require the CC System to be inoperable to perform the tests, there is no reason to maintain this current allowance. Therefore, this change is acceptable and is more restrictive because the CC System is now required to be OPERABLE under more conditions in the ITS than in the CTS.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.3.d.1.A requires two component cooling water trains be OPERABLE with each train consisting of the following: 1) one component cooling water pump; 2) one component cooling water heat exchanger; and 3) an OPERABLE flow path consisting of all valves and piping associated with the above train of components and required to function during accident conditions. ITS LCO 3.7.7 requires two CC trains to be OPERABLE, but does not define the components and the associated flow path that comprise an OPERABLE CC train. This changes the CTS by moving the description of the CC trains 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 still retains the requirement for both CC 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

DISCUSSION OF CHANGES
ITS 3.7.7, COMPONENT COOLING (CC) SYSTEM

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

None

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

All changes are 1 unless otherwise noted

3.7 PLANT SYSTEMS

3.7.7 Component Cooling ~~Water~~ (CCW) System

3.3.d.1.A LCO 3.7.7 Two CCW trains shall be OPERABLE.

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

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
3.3.d.2	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 System. ------------------------------------- Restore CCW train to OPERABLE status.	72 hours
3.3.d.2	B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

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CTS

All changes are 1 unless otherwise noted

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
DOC M02	SR 3.7.7.1	water ------------------------------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	
DOC M02	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	2
DOC M02	SR 3.7.7.3	Verify each CCW pump starts automatically on an actual or simulated actuation signal.	[18] months	2

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.7, COMPONENT COOLING (CC) 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 ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

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

All changes are 1 unless otherwise noted

B 3.7 PLANT SYSTEMS

B 3.7.7 Component Cooling ~~Water~~ (CC~~W~~) System

BASES

BACKGROUND

The CC~~W~~ 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 CC~~W~~ System also provides this function for various nonessential components~~, as well as the spent fuel storage pool~~. The CC~~W~~ System serves as a barrier to the release of radioactive byproducts between potentially radioactive systems and the Service Water System, and thus to the environment.

OPERM-218

The common ~~A typical~~ CC~~W~~ System is arranged with ~~as~~ two independent pumps, two heat exchangers, and a full capacity cooling loop~~s~~, 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~~n~~ ~~open~~ common surge tank in the system provides a head of water ~~pump trip protective functions~~ to ensure that sufficient net positive suction head is available. The cooling supply and return header is also common to both trains. The pump in each train is automatically started on receipt of a safety injection signal~~, and all nonessential components are isolated~~.

Drawing No.: E-1636, E-1638, E-2001, and E-2045

Additional information on the design and operation of the system, along with a list of the components served, is presented in the ~~F~~USAR, Section ~~[9.2.2]~~ 9.3.2 (Ref. 1). The principal safety related function of the CC~~W~~ 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. 2

APPLICABLE SAFETY ANALYSES

The design basis of the CC~~W~~ System is for one CC~~W~~ 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)~~. Analysis demonstrates that the CC System can remove this heat load with CC System temperature as high as 150°F. ~~The Emergency Core Cooling System (ECCS) LOCA and containment OPERABILITY LOCA each model the maximum and minimum performance of the CCW System, respectively.~~ The normal temperature of the CC~~W~~ water is ~~[80]~~ 90°F to 100°F, and, during unit cooldown to MODE 5 (~~T_{cold} < [200]°F~~ $T_{avg} \leq 200$), a maximum temperature of ~~95~~ 119°F is assumed. This prevents the containment sump fluid from increasing in temperature during the recirculation phase following a LOCA, and provides a gradual reduction in the temperature of this fluid as it is supplied to the Reactor Coolant System (RCS) by the ECCS pumps. 2 2 2 3

All changes are 1 unless otherwise noted

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.

has the capability

T_{avg} $T_{avg} \leq 200$

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

$T_{avg} < 200$ 80

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

pumps pump/heat exchanger pair

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.

pump

A CCW train is considered OPERABLE when:

INSERT 1

~~a. The pump and associated surge tank are OPERABLE and~~

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

water

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.

affect the individual , 2

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.

1

INSERT 1

a. One CC pump is OPERABLE;

b. One CC heat exchanger is OPERABLE; and

c. A flow path consisting of all valves and piping associated with the above train of components and required to function during accident conditions is OPERABLE.

In addition, both CC trains require the common surge tank and the common supply and return headers to be OPERABLE.

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All changes are 1 unless otherwise noted

BASES

APPLICABILITY (continued)

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.

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

water

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,

water

System

All changes are 1 unless otherwise noted

BASES

SURVEILLANCE REQUIREMENTS (continued)

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 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] 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] month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint. 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] 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] month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint. 2

REFERENCES

1. FSAR, Section ~~[9.2.2]~~. 9.3.2 U
2. FSAR, Section [6.2]. 2

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.7 BASES, COMPONENT COOLING (CC) 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 ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

3. The ISTS Applicable Safety Analyses contains a value of 95°F for the maximum component cooling water temperature assumed during unit cooldown to MODE 5. At Kewaunee Power Station (KPS), the normal CC water temperature is maintained between 90°F and 100°F. During the KPS power uprate project, a calculation was performed to evaluate the impact the increase in reactor power will have on the cooldown performance of the Residual Heat Removal (RHR) system. As part of that calculation, a CC water maximum allowable temperature of 120°F is utilized as a design input into the models performed. Using the maximum allowable temperature of 120°F, an input assumption applicable to the cooldown analyses was made that limits the maximum CC water temperature to 119°F during the entire cooldown period when the Reactor Coolant System temperature is ≤ 350°F. This change is acceptable since the ISTS 95°F for the maximum component cooling water temperature has been changed to reflect KPS specific analysis values.

4. Editorial change made for clarity.

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Specific No Significant Hazards Considerations (NSHCs)

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

There are no specific NSHC discussions for this Specification.

ATTACHMENT 8

ITS 3.7.8, SERVICE WATER (SW) SYSTEM

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

ITS

A01

ITS 3.7.8

(SW)

e. Service Water System

M01

Applicability

1. The reactor shall not be made critical unless the following conditions are satisfied, except for LOW POWER PHYSICS TESTS and except as provided by TS 3.3.e.2.

M05

LCO 3.7.8

A. TWO service water trains are OPERABLE with each train consisting of:

1. TWO service water pumps

2. An OPERABLE flow path consisting of all valves and piping associated with the above train of components and required to function during accident conditions. This flow path shall be capable of taking a suction from the forebay and supplying water to the redundant safeguards headers.

LA01

3. An OPERABLE turbine building service water header isolation valve and associated isolation logic capable of closing the header isolation valve, or a closed and deactivated turbine building service water header isolation valve.

B. The Forebay Water Level Trip System is OPERABLE.

Add proposed ACTION A Notes 1 and 2

M02

ACTION A

2. During power operation or recovery from an inadvertent trip, ONE service water train may be inoperable for a period of 72 hours. If OPERABILITY is not restored within 72 hours, then within 1 hour action shall be initiated to:

M01

ACTION B

- Achieve HOT STANDBY within the next 6 hours.
- Achieve HOT SHUTDOWN within the following 6 hours.

M04

- Achieve and maintain Reactor Coolant System T_{avg} less than 350°F by use of alternate heat removal methods within an additional 36 hours.

M01

Add proposed Required Action B.2

M01

A01

TABLE TS 3.5-1

ENGINEERED SAFETY FEATURES INITIATION INSTRUMENT SETTING LIMITS

NO.	FUNCTIONAL UNIT	CHANNEL	SETTING LIMIT
1	High Containment Pressure (Hi)	Safety injection[1]	≤ 4 psig
2	High Containment Pressure (Hi-Hi)	a. Containment spray b. Steam line isolation of both lines	≤ 23 psig ≤ 17 psig
3	Pressurizer Low Pressure	Safety injection[1]	≥ 1815 psig
4	Low Steam Line Pressure	Safety injection[1] Lead time constant Lag time constant	≥ 500 psig ≥ 12 seconds ≤ 2 seconds
5	High Steam Flow in a Steam Line Coincident with Safety Injection and "Lo-Lo" T_{avg}	Steam line isolation of affected line[2]	≤ d/p corresponding to 0.745 x 10^6 lb/hr at 1005 psig ≥ 540°F
6	High-High Steam Flow in a Steam Line Coincident with Safety Injection	Steam line isolation of affected line[2]	≤ d/p corresponding to 4.4 x 10^6 lb/hr at 735 psig
7	Forebay Level	Trip circ. water pumps	

LA01

See ITS 3.3.2

[1] Initiates containment isolation, feedwater line isolation, shield building ventilation, auxiliary building special vent, and starting of all containment fans. In addition, the signal overrides any bypass on the accumulator valves.
[2] Confirm main steam isolation valves closure within 5 seconds when tested. d/p = differential pressure

A01

TABLE TS 4.1-1

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS

CHANNEL DESCRIPTION	CHECK	CALIBRATE	TEST	REMARKS
24. Turbine First Stage Pressure	Each shift	Each refueling cycle	Monthly	See ITS 3.3.1, 3.3.2, and 3.8.1
25. ~~Deleted~~				See ITS 3.3.1
26. Protective System Logic Channel Testing	Not applicable	Not applicable	Monthly	Includes auto load sequencer
27. ~~Deleted~~				
28. ~~Deleted~~				
29. Seismic Monitoring System	Each refueling cycle	Each refueling cycle	Not applicable	See ITS 3.3.3
30. Fore Bay Water Level	Not applicable	Each refueling cycle SR 3.7.8.4	Each refueling cycle SR 3.7.8.5 M06	
31. AFW Flow Rate	(a)	Each refueling cycle	Not applicable	(a) Flow rate indication will be checked at each unit startup and shutdown
32. PORV Position Indication	Monthly	Each refueling cycle	Not applicable	
a. Back-up (Temperature)	Monthly	Each refueling cycle	Not applicable	
33. PORV Block Valve Position Indicator	Monthly	Each refueling cycle	Not applicable	

See ITS 3.3.3

Add proposed SR 3.7.8.1, SR 3.7.8.2, and 3.7.8.3 M03

Amendment No. 182
04/06/2005

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DISCUSSION OF CHANGES
ITS 3.7.8, SERVICE WATER (SW) SYSTEM

ADMINISTRATIVE CHANGES

A01 In the conversion of the Kewaunee Power Station (KPS) 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. 3.0, "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

M01 The CTS 3.3.e Applicability of the Service Water (SW) System is that the reactor shall not be made critical unless both SW trains are OPERABLE. In the ITS, this is MODES 1 and 2. Also, CTS 3.3.e.2 provides actions when a SW train is inoperable during power operation or recovery from an inadvertent trip. ITS 3.7.8 requires the SW System to be OPERABLE in MODES 1, 2, 3, and 4. Thus, ITS 3.7.7 ACTION A must be entered if a SW train is inoperable in MODE 1, 2, 3, or 4. In addition, when an SW train is inoperable and a unit shutdown is required, CTS 3.3.e.2 requires the unit to reduce RCS T_{avg} to < 350ºF (ITS equivalent MODE 4) within an additional 36 hours (after the time to reach HOT STANDBY and HOT SHUTDOWN). Consistent with the change in Applicability, the requirement to be in MODE 5 within 36 hours is added as indicated in ITS 3.7.8 Required Action B.2. This changes the CTS by requiring the SW System to be OPERABLE in MODES 3 and 4, requiring actions to be taken in MODES 3 and 4, and providing a Required Action to place the unit outside the Applicability.

The SW System is designed to operate under both normal operating conditions and accident conditions. During normal operating conditions, the SW System in conjunction with the Component Cooling (CC) System cools the unit from Residual Heat Removal (RHR) entry conditions to MODE 5. Additionally, the SW System acts as a heat sink for removal of process and operating heat for various safety related and non-safety related components during normal operating conditions. During accident conditions, the SW System, in conjunction with the CC System and a 100% capacity containment cooling system, removes the core decay heat following a design basis loss of coolant accident (LOCA). The addition of the MODES 3 and 4 Applicability is acceptable since the SW System is required to be OPERABLE to support both normal operations and be prepared to perform its primary post accident function of RCS heat removal. The change to the final unit condition (MODE 5 versus < 350ºF) is acceptable since it places the unit outside the Applicability of the LCO and the proposed 36 hours is less than the current time allowed to be < 350ºF (48 hours). This change is more restrictive because a new Applicability containing MODES 3 and 4 has been added and an associated Required Action to exit the Applicability has been added.

M02 CTS 3.3.e.2 allows 72 hours to restore an inoperable SW train to OPERABLE status. ITS 3.7.8 ACTION A has this same requirement; however two Notes have been included. The ITS 3.7.8 Required Action A.1 Note 1 requires entry

DISCUSSION OF CHANGES
ITS 3.7.8, SERVICE WATER (SW) SYSTEM

into the applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources-Operating," for emergency diesel generator made inoperable by SWS. The 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 loop made inoperable by SWS. This changes the CTS by explicitly specifying the applicable Conditions and Required Actions of ITS LCO 3.8.1 and ITS LCO 3.4.6 that must be entered.

The purpose of the Action for CTS 3.3.e.2 is to ensure the inoperable SW 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 an inoperable emergency diesel generator or residual heat removal loop that result from a loss of an SW train. This change is designated as more restrictive because it adds the explicit cascading requirements.

M03 CTS 3.3.e does not provide a Surveillance Requirement to verify each SW 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. The ITS adds a Surveillance Requirement (SR 3.7.8.1) to verify each SW 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 once every 31 days. The SR is also modified by a Note clarifying that isolation of SW flow to individual components does not render the SW System inoperable. CTS 3.3.e does not provide a Surveillance Requirement to verify each SW 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. The ITS adds a Surveillance Requirement (SR 3.7.8.2) to verify each SW 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 once every 18 months. It is modified by a Note that allows the turbine building isolation valve actuation to not be required if the valve is closed and deactivated. This allowance is consistent with CTS 3.3.e.1.A.3. CTS 3.3.e does not provide a Surveillance Requirement to verify each SW pump starts automatically on an actual or simulated actuation signal. The ITS adds a Surveillance Requirement (SR 3.7.8.3) to verify each SW pump starts automatically on an actual or simulated actuation signal once every 18 months. This changes the CTS by adding new Surveillance Requirements for the SW System.

This change is acceptable because the added Surveillance Requirements prove that the SW System is capable of removing decay heat load from the reactor via the Component Cooling (CC) System following a design basis LOCA. This change is designated as more restrictive because new Surveillance Requirements are added.

M04 CTS 3.3.e.2, in part, requires that if one SW train is not restored to OPERABLE status within 72 hours, then, within 1 hour, initiate action to achieve HOT STANDBY within 6 hours and achieve HOT SHUTDOWN within the following 6 hours. ITS 3.7.8 Required Action B.1 requires that the unit be in MODE 3 (equivalent to CTS HOT SHUTDOWN) within 6 hours. This deletes the

DISCUSSION OF CHANGES
ITS 3.7.8, SERVICE WATER (SW) SYSTEM

requirement to be in HOT STANDBY (equivalent to ITS MODE 2) within 7 hours and changes the time required to be in MODE 3 from 13 hours to 6 hours.

The purpose of CTS 3.3.e.2 is to place the unit in a condition in which the LCO does not apply. 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 6 hours to be in MODE 3 in lieu of the current 13 hours ensures a unit shutdown is commenced and completed within a reasonable period of time upon failure to restore the SW System to OPERABLE status within the allowed Completion Time. Additionally, since ITS 3.7.8 Required Action B.1 requires the unit to be in MODE 3 within 6 hours, there is no need to maintain the requirement to be MODE 2 within 7 hours. This change is designated as more restrictive because less time is allowed for the unit to reach MODE 3 than was allowed in the CTS.

M05 CTS 3.3.e.1 states that the SW System is not required to be OPERABLE during LOW POWER PHYSICS TESTS. ITS 3.7.8 does not include this exception; the SW System is required during PHYSICS TESTS. This changes the CTS by requiring the SW System to be OPERABLE during PHYSICS TESTS.

The purpose of CTS 3.3.e is to ensure the SW System is OPERABLE under both normal operating and accident conditions. Since the KPS Physics Tests do not require the SW System to be inoperable to perform the tests, there is no reason to maintain this current allowance. Therefore, this change is acceptable and is more restrictive because the SW System is now required to be OPERABLE under more conditions in the ITS than in the CTS.

M06 CTS Table TS 4.1-1 Channel Description 30 requires a test of the Fore Bay Water Level every refueling outage. This test is performed on the Fore Bay Water Level Trip logic and does not verify that the circulating water pump pump breakers trip; it only ensures a trip signal is sent to the breakers. ITS SR 3.7.8.5 requires verification that each Circulating Water pump breaker trips on an actual or simulated Forebay Water Level – Low Low signal. This changes the CTS by requiring verification that each Circulating Water pump breaker trips on an actual or simulated Forebay Water Level – Low Low signal.

This change is acceptable because the new Surveillance Requirement will prove that the Circulating Water pumps will be tripped on a low water level in the Forebay. This ensures the actual safety function of the Fore Bay Water Level Trip System is met. This change is designated as more restrictive because new requirements are being added that were not required in the CTS.

RELOCATED SPECIFICATIONS

None

DISCUSSION OF CHANGES
ITS 3.7.8, SERVICE WATER (SW) SYSTEM

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.3.e.1.A requires two service water trains be OPERABLE with each train consisting of the following: 1) two service water pumps; 2) an OPERABLE flow path consisting of all valves and piping associated with the above train of components and required to function during accident conditions. This flow path shall be capable of taking a suction form the forebay and supplying water to the redundant safeguards headers; and 3) an OPERABLE turbine building service water header isolation valve and associated isolation logic capable of closing the header isolation valve, or a closed and deactivated turbine building service water header isolation valve. CTS 3.3.e.1.B requires the Forebay Water Level Trip System to be OPERABLE. CTS Table 3.5-1 Functional Unit 7 states the Forebay Level Function trips the circulating water pumps. ITS LCO 3.7.8 requires two SW trains to be OPERABLE. The ITS does not define the components, the associated flow path, or the forebay level trip system that comprise an OPERABLE SW train. This changes the CTS by moving the description of the SW trains 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 still retains the requirement for both SW 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.

LESS RESTRICTIVE CHANGES

None

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

CTS

All changes are 1 unless otherwise noted

System SW~~S~~
3.7.8

3.7 PLANT SYSTEMS

3.7.8 Service Water System (SW~~S~~)

3.3.e.1.A LCO 3.7.8 Two SW~~S~~ trains shall be OPERABLE.

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

ACTIONS

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

CTS

All changes are 1 unless otherwise noted

System

SWS
3.7.8

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
DOC M03	SR 3.7.8.1	-------------------------------NOTE------------------------------ Isolation of SWS flow to individual components does not render the SWS inoperable. System --- System Verify each SWS manual, power operated, and automatic valve in the flow path servicing safety related equipment, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days	
DOC M03	SR 3.7.8.2	INSERT 1 System Verify each SWS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[18] months	3 5
DOC M03	SR 3.7.8.3	System Verify each SWS pump starts automatically on an actual or simulated actuation signal.	[18] months	3

INSERT 2 4

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CTS

3.7.8

5

INSERT 1

DOC M03

---NOTE---
The turbine building header isolation valve actuation is not required provided the valve is closed and de-activated.

4

INSERT 2

Table TS 4.1-1 Channel Description 30	SR 3.7.8.4	Perform CHANNEL CALIBRATION	18 months
Table TS 4.1-1 Channel Description 30	SR 3.7.8.5	Verify each Circulating Water pump breaker trips on an actual or simulated Forebay Water Level – Low Low signal.	18 months

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.8, SERVICE WATER (SW) SYSTEM

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

2. Note 1 of Required Action A.1 is missing the word "Conditions". The correct titles of the ACTIONS Table Headers are "CONDITION" and "REQUIRED ACTION". The word "Conditions" is inserted in the Note at the applicable place. This change is considered a typographical error of the ISTS.

3. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

4. A new Surveillance Requirement (SR 3.7.8.4) has been added to perform a CHANNEL CALIBRATION in the Forebay Water Level instrumentation. The new Surveillance serves as a means to prove that the Forebay Water Level instrumentation is OPERABLE, consistent with the current licensing requirements. Additionally, a new Surveillance Requirement (SR 3.7.8.5) has been added to ensure the Circulating Water pump breakers trip on an actual or simulated Forebay Water Level Low-Low signal. The new SR serves as a means to prove the operability of the Forebay Water Level Trip System, consistent with the current licensing requirements.

5. ISTS SR 3.7.8.2 has been modified by a Note that allows the turbine building header isolation valve actuation to not be required provided the valve is closed and deactivated. This is consistent with the CTS 3.3.e.1.A.3 allowance and is acceptable since with the valve in the closed position, it is in its accident condition.

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

All changes are 1 unless otherwise noted

B 3.7 PLANT SYSTEMS

B 3.7.8 Service Water System (SWS)

BASES

BACKGROUND

System

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

INSERT 1

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

Additional information about the design and operation of the SWS, along with a list of the components served, is presented in the FSAR, U Section 9.6.2 ~~[9.2.1]~~ (Ref. 1). The principal safety ~~related~~ function of the SWS is the removal of decay heat from the reactor via the CCW System. 2 4

APPLICABLE SAFETY ANALYSES

System

The design basis of the SWS is for one SWS train, in conjunction with the CCW System and a 100% capacity containment cooling system, to remove core decay heat following a design basis LOCA as discussed in U the FSAR, Section 6.3.2 ~~[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 System pumps. The SWS is designed to perform its function with a single failure of any active component, assuming the loss of offsite power. 2

System

The SWS, in conjunction with the CCW System, also cools the unit from residual heat removal (RHR), as discussed in the U FSAR, Section ~~[5.4.7]~~ 9.3.1.2, (Ref. 3) entry conditions to MODE 5 during normal and post accident operations. The time required for this evolution is a function of the 2

1 **INSERT 1**

The Service Water (SW) System consists of four SW pumps, four traveling screens, four rotating SW strainers, and interconnecting piping, including the Circulating Water (CW) System Screenhouse Forebay. The CW Screenhouse Forebay is the suction source for the SW pumps and the Forebay Water Level Trip System assures adequate water level in the Forebay for SW pump operation by tripping the CW pumps on low water level. The SW pumps are powered from the 4160V Electrical Supply System and the SW strainers and traveling water screens are powered from the 480V Electrical Distribution System. All of the components with the exception of Traveling Water Screens 1A2 and 1B1 are powered from emergency buses. Traveling Water Screens 1A2 and 1B1 are powered from non-emergency buses. The SW System is in operation at all times during plant operation and shutdown and, therefore, is in a high state of readiness for any abnormal or emergency plant condition. The SW System is designed with two redundant trains, which are cross tied during normal operations. Each SW train is served by two service water pumps which provide flow to a header, and each train is capable of all post-accident heat removal requirements at the highest anticipated lake temperature. In the event of an accident (Large Break Loss of Cooling Accident (LBLOCA) or Main Steam Line Break (MSLB)) resulting in Safety Injection (SI) initiation, the two redundant headers are separated by automatically closing the SW header isolation valves. During the accident condition, the containment temperature and pressure increase will be sensed by the Engineered Safety Features (ESF) System, which generates a SI signal and starts the SW pumps and SW System valves receive signals to move to their accident positions. The SW System also supplies cooling water to the two Component Cooling (CC) heat exchangers, which are utilized to remove core residual heat through the Residual Heat Removal (RHR) System. The RHR System is employed during normal shutdown operations and also is placed in service following a LOCA for cooling of the recirculated flow from the reactor containment sump. The SW System also includes a single turbine building header, capable of being supplied by either one of the two SW trains via interlocked turbine building header supply isolation valves. The turbine building header provides cooling to non-safety equipment in the turbine building. Because the SW System is designed with sufficient capacity to provide for all cooling loads with two pumps operating, the turbine building header is not automatically isolated (via a SI signal) during an accident unless low SW header pressure concurrently exists.

All changes are 1 unless otherwise noted

BASES

APPLICABLE SAFETY ANALYSES (continued)

number of CC~~W~~ and RHR System trains that are operating. One SW~~S~~ train is sufficient to remove decay heat during subsequent operations in MODES 5 and 6. This assumes a maximum SW~~S~~ temperature of ~~[95]~~ 80°F occurring simultaneously with maximum heat loads on the system. 2

The SW~~S~~ System satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

Two SW~~S~~ 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.

A~~n~~ SW~~S~~ train is considered OPERABLE during MODES 1, 2, 3, and 4 when:

a. ~~The~~ Two pump s ~~is~~ are OPERABLE ; and

b. The associated piping, valves, ~~heat exchanger,~~ and instrumentation and controls required to perform the safety ~~related~~ function are OPERABLE , except as allowed by the Note to SR 3.7.8.2. 4

In addition, the Forebay Water Level Trip System must be OPERABLE for the SW System to be considered OPERABLE.

APPLICABILITY

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

In MODES 5 and 6, the OPERABILITY requirements of the SW~~S~~ System are determined by the systems it supports.

ACTIONS

A.1

If one SW~~S~~ train is inoperable, action must be taken to restore OPERABLE status within 72 hours. In this Condition, the remaining OPERABLE SW~~S~~ train is adequate to perform the heat removal function. However, the overall reliability is reduced because a single failure in the OPERABLE SW~~S~~ train could result in loss of SW~~S~~ System function. Required Action A.1 is modified by two Notes. The first Note indicates that the applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources - Operating," should be entered if an inoperable SW~~S~~ train results in an inoperable emergency diesel generator. The second Note indicates that the applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops - MODE 4," should be entered if an inoperable SW~~S~~ train results in an inoperable decay heat removal train. This is an exception to

All changes are 1 unless otherwise noted

BASES

ACTIONS (continued)

LCO 3.0.6 and ensures the proper actions are taken for these components. The 72 hour Completion Time is based on the redundant capabilities afforded by the OPERABLE train, and the low probability of a DBA occurring during this time period.

B.1 and B.2

If the SW~~S~~ train cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours and in MODE 5 within 36 hours.

The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.8.1

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

Verifying the correct alignment for manual, power operated, and automatic valves in the SW~~S~~ System flow path provides assurance that the proper flow paths exist for SW~~S~~ System 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.

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

All changes are 1 unless otherwise noted

BASES

SURVEILLANCE REQUIREMENTS (continued)

, including SW header isolation on a SI signal and turbine building header isolation on a SI signal concurrent with a low SW header pressure signal,

SR 3.7.8.2

System

INSERT 2

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 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] month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint. 2 2

SR 3.7.8.3

System

This SR verifies proper automatic operation of the SWS pumps on an actual or simulated actuation signal. The SWS is a normally operating system that cannot be fully actuated as part of normal testing during normal operation. The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a unit outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint. 2 2 3

INSERT 3

REFERENCES

U

1. FSAR, Section ~~[9.2.1]~~. 9.6.2
2. FSAR, Section ~~[6.2]~~. 6.3.2
3. FSAR, Section ~~[5.4.7]~~. 9.3.1.2

2

1 **INSERT 2**

As noted, the turbine building header isolation valve actuation is not required provided the valve is closed and deactivated. This is acceptable since the closed position is the accident position for the valve and deactivating the valve ensures it will not inadvertently open.

5 **INSERT 3**

SR 3.7.8.4

A CHANNEL CALIBRATION is performed every 18 months, or approximately at every refueling. CHANNEL CALIBRATION is a complete check of the instrument loop, including the sensor. The test verifies that the channel responds to measured parameter with the necessary range and accuracy. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a unit outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.

SR 3.7.8.5

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

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.8 BASES, SERVICE WATER (SW) 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 ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

3. A new Surveillance Requirement (SR 3.7.8.4) has been added to ensure the Circulating Water System pumps trip on an actual or simulated Forebay Water Level Low-Low signal. The CTS requires the Forebay Water Level Trip System be OPERABLE however there is no Surveillance Requirement to prove operability. The new SR serves as a means to prove the operability of the Forebay Water Level Trip System.

4. The term "safety related function" has been change to "safety function" to be consistent with terminology in the definition of OPERABLE – OPERABILITY.

5. Changes made to reflect changes made to the Specifications.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.8, SERVICE WATER (SW) SYSTEM

There are no specific NSHC discussions for this Specification.

ATTACHMENT 9

ITS 3.7.9, ULTIMATE HEAT SINK (UHS)

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

Add proposed ITS 3.7.9

M01

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DISCUSSION OF CHANGES
ITS 3.7.9, ULTIMATE HEAT SINK (UHS)

ADMINISTRATIVE CHANGES

None

MORE RESTRICTIVE CHANGES

M01 The CTS does not have any requirements 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 ITS also provides ACTIONS when the UHS is inoperable (ACTIONS A and B) and Surveillance Requirements (SR 3.7.9.1 and SR 3.7.9.2) to verify the UHS is OPERABLE (i.e., water level and temperature within limits).

The safety function of the UHS is to provide a heat sink for process and operating heat from safety related components during a design basis accident or transient, as well as during normal operation and shutdown of the unit. This change is acceptable because the safety analyses assume the UHS is OPERABLE with a maximum water temperature. This change is designated as more restrictive because it adds new requirements to the CTS.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

None

LESS RESTRICTIVE CHANGES

None

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

CTS

All changes are 1 unless otherwise noted

UHS
3.7.9

3.7 PLANT SYSTEMS

3.7.9 Ultimate Heat Sink (UHS)

DOC M01 LCO 3.7.9 The UHS shall be OPERABLE.

DOC M01 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]~~ 2
~~-----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]~~ 3
A ~~C~~. ~~[Required Action and associated Completion Time of Condition A or B not met. OR]~~ DOC M01 UHS inoperable ~~[for reasons other than Condition A or B]~~.	A ~~C~~.1 Be in MODE 3. AND A ~~C~~.2 Be in MODE 5.	6 hours 36 hours 3

CTS

All changes are 1 unless otherwise noted

UHS
3.7.9

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
DOC M01 SR 3.7.9.1	~~[~~ Verify Circulating Water Forebay water level of UHS is ≥ ~~[562]~~ 565 ft 3 inches ~~[~~mean sea level~~]~~.	~~[~~24~~]~~ hours ~~]~~
DOC M01 SR 3.7.9.2	~~[~~ Verify average water temperature of UHS is ≤ ~~[90]~~ 80 °F.	24 hours ~~]~~
~~SR 3.7.9.3~~	~~[Operate each cooling tower fan for ≥ [15] minutes.~~	~~31 days]~~ 2
~~SR 3.7.9.4~~	~~[Verify each cooling tower fan starts automatically on an actual or simulated actuation signal.~~	~~[18] months]~~ 2

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JUSTIFICATION FOR DEVIATIONS
ITS 3.7.9, ULTIMATE HEAT SINK (UHS)

1. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

2. The Ultimate Heat Sink (UHS) consists of Lake Michigan. KPS does not utilize cooling towers and Actions and Surveillances regarding cooling towers are deleted.

3. The Reviewer's Note has been deleted. This information is for the NRC reviewer to be keyed in to what is needed to meet this requirement. This is not meant to be retained in the final version of the plant specific submittal. In addition, the KPS Ultimate Heat Sink (UHS) analysis does not provide for averaging the UHS (intake temperature) over a 24 hour period. The analysis assumes the initial intake temperature is ≤ 80°F. Therefore the ACTION to verify UHS temperature averaged over 24 hours is not included in the KPS ITS. Subsequent ACTIONS have been renumbered due to this deletion, and the first Condition of ISTS 3.7.9 Condition C has been deleted and the second condition of ISTS 3.7.9 Condition C has been modified.

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

All changes are 1 unless otherwise noted

B 3.7 PLANT SYSTEMS

B 3.7.9 Ultimate Heat Sink (UHS)

BASES

BACKGROUND

The UHS provides a heat sink for ~~processing~~ and operating heat from safety related components during a transient or accident, as well as during normal operation. This is done by utilizing the Service Water System ~~(SWS)~~ and the Component Cooling Water ~~(CCW)~~ System. 2

(SW) , (CC) Circulating Water (CW) System,

INSERT 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.~~ The two principal functions of the UHS are the dissipation of residual heat after reactor shutdown, and dissipation of residual heat after ~~an~~ accident. 3

transient or

~~A variety of complexes is used to meet the requirements for a UHS. A lake or an ocean may qualify as a single source. If the complex includes a water source contained by a structure, it is likely that a second source will be required.~~

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.~~

Additional information on the design and operation of the system, along with a list of components served, can be found in Reference 1.

s , 2, and 3

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1

INSERT 1

The UHS is Lake Michigan. Water is drawn from a submerged cluster of three vertical inlets located approximately 1600 feet from shore. The inlets join into one pipe, which carries the water to the screen house. The screen house contains the circulating water pumps and valves, traveling water screens, SW pumps, fire 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 SW pumps under all foreseeable conditions.

All changes are 1 unless otherwise noted

UHS
B 3.7.9

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 units that use~~ With UHS as the normal heat sink for condenser cooling via the Circulating Water System, unit operation at full power is its maximum heat load. Its maximum post accident heat load occurs ~~20 minutes~~ < 1 hour 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.

The operating limits are based on s conservative heat transfer analyses for the worst case LOCA. Reference 1 , 2, and 3 provides 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 with Regulatory Guide 1.27 (Ref. 2), which requires a 30 day supply of cooling water in the UHS.~~

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 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 SW~~S~~ System. To meet this condition, the UHS temperature should not exceed ~~[90~~ 80 °F~~]~~ 4 and the CW forebay level should not fall below ~~[562~~ 3 inches ft 5 ~~mean sea level]~~ 4 during normal unit operation.

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.~~ 5

BASES

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.] 5

[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.

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.] 5

A

[C.1 and C.2 5

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 [or 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 at least MODE 3 within 6 hours and in MODE 5 within 36 hours. 5

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 4

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 1 on operating experience related to trending of the parameter variations during the applicable MODES. This SR verifies that the UHS water level 4 is ≥ [562] ft [mean sea level].]

5 3 inches

[SR 3.7.9.2 4

System

This SR verifies that the SWS is available to cool the CCW System to at 1 least its maximum design temperature with the maximum accident or normal design heat loads for 30 days following a Design Basis Accident. The 24 hour Frequency is based on operating experience related to trending of the parameter variations during the applicable MODES. This SR verifies that the average water temperature of the UHS is ≤ [90°F].] 4

80

[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. 5 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.]

[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 5 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. FSAR, Section [9.2.5]. 4

U 6.3

2. Regulatory Guide 1.27.

2. USAR, Section 9.6. 1

3. USAR, Section 14.3. 1

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. Typographical error corrected.

3. Changes are made for consistency within the Bases.

4. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

5. Changes are made to reflect those changes made to the Specification. Subsequent requirements are renumbered or revised, where applicable, to reflect the changes.

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.9, ULTIMATE HEAT SINK (UHS)

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 10

ITS 3.7.10, CONTROL ROOM POST ACCIDENT RECIRCULATION (CRPAR) SYSTEM

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

A01

ITS

ITS 3.7.10

3.12 CONTROL ROOM POST-ACCIDENT RECIRCULATION SYSTEM

APPLICABILITY

~~Applies to the OPERABILITY of the Control Room Post-Accident Recirculation System.~~

OBJECTIVE

~~To specify OPERABILITY requirements for the Control Room Post-Accident Recirculation System.~~

SPECIFICATION

Applicability

LCO 3.7.10

a. The reactor shall not be made critical unless both trains of the Control Room Post-Accident Recirculation System are OPERABLE.

M01

M02 Add proposed second Applicability

L01 Add proposed LCO Note

LCO 3.7.10

ACTION C

ACTION A

b. Both trains of the Control Room Post-Accident Recirculation System, including filters, shall be OPERABLE or the reactor shall be shut down within 12 hours, except that when one of the two trains of the Control Room Post-Accident Recirculation System is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding 7 days.

LA01

M01

reasons other than Condition B

L01 Add proposed ACTIONS B and F

c. During testing the system shall meet the following performance requirements:

1. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filter and charcoal adsorber banks shall show $\geq$ 99% DOP removal and $\geq$ 99% halogenated hydrocarbon removal.

2. The results of the laboratory carbon sample analysis from the Control Room Post-Accident Recirculation System carbon shall show $\geq$ 95% radioactive methyl iodide removal when tested in accordance with ASTM D3803-89 at conditions of 30°C, and 95% RH.

3. Fans shall operate within ±10% of design flow when tested.

See ITS 5.5.9

Add proposed ACTIONS D and E

M02

A01

ITS ITS 3.7.10

4.17 CONTROL ROOM POSTACCIDENT RECIRCULATION SYSTEM

APPLICABILITY

~~Applies to testing and surveillance requirements for the Control Room Postaccident Recirculation System in TS 3.12.~~

OBJECTIVE

~~To verify the performance capability of the Control Room Postaccident Recirculation System.~~

SPECIFICATION

A02

a. At least ~~once per operating cycle or~~ once every 18 months, ~~whichever occurs first~~, the following conditions shall be demonstrated:

1. Pressure drop across the combined HEPA filters and charcoal adsorber banks is < 6 inches of water and the pressure drop across any HEPA bank is < 4 inches of water at the system design flow rate (± 10%). See ITS 5.5.9

Add proposed SR 3.7.10.2 A03

SR 3.7.10.3 2. Automatic initiation of the system on actual or simulated ~~a high radiation signal and a safety injection~~ actuation signal. LA02 LA02

b. 1. The in-place DOP test for HEPA filters shall be performed (1) at least once per 18 months and (2) after each complete or partial replacement of a HEPA filter bank or after any maintenance on the system that could affect the HEPA bank bypass leakage. L02

2. The laboratory tests for activated carbon in the charcoal filters shall be performed (1) at least once per 18 months for filters in a standby status or after 720 hours of filter operation, and (2) following painting, fire, or chemical release in any ventilation zone communicating with the system. See ITS 5.5.9

3. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of a charcoal adsorber bank or after any maintenance on the system that could affect the charcoal adsorber bank bypass leakage.

SR 3.7.10.1 4. Each train shall be operated at least ~~10 hours~~ 15 minutes each month. L03

DISCUSSION OF CHANGES
ITS 3.7.10, CONTROL ROOM POST ACCIDENT RECIRCULATION (CRPAR) SYSTEM

ADMINISTRATIVE CHANGES

A01 In the conversion of the Kewaunee Power Station (KPS) 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. 3.0, "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.

A02 CTS 4.17.a states, in part, that the control room post-accident recirculation tests shall be performed once per operating cycle or once per 18 months, whichever occurs first. ITS SR 3.7.10.3 requires verification that each CRPAR train actuates on an actual or simulated actuation signal every 18 months. This changes the CTS by deleting the "once per operating cycle" terminology. The change discussion regarding the use of an actual or simulated test signal is located in DOC L02.

This change is acceptable since the terms "operating cycle" and "18 months" are synonymous. The Surveillance Frequency remains essentially unchanged since the KPS refueling outage occurs every 18 months. The technical requirements of both the CTS and ITS remain unchanged in that a test is required to ensure that the system will perform its intended function. This change is designated as administrative because it does not result in technical changes to the CTS.

A03 CTS 4.17.a.1, 4.17.b.1, 4.17.b.2, and 4.17.b.3 provide filter testing requirements for the CRPAR System. ITS SR 3.7.10.2 requires performing required CRPAR System filter testing in accordance with the Ventilation Filter Testing Program (VFTP). CTS 4.17 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 3.7.10.2 references the VFTP for performing these tests. This change is designated administrative because it does not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

M01 The CTS 3.12.a Applicability of the Control Room Post-Accident Recirculation (CRPAR) System is that the reactor shall not be made critical unless both trains of the CRPAR System are OPERABLE. When one inoperable train is not restored in 7 days, CTS 3.12.b requires the reactor to be shutdown (i.e., non-critical) in 12 hours. ITS 3.7.10, in part, requires the CRPAR System to be OPERABLE in MODES 1, 2, 3, and 4. Consistent with this change in Applicability, Required Action C.2 requires the unit to be in MODE 5 within 36 hours. Furthermore, Required Action C.1 only provides 6 hours to be in MODE

DISCUSSION OF CHANGES
ITS 3.7.10, CONTROL ROOM POST ACCIDENT RECIRCULATION (CRPAR) SYSTEM

3. This changes the CTS by requiring the CRPAR System to be OPERABLE in MODES 3 and 4, decreases the time to reach subcritical conditions (i.e., MODE 3) from 12 hours to 6 hours, and provides a Required Action (Required Action C.2) to place the unit outside the Applicability. The addition of the second Applicability (during movement of irradiated fuel assemblies) is discussed in DOC M02.

The purpose of CTS 3.12.a is to ensure that the CRPAR System is OPERABLE to provide a protected environment from which operators can control the unit following an uncontrolled release of radioactivity. During accident conditions, the CRPAR System isolates the normal outside air intake supply to the control room and both CRPAR fans are started and the flow path through the emergency filtration system is opened. The addition of MODES 3 and 4 is acceptable since a DBA could occur that could cause a release of radioactive material to the environment. Furthermore, the time to reach MODE 3 has been reduced and a new Required Action has been added to place the unit in a MODE outside the new Applicability. This change is acceptable because the Completion Times 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 allowed Completion Time. Allowing 6 hours to be in MODE 3 and 36 hours to be in MODE 5 ensures a unit shutdown is commenced and completed within a reasonable period of time upon failure to restore the CRPAR System to OPERABLE within the allowed Completion Time. This change is more restrictive because a new Applicability containing MODE 3 and 4 and associated Required Actions to exit the new Applicability has been added and the time to reach MODE 3 has been reduced.

M02 The CTS does not contain any requirements for the CRPAR System in MODES 5 and 6 and during movement of irradiated fuel assemblies. ITS 3.7.10 Applicability includes "MODES 5 and 6 and during movement of irradiated fuel assemblies." ITS 3.7.10 ACTIONS D and E provide compensatory measures when CRPAR train(s) are inoperable in MODES 5 and 6 and during movement of irradiated fuel assemblies. This changes the CTS by adding additional Applicability criteria and associated ACTIONS.

The purpose of ITS 3.7.10 is to provide assurance that the CRPAR System is OPERABLE when required to perform its function. The CRPAR System is required to be OPERABLE in MODES 5 and 6 in order to support the assumptions of a Gas Decay Tank Rupture. It is also required to be OPERABLE during movement of irradiated fuel assemblies in order to support the assumptions of the fuel handling accident. This change is acceptable because it provides additional assurance that the CRPAR System is available to perform its function when required. This change is designated as more restrictive because a new Applicability and associated ACTIONS have been added.

DISCUSSION OF CHANGES
ITS 3.7.10, CONTROL ROOM POST ACCIDENT RECIRCULATION (CRPAR) SYSTEM

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.12.b states, in part, that both trains of the Control Room Post-Accident Recirculation (CRPAR) System, "including filters," shall be OPERABLE. ITS 3.7.10 states that two CPRAR trains shall be OPERABLE. This changes the CTS by moving the requirement for the filters to the Bases.

The removal of these details, which are related to system operation, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement for the CRPAR System to be OPERABLE and the relocated material describes an aspect of OPERABILITY. 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.

LA02 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 4.17.a.2 requires automatic initiation of the CRPAR System via a "high radiation" signal and a "safety injection" signal. ITS SR 3.7.10.3 requires a verification that each CRPAR train actuates on an actuation signal. This changes the CTS by moving the specific type of actuation signal to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement to verify each CRPAR train actuates 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.

LESS RESTRICTIVE CHANGES

L01 *(Category 4 – Relaxation of Required Action)* CTS 3.12.b requires both trains of the Control Room Post-Accident Recirculation (CRPAR) System to be OPERABLE. Included as part of the OPERABILITY of the CRPAR trains is the

DISCUSSION OF CHANGES
ITS 3.7.10, CONTROL ROOM POST ACCIDENT RECIRCULATION (CRPAR) SYSTEM

control room boundary. CTS 3.12.b provides the actions for when one CRPAR train is inoperable, however no actions are provided when both trains are inoperable, such as when the control room boundary is inoperable. In this situation, a reactor shutdown is required. In addition, CTS 3.12 does not address the control room boundary being opened intermittently (such as for routine entry and exit) under administrative controls. ITS LCO 3.7.10 also requires two CRPAR trains to be OPERABLE, however a Note to the LCO is included that allows the control room boundary to be opened intermittently under administrative controls. ITS 3.7.10 ACTION B provides actions for when the control room boundary is inoperable in MODE 1, 2, 3, or 4. The action allows up to 24 hours to restore the control room boundary before requiring a unit shutdown. Furthermore, due to the addition of ITS 3.7.10 ACTION B, an action has been added (ITS 3.7.10 ACTION F) to cover the instances where both CRPAR trains are inoperable in MODE 1, 2, 3, or 4 for reasons other than an inoperable control room boundary. The proposed ACTION will require a unit shutdown per LCO 3.0.3. This changes the CTS by specifying the allowance for intermittently opening the control room boundary under administrative controls and not consider the CRPAR System to be inoperable and provides time to restore an inoperable control room boundary prior to requiring a unit shutdown.

The purpose of CTS 3.12.b is to ensure the CRPAR System remains OPERABLE to support the safety analyses. This change is acceptable because the LCO requirements continue to ensure that the structures, systems, and components are maintained consistent with the safety analyses. Furthermore, 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 LCO is modified by a Note allowing the control room boundary to be opened intermittently under administrative controls. The control room boundary is often opened intermittently to allow entry and exit and also periodically opened to perform maintenance. 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. These administrative controls are identified in the ITS Bases. In addition, the proposed ACTION B will only allow a short time (24 hours) to restore the control room boundary. During this period, as identified in the ITS Bases, 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. Furthermore, KPS commits to having written procedures available describing the compensatory measures when ACTION B is entered (either intentionally or unintentionally). This change

DISCUSSION OF CHANGES
ITS 3.7.10, CONTROL ROOM POST ACCIDENT RECIRCULATION (CRPAR) SYSTEM

is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L02 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* CTS 4.17.a.2 requires verification of the automatic initiation of the CRPAR System upon receipt of the specified inputs (i.e., a high radiation signal and a safety injection signal) but does not specify the source of the input signal. ITS SR 3.7.10.3 requires a verification that each CRPAR train actuates on an "actual" or "simulated" actuation signal. This changes the CTS by explicitly specifying that the actuation signal may be either actual or simulated.

The purpose of CTS 4.17.a.2 is to ensure that each CRPAR train operates 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" or "simulated" signal and, therefore, the results of 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.

L03 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* CTS 4.17.b.4 requires each CRPAR train to be operated at least 10 hours each month. ITS SR 3.7.10.1 requires each CRPAR train to be operated ≥ 15 minutes every 31 days. This changes the CTS by reducing the time required to operate each CRPAR train.

The purpose of CTS 4.17.b.4 is to periodically verify that each standby filter train (including the fan) can operate properly. The reason for operating the filter train for 10 hours, as stated in the NUREG-1431 Bases for the Surveillance, is to ensure the installed filter train heaters dry out any moisture accumulated in the charcoal from humidity in the ambient air. Furthermore, the NUREG-1431 SR itself states that the 10 hour run is for systems that have heaters and a 15 minute run is for systems without heaters. The KPS design does not require heaters in the CRPAR filter trains to operate. Therefore, this change is acceptable because the 15 minute run will demonstrate the trains are operating properly. 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

All changes are 1 unless otherwise noted

PAR System CR~~EF~~S
3.7.10

3.7 PLANT SYSTEMS

Post Accident Recirculation PAR

3.7.10 Control Room ~~Emergency Filtration~~ System (CR~~EF~~S)

3.12.a, 3.12.b LCO 3.7.10 PAR Two CR~~EF~~S trains shall be OPERABLE.

DOC L01 --NOTE--
The control room boundary may be opened intermittently under administrative control.

3.12.a, DOC M02 APPLICABILITY: MODES 1, 2, 3, 4, ~~[~~5, and 6~~]~~,
During movement of ~~[recently]~~ irradiated fuel assemblies. 2

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
3.12.b	A. PAR One CR~~EF~~S train inoperable.	A.1 PAR Restore CR~~EF~~S train to OPERABLE status.	7 days
DOC L02	B. PAR Two CR~~EF~~S 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
3.12.b	C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, 3, or 4.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours

CTS

All changes are 1 unless otherwise noted

PAR System CREFS
3.7.10

ACTIONS (continued)

	CONDITION	REQUIRED ACTION		COMPLETION TIME	
DOC M02	D. Required Action and associated Completion Time of Condition A not met [in MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies.	D.1	--------------NOTE-------------- [Place in toxic gas protection mode if automatic transfer to toxic gas protection mode is inoperable.] ------------------------------------ PAR Place OPERABLE CREFS train in emergency mode.	Immediately	2
		OR			
		D.2	Suspend movement of [recently] irradiated fuel assemblies.	Immediately	2
DOC M02	E. PAR Two CREFS trains inoperable [in MODE 5 or 6, or] during movement of [recently] irradiate fuel assemblies. d	E.1	Suspend movement of [recently] irradiated fuel assemblies.	Immediately	2 5
DOC L01	F. PAR Two CREFS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.	F.1	Enter LCO 3.0.3.	Immediately	

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
4.17.b.4	SR 3.7.10.1	PAR Operate each CREFS train for [≥ 10 continuous hours with the heaters operating or (for systems without heaters) ≥ 15 minutes].	31 days	4

CTS

All changes are 1 unless otherwise noted

PAR System

CREFS
3.7.10

SURVEILLANCE REQUIREMENTS (continued)

		SURVEILLANCE	FREQUENCY	
DOC A03	SR 3.7.10.2	Perform required CREFS filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)].	In accordance with [VFTP]	2
4.17.a.2	SR 3.7.10.3	Verify each CREFS train actuates on an actual or simulated actuation signal.	[18] months	2
	SR 3.7.10.4	~~Verify one CREFS train can maintain a positive pressure of ≥ [0.125] inches water gauge, relative to the adjacent [turbine building] during the pressurization mode of operation at a makeup flow rate of ≤ [3000] cfm.~~	~~[18] months on a STAGGERED TEST BASIS~~	3

PAR

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JUSTIFICATION FOR DEVIATIONS
ITS 3.7.10, CONTROL ROOM POST ACCIDENT RECIRCULATION (CRPAR) 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 ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

3. ISTS SR 3.7.10.4 requires verification of one Control Room Post-Accident Recirculation (CRPAR) train maintaining a positive pressure, relative the area adjacent to the Control Room, during the pressurization mode of operation of the CRPAR. The intention of this SR is to verify the integrity of the control room enclosure and the assumed inleakage rates of the potentially contaminated air and to verify proper functioning of the CRPAR. The Kewaunee Power Station (KPS) current Technical Specifications does not require a test of the positive pressure of the Control Room. Per Revision 0 of Calculation C11286, "Updated Control Room Habitability Evaluation Report," the pressurization system acceptance criteria portion of the specific criteria necessary to meet the relevant requirements of General Design Criteria 4, 5, and 19 to assure that the control room habitability portions of item III.D.3.4, Control Room Habitability Requirements, of NUREG-0737 is not applicable since the ventilation system does not employ a pressurization concept. The KPS Control Room Air Conditioning System is designed to produce a neutral-pressure control room envelope in the emergency recirculation mode of operation. The neutral-pressure control room envelope does not intentionally pressurize the control room envelope, but limits in-leakage of contaminants by isolating controlled flow paths into the control room envelope. (The term "neutral-pressure" means only that the control room envelope is not intentionally pressurized. The actual pressure of the control room envelope may be positive, neutral, or negative relative to adjacent areas.) Therefore, ISTS SR 3.7.4.10 will not be adopted as part of the conversion from CTS to ITS.

4. The KPS design basis does not require heaters in the CRPAR trains to operate. Therefore, the 15 minute run time has been adopted.

5. Typographical error corrected.

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

All changes are 1 unless otherwise noted

B 3.7 PLANT SYSTEMS

B 3.7.10 Control Room Post Accident Recirculation ~~Emergency Filtration~~ ~~System~~ (CR~~EFS~~ PAR System)

BASES

BACKGROUND

The CR~~EFS~~ PAR System provides a protected environment from which operators can control the unit following an uncontrolled release of radioactivity~~[~~, chemicals, or toxic gas~~]~~. 2

The CR~~EFS~~ PAR System consists of two independent, redundant trains that recirculate and filter the control room and outside air. Each train consists of a prefilter ~~or~~ ~~demister~~, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), and a fan. Common ~~D~~ductwork, valves or dampers, and instrumentation also form part of the system~~, as well as demisters to remove water droplets from the air stream~~. ~~A second bank of HEPA filters follows the adsorber section to collect carbon fines and provide backup in case of failure of the main HEPA filter bank.~~

The CR~~EFS~~ PAR System is an emergency system, ~~parts of~~ which is normally ~~may also operate~~ ~~during normal unit operations~~ in the standby mode of operation. INSERT 1 Upon receipt of the actuating signal(s), normal outside air intake supply to the control room is ~~isolated~~ INSERT 2, ~~and the stream of ventilation air is recirculated 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. ~~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.~~

~~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.~~

1

INSERT 1

The CRPAR System is part of the Control Room Air Conditioning (CRAC) System. During normal unit operation, the CRAC System provides cooling of recirculated and fresh air to ventilate the control room.

1

INSERT 2

both CRPAR fans are started, the flow path through the Emergency Filtration System is opened, and a portion of the return air volume is filtered to remove airborne contaminants and airborne radioactivity, then mixed with the recirculated return air.

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All changes are 1 unless otherwise noted

PAR System CR~~EFS~~
B 3.7.10

BASES

BACKGROUND (continued)

The neutral pressure envelope design

~~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.~~ ~~Pressurization~~ of the control room minimizes ~~prevents~~ infiltration of unfiltered air from the surrounding areas of the building. INSERT 3 ~~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.~~

~~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.~~

~~A single train will pressurize the control room to about [0.125] inches water gauge.~~ The CR~~EFS~~ System operation in maintaining the control room habitable is discussed in the PAR U ~~F~~SAR, Section ~~[6.4]~~ 9.6.4 (Ref. 1). 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 Alternate Cooling System provide double/redundant isolation capability ~~are arranged in series pairs~~ so that the failure of one damper to shut will not result in a breach of control room ventilation isolation. The CR~~EFS~~ PAR System is designed in accordance with Seismic Category I requirements.

The CR~~EFS~~ PAR 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).

APPLICABLE SAFETY ANALYSES

The CR~~EFS~~ PAR 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 CR~~EFS~~ PAR 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 ~~F~~SAR, Chapter ~~[15]~~ 14 (Ref. 2). 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.~~

The CRPAR System also provides protection for the control room operators in the remote possibility of a fire in the control room, as described in Reference 1.

1 **INSERT 3**

The CRPAR System fans are started upon receipt of a safety injection signal or high radiation signal as detected by the radiation monitor R-23 mounted in the main control room emergency zone (CREZ) supply duct.

All changes are 1 unless otherwise noted

BASES

APPLICABLE SAFETY ANALYSES (continued)

PAR System

The worst case single active failure of a component of the CR~~EF~~S, assuming a loss of offsite power, does not impair the ability of the system to perform its design function.

PAR System

The CR~~EF~~S satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

PAR

Two independent and redundant CR~~EF~~S trains are required to be active OPERABLE to ensure that at least one is available assuming a single 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.

PAR System

The CR~~EF~~S is considered OPERABLE when the individual components necessary to limit operator exposure are OPERABLE in both trains. A CR~~EF~~S train is OPERABLE when the associated:

PAR

a. Fan is OPERABLE~~,~~ ; 3

b. HEPA filters and charcoal adsorbers are not excessively restricting flow, and are capable of performing their filtration functions~~,~~ ; and 3

c. ~~Heater, demister,~~ ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

the CRAC fan in the same train must be OPERABLE when the CRPAR train is required. Furthermore,

In addition, the control room boundary must be maintained, including the integrity of the walls, floors, ceilings, ductwork, and access doors. 3

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.

APPLICABILITY

In MODES 1, 2, 3, 4, ~~[~~5, and 6,~~]~~ and during movement of ~~[recently]~~ 2 irradiated fuel assemblies, the PAR CR~~EF~~S System must be OPERABLE to control operator exposure during and following a DBA.

All changes are 1 unless otherwise noted

BASES

APPLICABILITY (continued)

In ~~[~~MODE 5 or 6~~]~~, the ~~CREFS~~ PAR System is required to cope with the release from the rupture of an ~~outside~~ inside waste gas tank.

During movement of ~~[recently]~~ irradiated fuel assemblies, the ~~CREFS~~ PAR System must be OPERABLE to cope with the release from a fuel handling accident ~~[~~involving handling ~~recently~~ irradiated fuel~~]~~. ~~[The CREFS 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 [X] days), due to radioactive decay.]~~ 2 2

ACTIONS

A.1

When one ~~CREFS~~ PAR train is inoperable, action must be taken to restore OPERABLE status within 7 days. In this ~~C~~condition, the remaining OPERABLE ~~CREFS~~ PAR train is adequate to perform the control room protection function. However, the overall reliability is reduced because a single active failure in the OPERABLE ~~CREFS~~ PAR train could result in loss of ~~CREFS~~ PAR 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. 5

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.
---~~ 4

If the control room boundary is inoperable in MODE 1, 2, 3, or 4, the ~~CREFS~~ PAR 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, 5

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All changes are 1 unless otherwise noted

ACTIONS (continued)

temperature and relative humidity, and physical security. Preplanned measures should be available to address these concerns for intentional and unintentional entry into the condition. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of compensatory measures. The 24 hour Completion Time is a typically reasonable time to diagnose, plan and possibly repair, and test most problems with the control room boundary.

C.1 and C.2

PAR

In MODE 1, 2, 3, or 4, if the inoperable CREFS train or control room boundary cannot be restored to OPERABLE status within the required Completion Time, the unit must be placed in a MODE that minimizes accident risk. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

D.1 and D.2

[In MODE 5 or 6, or] during movement of ~~[recently]~~ irradiated fuel assemblies, if the inoperable CREFS train cannot be restored to OPERABLE status within the required Completion Time, action must be taken to immediately place the OPERABLE CREFS train in the emergency mode. This action ensures that the remaining train is OPERABLE~~, that no failures preventing automatic actuation will occur,~~ and that any active failure would be readily detected. 2

PAR

An alternative to Required Action D.1 is to immediately suspend activities that could result in a release of radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes risk. This does not preclude the movement of fuel to a safe position.

~~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.~~

All changes are 1 unless otherwise noted

PAR System CREFS
B 3.7.10

BASES

ACTIONS (continued)

E.1

[In MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies, with two CREFS trains inoperable, action must be taken immediately to suspend activities that could result in a release of radioactivity that might enter the control room. This places the unit in a condition that minimizes accident risk. This does not preclude the movement of fuel to a safe position. 2

F.1

If both CREFS trains are inoperable in MODE 1, 2, 3, or 4 for reasons other than an inoperable control room boundary (i.e., Condition B), the CREFS may not be capable of performing the intended function and the unit is in a condition outside the accident analyses. Therefore, LCO 3.0.3 must be entered immediately.

SURVEILLANCE REQUIREMENTS

SR 3.7.10.1

Standby systems should be checked periodically to ensure that they function properly. As the environment and normal operating conditions on this system are not too severe, testing each train once every month provides an adequate check of this system. Monthly heater operations dry out any moisture accumulated in the charcoal from humidity in the ambient air. [Systems with heaters must be operated for ≥10 continuous hours with the heaters energized. Systems without heaters need only be operated for ≥15 minutes to demonstrate the function of the system.] The 31 day Frequency is based on the reliability of the equipment and the two train redundancy availability. 7

SR 3.7.10.2

This SR verifies that the required CREFS testing is performed in accordance with the [Ventilation Filter Testing Program (VFTP)]. The [VFTP] includes testing the performance of the HEPA filter, charcoal adsorber efficiency, minimum flow rate, and the physical properties of the activated charcoal. Specific test Frequencies and additional information are discussed in detail in the [VFTP]. 2

All changes are 1 unless otherwise noted

PAR System CREFS
B 3.7.10

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.10.3

PAR

(high radiation and safety injection)

This SR verifies that each CREFS train starts and operates on an actual or simulated actuation signal. The Frequency of [18] months is specified in Regulatory Guide 1.52 (Ref. 3).

Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint. 6

SR 3.7.10.4

This SR verifies the integrity of the control room enclosure, and the assumed inleakage rates of the potentially contaminated air. The control room positive pressure, with respect to potentially contaminated adjacent areas, is periodically tested to verify proper functioning of the CREFS. During the emergency mode of operation, the CREFS is designed to pressurize the control room ≥[0.125] inches water gauge positive pressure with respect to adjacent areas in order to prevent unfiltered inleakage. The CREFS is designed to maintain this positive pressure with one train at a makeup flow rate of [3000] cfm. The Frequency of [18] months on a STAGGERED TEST BASIS is consistent with the guidance provided in NUREG-0800 (Ref. 4). 7

REFERENCES

U

1. FSAR, Section [6.4]. 9.6.4 2

2. FSAR, Chapter [15]. 14 2

3. ~~Regulatory Guide 1.52, Rev. [2]~~. 6

4. NUREG-0800, Section 6.4, Rev. 2, July 1981. 7

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JUSTIFICATION FOR DEVIATIONS
ITS 3.7.10 BASES, CONTROL ROOM POST ACCIDENT RECIRCULATION (CRPAR) 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 ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

3. The punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, TSTF-GG-05-01, Section 5.1.3.

4. The Reviewer's Note has been deleted. The information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This is not meant to be retained in the final version of the plant specific submittal. The requested commitment has been made as documented in DOC L01.

5. Typographical error corrected.

6. Regulatory Guide 1.52 provides Frequencies for filter testing, not for automatic actuation testing. Therefore, a new Frequency basis has been provided similar to the basis for other automatic actuation tests.

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

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.10, CONTROL ROOM POST-ACCIDENT RECIRCULATION (CRPAR) SYSTEM

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 11

ITS 3.7.11, CONTROL ROOM AIR CONDITIONING (CRAC) ALTERNATE COOLING SYSTEM

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

Add proposed ITS 3.7.11

M01

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

ADMINISTRATIVE CHANGES

None

MORE RESTRICTIVE CHANGES

M01 The CTS does not have any requirements for the Control Room Air Conditioning (CRAC) Alternate Cooling System to be OPERABLE. ITS 3.7.11 requires two CRAC Alternate Cooling trains to be OPERABLE in MODES 1, 2, 3, 4, and during movement of irradiated fuel assemblies. The ITS also provides ACTIONS when the LCO is not met (ACTIONS A, B, C, D, E, and F) and a Surveillance Requirement (ITS SR 3.7.11.1) to verify the CRAC Alternate Cooling trains are OPERABLE. This changes the CTS by incorporating the requirements of ITS 3.7.11.

The function of the CRAC Alternate Cooling System is to control the temperature in the Control Room Emergency Zone (CREZ) to support the CREZ's equipment capability to perform its safety function and to provide suction to the Control Room Post Accident Recirculation (CRPAR) System. This change is acceptable because the safety analyses assume the CRAC Alternate Cooling System is OPERABLE. 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

All changes are 1 unless otherwise noted

CRAC Alternate Cooling System ~~CREATCS~~
3.7.11

3.7 PLANT SYSTEMS

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

DOC M01 LCO 3.7.11 Two ~~CREATCS~~ CRAC Alternate Cooling trains shall be OPERABLE.

DOC M01 APPLICABILITY: MODES 1, 2, 3, and 4, ~~[5, and 6],~~
During movement of ~~[recently]~~ irradiated fuel assemblies. 2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
DOC M01 A. One ~~CREATCS~~ CRAC Alternate Cooling train inoperable.	A.1 Restore ~~CREATCS~~ CRAC Alternate Cooling train to OPERABLE status.	30 days
DOC M01 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 M01 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 Alternate Cooling train in operation. OR C.2 Suspend movement of ~~[recently]~~ irradiated fuel assemblies.	Immediately Immediately 2
DOC M01 D. Two ~~CREATCS~~ CRAC Alternate Cooling 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 2

CTS

All changes are 1 unless otherwise noted

CRAC Alternate Cooling System

~~CREATCS~~
3.7.11

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
DOC M01 E. Two CRAC Alternate Cooling ~~CREATCS~~ trains inoperable in MODE 1, 2, 3, or 4.	E.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
DOC M01 SR 3.7.11.1 Verify each CRAC Alternate Cooling ~~CREATCS~~ train has the capability to remove the assumed heat load.	~~[~~18~~]~~ months 2

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JUSTIFICATION FOR DEVIATIONS
ITS 3.7.11, CONTROL ROOM AIR CONDITIONING (CRAC) ALTERNATE COOLING 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 ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

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

All changes are 1 unless otherwise noted

CRAC Alternate Cooling System ~~CREATCS~~
B 3.7.11

B 3.7 PLANT SYSTEMS

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

BASES

BACKGROUND

The ~~CREATCS~~ CRAC Alternate Cooling System provides temperature control for the control room following isolation of the control room during a design basis accident.

The ~~CREATCS~~ CRAC Alternate Cooling System consists of two independent and redundant trains that provide cooling ~~and heating~~ of recirculated ~~control room~~ and fresh air. Each train consists of ~~heating coils, cooling coils,~~ INSERT 1 instrumentation, and controls to provide for control room temperature control. The ~~CREATCS is a subsystem providing~~ CRAC Alternate Cooling System provides air temperature control for the control room. INSERT 2

The ~~CREATCS~~ CRAC Alternate Cooling 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]~~° and ~~[85]~~ 60°. 2

The ~~CREATCS~~ CRAC Alternate Cooling System operation in maintaining the control room temperature is discussed in the ~~F~~ U SAR, Section ~~[6.4]~~ 9.6.4 (Ref. 1). 2

APPLICABLE SAFETY ANALYSES

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

The ~~CREATCS~~ CRAC Alternate Cooling System components are arranged in redundant, safety related trains. During emergency operation, the ~~CREATCS~~ CRAC Alternate Cooling System maintains the temperature ~~between [70]° and [85]~~ < 110°F. A single active failure of a component of the ~~CREATCS~~ CRAC Alternate Cooling 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. 2

The ~~CREATCS~~ CRAC Alternate Cooling System is designed in accordance with ~~Seismic Category I~~ Nuclear Safety Design Class requirements. The ~~CREATCS~~ CRAC Alternate Cooling 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.

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

LCO

Two independent and redundant trains of the ~~CREATCS~~ CRAC Alternate Cooling 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 **INSERT 1**

an air handling unit (AHU) (containing filters, a cooling coil, and a fan),

1 **INSERT 2**

F during normal operation using the non-safety related chiller. Under accident conditions (i.e., the non-safety related chillers not in service), cooling from the service water aligned directly to the AHU cooling coils will maintain temperature habitability of the control room environment and will maintain environment temperature for equipment operation. With a service water temperature of 80°F and a 95°F ambient air temperature, each CRAC Alternate Cooling train can maintain control room air temperature within the 110°F design temperature limit

All changes are 1 unless otherwise noted

CRAC Alternate Cooling System ~~CREATCS~~
B 3.7.11

BASES

LCO (continued)

CRAC Alternate Cooling System

The ~~CREATCS~~ is considered to be OPERABLE when the individual components necessary to maintain the control room temperature are OPERABLE in both trains. These components include the ~~heating and~~ cooling coils (with cooling water from the Service Water System) and associated temperature control instrumentation. In addition, the CRAC Alternate Cooling System ~~CREATCS~~ must be operable to the extent that air circulation can be maintained. 3

APPLICABILITY

In MODES 1, 2, 3, and 4, ~~[5, and 6,]~~ and during movement of ~~[recently]~~ irradiated fuel assemblies, the CRAC Alternate Cooling System ~~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 [X] days), due to radioactive decay.]~~ 2

~~[~~In MODE 5 or 6,~~]~~ CRAC Alternate Cooling System ~~CREATCS~~ ~~may~~ is not ~~be~~ required ~~for those facilities that do not require automatic control room isolation~~ for the mitigation of a postulated event. 2

ACTIONS

A.1

With one CRAC Alternate Cooling ~~CREATCS~~ train inoperable, action must be taken to restore OPERABLE status within 30 days. In this ~~C~~condition, the remaining OPERABLE CRAC Alternate Cooling ~~CREATCS~~ train is adequate to maintain the control room temperature within limits. However, the overall reliability is reduced because a single failure in the OPERABLE ~~CREATCS~~ train could result in loss of CRAC Alternate Cooling System ~~CREATCS~~ function. The 30 day Completion Time is based on the low probability of an event requiring control room isolation, the consideration that the remaining train can provide the required protection, and that alternate safety or nonsafety related cooling means are available. 3

B.1 and B.2

In MODE 1, 2, 3, or 4, if the inoperable CRAC Alternate Cooling ~~CREATCS~~ 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

All changes are 1 unless otherwise noted

CRAC Alternate Cooling System

CREATCS
B 3.7.11

BASES

ACTIONS (continued)

C.1 and C.2

[In MODE 5 or 6, or] during movement of [recently] irradiated fuel, if the inoperable CREATCS train cannot be restored to OPERABLE status within the required Completion Time, the OPERABLE 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. 2 3

CRAC Alternate Cooling

CRAC Alternate Cooling

An alternative to Required Action C.1 is to immediately suspend activities 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

(Required Action C.2)

D.1

[In MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies, with two 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. 2 3

CRAC Alternate Cooling

E.1

CRAC Alternate Cooling System

CRAC Alternate Cooling

If both CREATCS trains are inoperable in MODE 1, 2, 3, or 4, the control room CREATCS may not be capable of performing its intended function. Therefore, LCO 3.0.3 must be entered immediately.

SURVEILLANCE REQUIREMENTS

SR 3.7.11.1

both redundant cooling units, verifying the availability of cooling water,

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. 2 2

CRAC Alternate Cooling System

REFERENCES

U

1. FSAR, Section [6.4]. 9.6.4 2

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.11 BASES, CONTROL ROOM AIR CONDITIONING (CRAC) ALTERNATE COOLING 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 ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

3. Typographical error corrected.

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

5. Editorial change for enhanced clarity. The ISTS contains the description of Required Action C.2 but does not directly reference the Required Action. The term "Required Action C.2" has been added in parentheses at the end of the sentence.

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.11, CONTROL ROOM AIR CONDITIONING (CRAC) ALTERNATE COOLING SYSTEM

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 12

ITS 3.7.12, AUXILIARY BUILDING SPECIAL VENTILATION (ASV) SYSTEM

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

2. Verify the affected flow path is isolated:

    a) For isolation devices outside containment, at least once per 31 days, or

See ITS 3.6.3 and 3.7.2

    b) For isolation devices inside containment, prior to entering INTERMEDIATE SHUTDOWN from COLD SHUTDOWN if not performed within the previous 92 days.

D. Valves and blind flanges in high radiation areas may be verified, as required by TS 3.6.b.3.A.2, TS 3.6.b.3.B.2, and TS 3.6.b.3.C.2, by use of administrative means.

See ITS 3.6.3

4. If CONTAINMENT SYSTEM INTEGRITY is required and the OPERABILITY requirements of TS 3.6.b.3 are not met within the times specified, then initiate action to:

    A. Achieve HOT STANDBY within the next 6 hours,

    B. Achieve HOT SHUTDOWN within the following 6 hours, and

    C. Achieve COLD SHUTDOWN within the subsequent 36 hours.

See ITS 3.6.3, 3.7.2, and 3.7.3

Applicability

c. All of the following conditions shall be satisfied whenever CONTAINMENT SYSTEM INTEGRITY, as defined by TS 1.0.g, is required: A02

1. Both trains of the Shield Building Ventilation System, including filters, shall be OPERABLE or the reactor shall be shut down within 12 hours, except that when one of the two trains of the Shield Building Ventilation System is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding 7 days.

See ITS 3.6.10

LA01

LCO 3.7.12

ACTION C

ACTION A

2. Both trains of the Auxiliary Building Special Ventilation System, including filters, shall be OPERABLE or the reactor shall be shut down within 12 hours, except that when one of the two trains of the Auxiliary Building Special Ventilation System is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding 7 days.

M01

Add proposed LCO Note L03

Add proposed ACTION B L04

g. CONTAINMENT SYSTEM INTEGRITY

CONTAINMENT SYSTEM INTEGRITY is defined to exist when:

See ITS Chapter 1.0

1. The non-automatic Containment System isolation valves and blind flanges are closed, except as provided in TS 3.6.b.

2. The reactor containment vessel and shield building equipment hatches are properly closed.

See ITS 3.6.1 and 3.6.8

3. At least one door in both the personnel and the emergency airlocks is properly closed.

See ITS 3.6.2

4. The required automatic Containment System isolation valves are OPERABLE, except as provided in TS 3.6.b.

5. All requirements of TS 4.4 with regard to Containment System leakage and test frequency are satisfied.

See ITS 3.6.1

See ITS 3.6.10

6. The Shield Building Ventilation System and the Auxiliary Building Special Ventilation System satisfy the requirements of TS 3.6.c.

LCO 3.7.12

h. PROTECTIVE INSTRUMENTATION LOGIC

1. PROTECTION SYSTEM CHANNEL

A PROTECTION SYSTEM CHANNEL is an arrangement of components and modules as required to generate a single protective action signal when required by a plant condition. The channel loses its identity where single action signals are combined.

2. LOGIC CHANNEL

A LOGIC CHANNEL is a matrix of relay contacts which operate in response to PROTECTIVE SYSTEM CHANNEL signals to generate a protective action signal.

3. DEGREE OF REDUNDANCY

DEGREE OF REDUNDANCY is defined as the difference between the number of OPERATING channels and the minimum number of channels which, when tripped, will cause an automatic shutdown.

4. PROTECTION SYSTEM

The PROTECTION SYSTEM consists of both the Reactor PROTECTION SYSTEM and the Engineered Safety Features System. The PROTECTION SYSTEM encompasses all electric and mechanical devices and circuitry (from sensors through actuated device) which are required to operate in order to produce the required protective function. Tests of the PROTECTION SYSTEM will be considered acceptable when tests are run in part and it can be shown that all parts satisfy the requirements of the system.

See ITS Chapter 1.0

d. Auxiliary Building Special Ventilation System

SR 3.7.12.3

1. Periodic tests of the Auxiliary Building Special Ventilation System, including the door interlocks, shall be performed in accordance with TS 4.4.c.1 through TS 4.4.c.3, except for TS 4.4.c.2.d.

SR 3.7.12.1

2. Each train of Auxiliary Building Special Ventilation System shall be operated at least 15 minutes every month.

L02

SR 3.7.12.4

3. Each ~~system~~ shall be determined to be operable ~~at the time of periodic test~~ if it starts with coincident isolation of the normal ventilation ducts and produces a measurable vacuum throughout the special ventilation zone with respect to the outside atmosphere.

e. Containment Vacuum Breaker System

The power-operated valve in each vent line shall be tested during each refueling outage to demonstrate that a simulated containment vacuum of 0.5 psig will open the valve and a simulated accident signal will close the valve. The check and butterfly valves will be leak tested in accordance with TS 4.4.b during each refueling, except that the pressure will be applied in a direction opposite to that which would occur post-LOCA.

See ITS 3.6.1, 3.6.3, and 3.6.9

f. Containment Isolation Device Position Verification

1. When the reactor is greater than Cold Shutdown condition, verify each 36 inch containment purge and vent isolation valve is sealed closed every 31 days.

2. When the reactor is critical, verify each 2 inch containment vent isolation valve is closed every 31 days, except when the 2 inch containment vent isolation valves are open for pressure control, ALARA, or air quality considerations for personnel entry, or Surveillances that require the valves to be open.

See ITS 3.6.3

3. Containment isolation manual valves and blind flanges shall be verified closed as specified in TS 4.4.f.3.a and TS 4.4.f.3.b, except as allowed by TS 4.4.f.3.c.

   a. When greater than COLD SHUTDOWN, verify each containment isolation manual valve and blind flange that is located outside containment and required to be closed during accident conditions is closed every 31 days, except for containment isolation valves that are locked, sealed, or otherwise secured closed or open as allowed by TS 3.6.b.2.

A01

4.4 CONTAINMENT TESTS

APPLICABILITY

~~Applies to integrity testing of the steel containment, shield building, auxiliary building special ventilation zone, and the associated systems including isolation valves.~~

OBJECTIVE

~~To verify that leakage from the containment system is maintained within allowable limits in accordance with 10 CFR Part 50, Appendix J.~~

SPECIFICATION

a. Integrated Leak Rate Tests (Type A)

Perform required visual examinations and leakage rate testing in accordance with the Containment Leakage Rate Testing Program.

As a one-time exception to the Containment Leakage Rate Testing Program, the first Type A test following the Type A test performed in April 1994 shall be required no later than October 2009.

See ITS 3.6.1

b. Local Leak Rate Tests (Type B and C)

Perform required air lock, penetration, and containment isolation valve leakage testing in accordance with the Containment Leakage Rate Testing Program.

See ITS 3.6.1, 3.6.2, and 3.6.3

c. Shield Building Ventilation System

See ITS 3.6.10

SR 3.7.12.3 1. ~~At least once per operating cycle or~~ once every 18 months, ~~whichever occurs first,~~ the following conditions shall be demonstrated: A03

a. Pressure drop across the combined HEPA filters and charcoal adsorber banks is < 10 inches of water and the pressure drop across any HEPA filter bank is < 4 inches of water at the system design flow rate (±10%).

See ITS 5.5.9

SR 3.7.12.3 b. Automatic initiation of each train of the system (actual or simulated). L01

c. Deleted

ITS A01 ITS 3.7.12

2. Shield Building Ventilation System Filter Testing

See ITS 3.6.10

Add proposed SR 3.7.12.2 A04

a. The in-place DOP test for HEPA filters shall be performed (1) at least once per 18 months and (2) after each complete or partial replacement of a HEPA filter bank or after any maintenance on the system that could affect the HEPA bank bypass leakage.

b. The laboratory tests for activated carbon in the charcoal filters shall be performed (1) at least once per 18 months for filters in a standby status or after 720 hours of filter operation, and (2) following painting, fire, or chemical release in any ventilation zone communicating with the system.

See ITS 5.5.9

c. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of a charcoal adsorber bank or after any maintenance on the system that could affect the charcoal adsorber bank bypass leakage.

d. Each train shall be operated at least 15 minutes every month.

See ITS 3.6.10

3. An air distribution test on these HEPA filter banks will be performed after any maintenance or testing that could affect the air distribution within the systems. The test shall be performed at design flow rate (±10%). The results of the test shall show the air distribution is uniform within ±20%.[1]

See ITS 5.5.9

4. Each train shall be determined to be operable at the time of its periodic test if it produces measurable indicated vacuum in the annulus within 2 minutes after initiation of a simulated safety injection signal and obtains equilibrium discharge conditions that demonstrate the Shield Building leakage is within acceptable limits.

See ITS 3.6.8

[1] In WPS letter of August 25, 1976 to Mr. Al Schwencer (NRC) from Mr. E. W. James, we relayed test results for flow distribution for tests performed in accordance with ANSI N510-1975. This standard refers to flow distribution tests performed upstream of filter assemblies. Since the test results upstream of filters were inconclusive due to high degree of turbulence, tests for flow distribution were performed downstream of filter assemblies with acceptable results (within 20%). The safety evaluation attached to Amendment 12 references our letter of August 25, 1976 and acknowledges acceptance of the test results.

See ITS 5.5.9

DISCUSSION OF CHANGES
ITS 3.7.12, AUXILIARY BUILDING SPECIAL VENTILATION (ASV) SYSTEM

ADMINISTRATIVE CHANGES

A01 In the conversion of the Kewaunee Power Station (KPS) 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. 3.0, "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.

A02 CTS 3.6.c states, in part, that both trains of the Auxiliary Building Special Ventilation (ASV) System shall be OPERABLE when CONTAINMENT SYSTEM INTEGRITY, as defined by TS 1.0.g, is required. The ITS 3.7.12 Applicability for the ASV System is MODES 1, 2, 3, and 4. This changes the CTS by stating the specific MODE of Applicability in lieu of referencing the Applicability of another Specification.

The purpose of the CTS 3.6.c statement is to identify when the ASV System is required to be OPERABLE. CTS 3.6.a requires CONTAINMENT SYSTEM INTEGRITY if there is fuel in the reactor vessel which has been used for power operation, except whenever either the reactor is in COLD SHUTDOWN with the reactor vessel head installed (ITS equivalent MODE 5) or REFUELING (ITS equivalent MODE 6). This change is acceptable since the proposed Applicability is the same as the current Applicability. This change is designated as administrative because it does not result in technical changes to the CTS.

A03 CTS 4.4.d.1 requires, in part, that ASV periodic tests be performed in accordance with CTS 4.4.c.1 through 4.4.c.3 except for CTS 4.4.c.2.d. CTS 4.4.c.1 states that "At least once per operating cycle or once every 18 months, whichever occurs first, the following conditions shall be demonstrated:". ITS (i.e., SR 3.7.12.3) requires periodic tests for the applicable requirement to be performed every 18 months. This changes the CTS by deleting the "once per operating cycle" and whichever occurs first" terminology.

This change is acceptable since the terms "operating cycle" and "18 months" are synonymous. The Surveillance Frequency remains essentially unchanged since the KPS refueling outage occurs every 18 months. The requirements in both the CTS and ITS remain unchanged in that a test us required to ensure the system will perform its intended function. This change is designated as administrative because it does not result in technical changes to the CTS.

A04 CTS 4.4.d, in part, requires the periodic test of CTS 4.4.c.1.a, 4.4.c.2.a, 4.4.c.2.b, 4.4.c.2.c, and 4.4.c.3 to be performed. CTS 4.4.c.1.a, 4.4.c.2.a, 4.4.c.2.b, 4.4.c.2.c, and 4.4.c.3 provide filter testing requirements for the ASV System. ITS SR 3.7.12.2 requires performance of Auxiliary Building Special Ventilation (AVS) System filter testing in accordance with the Ventilation Filter Testing Program (VFTP) at a frequency in accordance with the VFTP. CTS 4.4.c 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.

DISCUSSION OF CHANGES
ITS 3.7.12, AUXILIARY BUILDING SPECIAL VENTILATION (ASV) SYSTEM

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 requires testing in accordance with the VFTP. This change is designated as administrative because it does not result in a technical change the CTS.

MORE RESTRICTIVE CHANGES

M01 If one ASV train is not restored to OPERABLE status within 7 days, CTS 3.6.c.2 requires that the reactor must be "shut down within 12 hours." Under similar conditions, ITS 3.7.12 ACTION B requires the unit be in MODE 3 within 6 hours and in MODE 5 within 36 hours. This changes the CTS by allowing 6 hours to reach MODE 3 instead of the 12 hours allowed in the CTS. Additionally, it adds a new requirement to be in MODE 5 within 36 hours that was not required in the CTS.

The purpose of CTS 3.6.c.2 is to provide appropriate compensatory measures when a train of ASV System is not restored within 7 days. The reactor can be considered "shut down" when it is subcritical (i.e., when in HOT SHUTDOWN - ITS equivalent MODE 3). Since the Applicability of the ASV is MODES 1, 2, 3, and 4, the appropriate shutdown action would be to place the unit outside this Applicability - i.e., into MODE 5. Therefore, this change is acceptable because it places the unit in MODE 5, which is outside the Applicability of the ITS LCO 3.7.12. This change is designated as more restrictive because a shorter amount of time is allowed to place the unit in MODE 3 (6 hours) than is currently allowed (12 hours) and a new action to be in MODE 5 has been added.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.6.c.2 states, in part, that both trains of the Auxiliary Building Special Ventilation (ASV) System, "including filters," shall be OPERABLE. ITS 3.7.12 does not contain this requirement. This changes the CTS by moving the requirement for the filters to the Bases.

The removal of these details, which are related to system operation, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement for the ASV System to be OPERABLE and the relocated material describes an aspect of OPERABILITY. 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 Specifications 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 less restrictive

DISCUSSION OF CHANGES
ITS 3.7.12, AUXILIARY BUILDING SPECIAL VENTILATION (ASV) SYSTEM

removal of detail change because information relating to system operation is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L01 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* CTS 4.4.c.1.b requires the automatic initiation of each train of the Auxiliary Building Special Ventilation (ASV) System at least once per operating cycle or once every 18 months, whichever occurs first. ITS SR 3.7.12.3 requires verification that each ASV System train actuates on an actual or simulated actuation signal every 18 months. This changes the CTS by explicitly allowing the use of either an actual or simulated signal for the test. The change discussion regarding the use of every 18 months is provided in DOC A03.

The purpose of CTS 4.4.c.1.b is to ensure that ASV System actuates upon receipt of an SI 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 and "actual" or "simulated" signal and, therefore, the results of the testing are unaffected by the type of signal used to initiate the test. This change 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.

L02 *(Category 7 – Relaxation of Surveillance Frequency)* CTS 4.4.d.3 requires each Auxiliary Building Special Ventilation System train to be determined OPERABLE at the time of the periodic test if it starts with a coincident isolation of the normal ventilation ducts and produces a measurable vacuum throughout the special ventilation zone with respect to the outside atmosphere. CTS 4.4.c.1 specifies that the normal periodic test of the ASV system is once per operating cycle (which is defined as 18 months) or 18 months, whichever comes first. ITS SR 3.7.12.4 requires a similar test (as modified by DOCs A03 and M01), however it is required to be performed using one ASV System train every 18 months "on a STAGGERED TEST BASIS." This changes the CTS by requiring the test be performed using each ASV System train at least once per 36 months.

The purpose of the CTS 4.4.d.3 test is to ensure the integrity of the auxiliary building special ventilation zone negative pressure boundary. This change is acceptable because the new Surveillance Frequency provides an acceptable level of equipment reliability. This change is acceptable since the proposed Surveillance Frequency will continue to require performance of the test every 18 months. This will ensure that the auxiliary building special ventilation zone negative pressure boundary is maintained. The status of the auxiliary building special ventilation zone negative pressure boundary can be determined with either ASV System train. ITS SR 3.7.12.3 requires the performance of a test to ensure that ASV System train actuates on an actual or simulated initiation signal. Therefore, each subsystem will continue to be tested to ensure it can be automatically aligned to the correct mode of operation, however the verification that the auxiliary building special ventilation zone negative pressure boundary will

DISCUSSION OF CHANGES
ITS 3.7.12, AUXILIARY BUILDING SPECIAL VENTILATION (ASV) SYSTEM

only be required with one train in operation per operating cycle (i.e., 18 months). This change is designated as less restrictive because the Surveillance will only be required to be performed on one ASV System train each Surveillance interval instead of on both ASV System trains.

L03 *(Category 1 – Relaxation of LCO Requirements)* CTS 3.6.c.2 states, in part, that both trains of the Auxiliary Building Special Ventilation (ASV) System shall be OPERABLE, but does not allow the ASV boundary to be opened intermittently. ITS 3.7.12 contains an LCO Note which allows the ASV boundary to be opened intermittently under administrative control. This changes the CTS by allowing the ASV boundary to be opened intermittently under administrative control.

The purpose of the ITS LCO 3.7.12 Note is to provide assurance that ASV boundary can support the function of the ASV System. This change is acceptable because the ITS LCO 3.7.12 Note provides appropriate controls, based on unit design, for the ASV system to perform its function of maintaining a negative pressure inside the ASV boundary while filtering air discharged from those areas. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

L04 *(Category 3 – Relaxation of Completion Time)* CTS 3.6.c.2 requires, in part, that both trains of the Auxiliary Building Special Ventilation (ASV) System shall be OPERABLE, but does not provide Actions to take if both trains are inoperable due to an inoperable ASV boundary. Therefore, with two trains of the ASV inoperable due to an inoperable ASV boundary, CTS 3.0.c must be entered. CTS 3.0.c requires action to be initiated within 1 hour, to be in HOT STANDBY (equivalent to ITS MODE 2) in the following 6 hours, to be in HOT SHUTDOWN (equivalent to ITS MODE 3) in the following 6 hours, and to be in COLD SHUTDOWN (equivalent to ITS MODE 5) in the subsequent 36 hours. ITS 3.7.12 ACTION B requires restoration of the ASV boundary to OPERABLE status within 24 hours if the two ASV trains are inoperable due to an inoperable ASV boundary. This changes the CTS by providing ACTION for restoration when both trains of the ASV are inoperable due to the ASV boundary being inoperable.

The purpose of the ITS 3.7.12 ACTION B is to provide assurance that ASV boundary can support the function of the ASV System. This change is acceptable because during the time period that the ASV boundary is inoperable, KPS will provide compensatory measures to protect plant personnel from potential hazards. KPS will have preplanned compensatory measures in place to address both the intentional and the unintentional inoperability of the ASV boundary. Furthermore, the 24 hour Completion Time is acceptable based on the low probability of a DBA occurring during this time period and the compensatory measures that will be taken. This change is considered less restrictive because less stringent Completion Times are being applied in the ITS than were applied in the CTS.

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

All changes are 1 unless otherwise noted

3.7 PLANT SYSTEMS

1.0.g.6
3.6.c.2 3.7.12 ~~Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup~~ Auxiliary Building Special Ventilation (ASV) System ~~(PREACS)~~

3.6.c.2 LCO 3.7.12 Two ~~ECCS PREACS~~ ASV trains shall be OPERABLE.

DOC L03
---NOTE---
The ~~ECCS pump room~~ ASV boundary may be opened intermittently under administrative control.

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

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
3.6.c.2	A. One ~~ECCS PREACS~~ ASV train inoperable.	A.1 Restore ~~ECCS PREACS~~ ASV train to OPERABLE status.	7 days
DOC L04	B. Two ~~ECCS PREACS~~ ASV trains inoperable due to inoperable ~~ECCS pump room~~ ASV boundary.	B.1 Restore ~~ECCS pump room~~ ASV boundary to OPERABLE status.	24 hours
3.6.c.2	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

All changes are 1 unless otherwise noted

ASV System ~~ECCS PREACS~~
3.7.12

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY	
4.4.d.2 SR 3.7.12.1	ASV Operate each ~~ECCS PREACS~~ train for ~~[≥ 10 continuous hours with the heaters operating or (for systems without heaters)~~ ≥ 15 minutes~~]~~.	31 days	2
DOC A04 SR 3.7.12.2	ASV System Perform required ~~ECCS PREACS~~ filter testing in accordance with the ~~[~~Ventilation Filter Testing Program (VFTP)~~]~~.	In accordance with the ~~[~~VFTP~~]~~	2
4.4.d.1, 4.4.c.1.b SR 3.7.12.3	ASV Verify each ~~ECCS PREACS~~ train actuates on an actual or simulated actuation signal.	~~[~~18~~]~~ months	2
4.4.d.3 SR 3.7.12.4	measurable vacuum ASV Verify one ~~ECCS PREACS~~ train can maintain a ~~pressure ≤ [-0.125] inches water gauge relative to atmospheric pressure~~ ~~during the [post accident]~~ with coincident isolation of the normal vent ducts ~~mode of operation at a flow rate of ≤ [3000] cfm~~.	~~[~~18~~]~~ months on a STAGGERED TEST BASIS	3 4
SR 3.7.12.5	~~[Verify each ECCS PREACS filter bypass damper can be closed.~~	~~[18] months]~~	3

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JUSTIFICATION FOR DEVIATIONS
ITS 3.7.12, AUXILIARY BUILDING SPECIAL VENTILATION (ASV) SYSTEM

1. The ISTS 3.7.12 title, "Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)" has been changed to "Auxiliary Building Special Ventilation (ASV) System" consistent with the Kewaunee Power Station (KPS) site specific terminology.

2. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

3. ITS SR 3.7.12.5 contains bracketed information and/or values that are generic to all Westinghouse vintage plants. KPS does not have filter bypass dampers, therefore, this Surveillance Requirement was deleted.

4. ITS SR 3.7.12.4 has been changed to reflect the current licensing bases for verification that the ASV train can maintain a measurable vacuum with coincident isolation of the normal vent duct. This change is acceptable because the SR is revised to reflect the current plant licensing bases.

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

All changes are 1 unless otherwise noted

ASV System

B 3.7 PLANT SYSTEMS

Auxiliary Building Special Ventilation (ASV)

B 3.7.12 Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)

BASES

ASV System

Containment and the Auxiliary Building (the ASV boundary).

BACKGROUND

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. 2

ASV 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. 2 2 2

ASV boundary

ASV System

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 2

ASV System

INSERT 1

ASV System

Appendix H

U

9.6.5

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). 2 3 2

is

2 **INSERT 1**

normal supply and exhaust ducts from the ASV are closed automatically and the normal supply and exhaust fans for the Auxiliary Building are tripped

All changes are 1 unless otherwise noted

ASV System ~~ECCS PREACS~~
B 3.7.12

BASES

APPLICABLE SAFETY ANALYSES

ASV System

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. ~~5~~) limits, or the NRC staff approved licensing basis (e.g., a specified fraction of Reference 5 limits). ~~The analysis of the effects and consequences of a large break LOCA is presented in Reference 3. 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 2 50.67 4 2

~~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.~~ 2

ASV System

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

LCO

ASV System

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).

ASV boundary area 50.67 2

The ASV System ~~ECCS PREACS~~ is considered OPERABLE when the individual components necessary to maintain the ~~ECCS pump room~~ filtration are OPERABLE in both trains.

ASV boundary area 2

ASV

An ~~ECCS PREACS~~ train is considered OPERABLE when its associated:

a. Fan is OPERABLE~~.~~ ; 6

b. HEPA filter and charcoal adsorbers are not excessively restricting flow, and are capable of performing their filtration functions~~,~~ ; and 6

c. ~~Heater, demister,~~ ductwork, valves, and dampers are OPERABLE and air circulation can be maintained. 2

Furthermore, the ASV boundary must be maintained, including the integrity of the walls, floors, ceiling, ductwork, and access doors. 7

1

INSERT 2

a small amount of containment leakage bypasses the Shield Building Ventilation (SBV) System. A percentage of this leakage would be collected and processed by the ASV System

All changes are 1 unless otherwise noted

ASV System ~~ECCS PREACS~~
B 3.7.12

BASES

LCO (continued)

The LCO is modified by a Note allowing the ASV ~~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 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 ASV boundary ~~ECCS pump room~~ isolation is indicated. 4

APPLICABILITY

In MODES 1, 2, 3, and 4, the ASV System ~~ECCS PREACS~~ is required to be OPERABLE consistent with the OPERABILITY requirements of the ECCS and Containment (which are within the ASV boundary).

In MODE 5 or 6, the ASV System ~~ECCS PREACS~~ is not required to be OPERABLE since the ECCS and Containment are ~~is~~ not required to be OPERABLE. 2

ACTIONS

A.1

With one ASV ~~ECCS PREACS~~ 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 ASV System ~~ECCS PREACS~~ function.

~~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. 2

Concurrent failure of two ASV ~~ECCS PREACS~~ trains would result in the loss of functional capability; therefore, LCO 3.0.3 must be entered immediately. 5

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.~~
~~---~~ 4

All changes are 1 unless otherwise noted

ASV System ~~ECCS PREACS~~
B 3.7.12

BASES

ACTIONS (continued)

If the ASV ~~ECCS pump room~~ boundary is inoperable, the ASV ~~ECCS PREACS~~ trains cannot perform their intended functions. Actions must be taken to restore an OPERABLE ASV ~~ECCS pump room~~ boundary within 24 hours. During the period that the ASV ~~ECCS pump 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 ASV ~~ECCS pump room~~ boundary. 4

C.1 and C.2

If the ASV ~~ECCS PREACS~~ train ~~or ECCS pump 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 allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. 4

SURVEILLANCE REQUIREMENTS

SR 3.7.12.1

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 provides an adequate check on this system. ~~Monthly heater operations dry out any moisture that may have accumulated in the charcoal from humidity in the ambient air. [Systems with heaters must be operated ≥10 continuous hours with the heaters energized. Systems without heaters need only be operated for ≥15 minutes to demonstrate the function of the system.]~~ The 31 day Frequency is based on the known reliability of equipment and the two train redundancy available. 4

All changes are 1 unless otherwise noted

ASV System

~~ECCS PREACS~~
B 3.7.12

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.12.2

ASV System

This SR verifies that the required ~~ECCS PREACS~~ testing is performed in accordance with the [Ventilation Filter Testing Program (VFTP)]. The [VFTP] includes testing HEPA filter performance, charcoal adsorbers 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]. 3 3

SR 3.7.12.3

ASV

This SR verifies that each ~~ECCS PREACS~~ train starts and operates on an actual or simulated actuation signal. The [18] month Frequency is consistent with that specified in Reference ~~4~~. 3 2

3

SR 3.7.12.4

ASV boundary area

outside atmosphere

ASV boundary

ASV System

ASV boundary area

outside areas

measurable vacuum with a coincident isolation of the normal vent ducts

This SR verifies the integrity of the ~~ECCS pump room~~ enclosure. The ability of the ~~ECCS pump room~~ to maintain a negative pressure, with respect to ~~potentially uncontaminated adjacent areas~~, is periodically tested to verify proper functioning of the ~~ECCS PREACS~~. During the [post accident] mode of operation, the ~~ECCS PREACS~~ is designed to maintain a slight negative pressure in the ~~ECCS pump room~~, with respect to ~~adjacent areas~~, to prevent unfiltered LEAKAGE. The ~~ECCS PREACS~~ is designed to maintain a ~~≤[-0.125] inches water gauge~~ relative to ~~atmospheric pressure at a flow rate of [3000] cfm from the ECCS pump room. The Frequency of [18] months is consistent with the guidance provided in NUREG-0800, Section 6.5.1 (Ref. 6)~~. 3 4 3

~~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~~. 3 2

3

~~[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.]~~ 4

All changes are 1 unless otherwise noted

ASV System ~~ECCS PREACS~~
B 3.7.12

BASES

REFERENCES

1. U ~~F~~SAR, Section 9.6.5 ~~[6.5.1]~~. 2 3
2. U ~~F~~SAR, Appendix H ~~Section [9.4.5]~~. 2 3
3. ~~FSAR, Section [15.6.5].~~ 2
3 ~~4~~. Regulatory Guide 1.52 (Rev. 3 ~~2~~). 2
4 ~~5~~. 10 CFR 50.67 ~~100.11~~. 2
6. ~~NUREG-0800, Section 6.5.1, Rev. 2, July 1981.~~ 2

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JUSTIFICATION FOR DEVIATIONS
ITS 3.7.12 BASES, AUXILIARY BUILDING SPECIAL VENTILATION (ASV) SYSTEM

1. The ISTS 3.7.12 title, "Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)" has been changed to "Auxiliary Building Special Ventilation (ASV) System" consistent with the Kewaunee Power Station (KPS) site specific terminology. Additionally, bases references have been changed to the appropriate sections of the USAR. Subsequent reference numbers have been renumbered.

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 ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

4. Changes are made to reflect those changes made to the ISTS Specifications.

5. Change made to be consistent with the Specification.

6. The punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, TSTF-GG-05-01, Section 5.1.3.

7. ISTS 3.7.12 LCO Note allows the boundary to be intermittently open and ACTION B provides actions when the boundary is inoperable. However, the ISTS LCO section of the Bases does not specify any boundary requirements as part of the train OPERABILITY requirements. Therefore, a statement that the boundary is part of the train OPERABILITY requirements has been added to the LCO Bases section, similar to the requirement in ISTS 3.7.10 (the Control Room Emergency Filtration System).

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.12, AUXILIARY BUILDING SPECIAL VENTILATION (ASV) SYSTEM

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 13

ITS 3.7.13, SPENT FUEL POOL WATER LEVEL

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

Add proposed ITS 3.7.13

M01

Attachment 1, Volume 12, Rev. 1, Page 292 of 415

DISCUSSION OF CHANGES
ITS 3.7.13, SPENT FUEL POOL WATER LEVEL

ADMINISTRATIVE CHANGES

None

MORE RESTRICTIVE CHANGES

M01 The CTS does not have any requirements for the Spent Fuel Pool Water Level. ITS 3.7.13 requires the Spent Fuel Pool Water Level to be ≥ 23 ft over the top of the irradiated fuel assemblies seated in the storage racks, during movement of irradiated fuel assemblies in the spent fuel pool. An associated ACTION (ACTION A) is provided if the LCO is not met and an applicable Surveillance Requirement (ITS SR 3.7.13.1) has been added to verify the spent fuel pool water level is within the limit every 7 days. This changes the CTS by incorporating the requirements of ITS 3.7.13.

The safety function of the Spent Fuel Pool Water Level is to provide a sufficient water level over the stored fuel assemblies to provide an acceptable decontamination factor for iodine such that the dose criteria of 10 CFR 50.67 are met. With ≥ 23 feet of water above the top of the stored spent fuel, sufficient water level is maintained in the spent fuel pool to meet the assumptions of the fuel handling accident. This change is acceptable because the safety analyses assume the Spent Fuel Pool is OPERABLE with ≥ 23 feet of water above the spent fuel assemblies. This change is designated as more restrictive because it adds new requirements to the CTS.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

None

LESS RESTRICTIVE CHANGES

None

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

CTS

All changes are 1 unless otherwise noted

Spent Fuel ~~Storage~~ Pool Water Level
3.7.~~15~~ 13 2

3.7 PLANT SYSTEMS

3.7.~~15~~ 13 Spent Fuel ~~Storage~~ Pool Water Level 2

DOC M01 LCO 3.7.~~15~~ 13 The spent fuel ~~storage~~ pool water level shall be ≥ 23 ft over the top of irradiated fuel assemblies seated in the storage racks. 2

DOC M01 APPLICABILITY: During movement of irradiated fuel assemblies in the spent fuel ~~storage~~ pool.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Spent ~~Fuel~~ 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 spent fuel ~~storage~~ pool.	 Immediately

DOC M01 (Condition A)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.~~15~~13.1	Verify the spent fuel ~~storage~~ pool water level is ≥ 23 ft above the top of the irradiated fuel assemblies seated in the storage racks.	7 days

DOC M01 (SR 3.7.15.1) 2

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.13, SPENT FUEL POOL WATER LEVEL

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. ISTS 3.7.15 has been renumbered to ITS 3.7.13 since ISTS 3.7.13 and ISTS 3.7.14 have not been included in the Kewaunee Power Station (KPS) ITS.

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

All changes are 1 unless otherwise noted

B 3.7 PLANT SYSTEMS

B 3.7.~~15~~ 13 Spent Fuel ~~Storage~~ Pool Water Level 7

BASES

BACKGROUND

The minimum water level in the spent fuel ~~storage~~ pool (the north pool, south pool, and canal 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 spent fuel ~~storage~~ pool design is given in the ~~F~~ U SAR, Section ~~[9.1.2]~~ 9.5 (Ref. 1). A description of the Spent Fuel Pool Cooling and Cleanup System is given in the ~~F~~ U SAR, Section ~~[9.1.3]~~ 9.3 (Ref. 2). The assumptions of the fuel handling accident are given in the ~~F~~ U SAR, Section ~~[15.7.4]~~ 14.2.1 (Ref. 3). 2 2 2

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~~ 1.183 (Ref. 4). The resultant 2 hour ~~thyroid~~ TEDE dose per person at the exclusion area boundary is ~~a small fraction~~ < 25% of the 10 CFR ~~100~~ 50.67 (Ref. 5) limits. 3

According to Reference ~~4~~ 3, there is 23 ft of water between 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 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.~~ Based on studies performed to confirm the stripping efficiency of the spent fuel pool water with laboratory tests (Ref. 6), the use of the ≥ 23 ft decontamination factor is acceptable. 3

The spent fuel ~~storage~~ pool water level satisfies Criteria 2 and 3 of 10 CFR 50.36(c)(2)(ii).

LCO

The spent 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 irradiated fuel ~~storage and~~ movement within the spent fuel ~~storage~~ pool. 4

All changes are 1 unless otherwise noted

7

BASES

APPLICABILITY

This LCO applies during movement of irradiated fuel assemblies in the spent 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 spent fuel ~~storage~~ pool water level is lower than the required level, the movement of irradiated fuel assemblies in the spent fuel ~~storage~~ pool is immediately suspended to a safe position. This action effectively precludes the occurrence of a fuel handling accident. This does not preclude movement of a fuel assembly to a safe position.

If moving irradiated fuel assemblies while in MODE 5 or 6, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODES 1, 2, 3, and 4, the fuel movement is independent of reactor operations. Therefore, inability to suspend movement of irradiated fuel assemblies is not sufficient reason to require a reactor shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.7.~~15~~ 13.1 7

This SR verifies sufficient spent fuel ~~storage~~ pool water is available in the event of a fuel handling accident. The water level in the spent fuel ~~storage~~ pool must be checked periodically. The 7 day Frequency is appropriate because the volume in the pool is normally stable. Water level changes are controlled by plant procedures and are acceptable based on operating experience.

~~During refueling operations, the level in the fuel storage pool is in equilibrium with the refueling canal, and the level in the refueling canal is checked daily in accordance with SR 3.9.6.1.~~ 6

REFERENCES

1. U ~~F~~SAR, Section ~~[9.1.2]~~ 9.5.
2. U ~~F~~SAR, Section ~~[9.1.3]~~ 9.3.
3. U ~~F~~SAR, Section ~~[15.7.4]~~ 14.2.1. 2
4. Regulatory Guide ~~1.25~~ 1.183, ~~[Rev. 0]~~ July 2000. 3 2
5. 10 CFR ~~100.11~~ 50.67. 3
6. Malinowski, D. D., Bell, M. J., Duhn, E., and Locante, J., WCAP-7828, Radiological Consequences of a Fuel Handling Accident, December 1971.

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.13 BASES, SPENT FUEL POOL WATER LEVEL

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 ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

3. Changes are made to the ISTS Bases which reflect the Kewaunee Power Station (KPS) design. License Amendment 166, issued March 17, 2003 (ADAMS accession No. ML030210062), revised the radiological consequence analyses for the KPS design basis accidents to implement the alternate source term (AST) as described in Regulatory Guide 1.183, "Alternative Radiological Source Terms for Evaluating Design-Basis Accidents at Nuclear Power Reactors" and pursuant to 10 CFR 50.67, "Accident Source Term."

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

5. Editorial change for clarity. The first paragraph, which describes the addition of the Note, has been combined with the paragraph describing the reason for the Note.

6. ISTS SR 3.7.15.1 contains a discussion regarding the level of the fuel storage pool being in equilibrium with the refueling canal and the level of the refueling canal being checked in accordance with SR 3.9.6.1. This information has been deleted since it is considered inappropriate to be included in the Surveillance Requirement discussion for the fuel storage pool.

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

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.13, SPENT FUEL POOL WATER LEVEL

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 14

ITS 3.7.14, SPENT FUEL POOL BORON CONCENTRATION

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

ITS

A01

ITS 3.7.14

5.4 FUEL STORAGE

APPLICABILITY

Applies to the capacity and storage arrays of new and spent fuel.

OBJECTIVE

To define those aspects of fuel storage relating to prevention of criticality in fuel storage areas.

SPECIFICATION

a. Criticality

1. The spent fuel storage racks are designed and shall be maintained with the following:

   a. Fuel assemblies having a maximum enrichment of 56.067 grams Uranium-235 per axial centimeter

   b. k_{eff} < 0.95 if fully flooded with unborated water, which includes an allowance for uncertainties

See ITS 4.0

2. The new fuel storage racks are designed and shall be maintained with:

   a. Fuel assemblies having a maximum enrichment of 56.067 grams Uranium-235 per axial centimeter

   b. k_{eff} < 0.95 if fully flooded with unborated water, which includes an allowance for uncertainties

   c. k_{eff} < 0.98 if moderated by aqueous foam, which includes an allowance for uncertainties

L02

LCO 3.7.14

3. The spent fuel pool is filled with borated water at a concentration to match that used in the reactor REFUELING cavity and REFUELING canal during REFUELING OPERATIONS or whenever there is fuel in the pool.

See ITS 3.9.1

Applicability

L01

b. Capacity

The spent fuel storage pool is designed with a storage capacity of 1205 assemblies and shall be limited to no more than 1205 fuel assemblies.

See ITS 4.0

c. Canal Rack Storage

Fuel assemblies stored in the canal racks shall meet the minimum required fuel assembly burnup as a function of nominal initial enrichment as shown in Figure TS 5.4-1. These assemblies shall also have been discharged prior to or during the 1984 REFUELING outage.

See ITS 3.7.15

Add proposed ACTION A

M01

TABLE TS 4.1-2

MINIMUM FREQUENCIES FOR SAMPLING TESTS

See ITS 3.5.4

SAMPLING TESTS	TEST	FREQUENCY
3. Refueling Water Storage Tank Water Sample(7)	Boron Concentration	Monthly(8)
4. Deleted		
5. Accumulator	Boron Concentration	Monthly
6. Spent Fuel Pool	Boron Concentration	~~Monthly~~(9) 7 days
7. Secondary Coolant	a. Gross Beta or Gamma Activity b. Iodine Concentration	Weekly Weekly when gross beta or gamma activity ≥ 0.1 μCi/gram

See ITS 3.5.1

See ITS 3.7.16

M02

SR 3.7.14.1

(7) A refueling water storage tank (RWST) boron concentration sample does not have to be taken when the RWST is empty during REFUELING outages.
(8) And after adjusting tank contents.

See ITS 3.5.4

(9) Sample will be taken ~~monthly~~ every 7 days when fuel is in the pool. M02

SR 3.7.14.1

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DISCUSSION OF CHANGES
ITS 3.7.14, SPENT FUEL POOL BORON CONCENTRATION

ADMINISTRATIVE CHANGES

A01 In the conversion of the Kewaunee Power Station (KPS) 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. 3.0, "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

M01 CTS 5.4.a.3 does not provide any ACTIONS to take when the spent fuel pool boron concentration is not within limit. When the spent fuel pool boron concentration is not within limit, ITS 3.7.14 ACTION A requires the immediate suspension of movement of fuel assemblies in the spent fuel pool; immediate action to restore the spent fuel pool boron concentration to within limit; and, immediate action to perform a spent fuel pool verification. This changes the CTS by providing specific ACTIONS when the spent fuel pool boron concentration is not within limit.

The purpose of CTS 5.4.a.3 is to ensure adequate dissolved boron is in the spent fuel pool water to maintain the required subcriticality margin. ITS 3.7.14 ACTION A effectively places the unit outside of the Applicability by requiring the plant to immediately suspend any operations that would further decrease the spent fuel pool subcriticality margin and to initiate actions to restore the boron concentration to within limits. The proposed Required Actions reflect the importance of maintaining the spent fuel pool boron concentration. This change is designated more restrictive because a new proposed ACTION has been added.

M02 CTS Table TS 4.1-2 Sampling Test 6 requires verification of the boron concentration of the spent fuel pool once a month. ITS SR 3.7.14.1 requires verification that the spent fuel pool boron concentration is within limit every 7 days. This changes the CTS by requiring the verification of the spent fuel pool boron concentration every 7 days versus once per month.

The purpose of CTS Table TS 4.1-2 Sampling Test 6 is to ensure adequate dissolved boron is in the spent fuel pool water to maintain the required subcriticality margin. This change is acceptable because the 7 day sampling Frequency is more frequent than the current sampling requirement. This change is designated more restrictive because less time is allowed for performing a Surveillance Requirement than was allowed in the CTS.

RELOCATED SPECIFICATIONS

None

DISCUSSION OF CHANGES
ITS 3.7.14, SPENT FUEL POOL BORON CONCENTRATION

REMOVED DETAIL CHANGES

None

LESS RESTRICTIVE CHANGES

L01 *(Category 2 – Relaxation of Applicability)* CTS 5.4.a.3 is applicable, in part, when there is fuel in the pool. ITS 3.7.14 is applicable when fuel assemblies are stored in the spent fuel pool and a spent fuel pool verification has not been performed since the last movement of fuel assemblies in the spent fuel pool. This changes the CTS by reducing the Applicability of the Spent Fuel Pool Boron Concentration Specification to only the time when fuel assemblies are stored in the spent fuel pool and a spent fuel pool verification has not been performed since the last movement of fuel assemblies in the spent fuel pool.

The purpose of CTS 5.4.a.3 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 spent fuel pool verification, there is no potential for criticality. Performing a spent fuel pool verification provides assurance that no fuel assemblies have been inadvertently misplaced in the spent fuel pool. This change is designated as less restrictive because the LCO requirements are applicable in fewer operating conditions than in the CTS.

L02 *(Category 1 – Relaxation of LCO Requirements)* CTS 5.4.a.3 requires the spent fuel pool boron concentration to match that in the refueling cavity and refueling canal during refueling operations or whenever there is fuel in the pool. Currently, the refueling cavity and refueling canal boron limit is provided in the COLR. The current COLR limit is ≥ 2500 ppm. ITS 3.7.14 requires the boron concentration of the spent fuel pool to be ≥ 240 ppm when fuel assemblies are stored in the spent fuel pool and a spent fuel pool verification has not been performed since the last movement of fuel assemblies in the spent fuel pool. This changes the CTS by reducing the LCO limit from the value specified in the COLR for the RCS during refueling operations (currently ≥ 2500 ppm) to ≥ 240 ppm. The change in the spent fuel pool boron concentration Applicability related to the pool itself (adding the spent fuel pool verification allowance) is discussed in DOC L01 and the Applicability related to "during REFUELING OPERATIONS" is covered in ITS 3.9.1.

The purpose of CTS 5.4.a.3 is to ensure adequate dissolved boron is in the fuel storage pool water to maintain the required subcriticality margin in the spent fuel pool during a dropped fuel assembly event and a misloaded fuel assembly event and to be consistent with the RCS boron concentration limit during refueling operations. 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 not connected to the RCS, the licensing basis analyses concluded no boron is needed to prevent a dropped fuel assembly criticality

DISCUSSION OF CHANGES
ITS 3.7.14, SPENT FUEL POOL BORON CONCENTRATION

event and 240 ppm of boron is needed to prevent a misloaded fuel assembly criticality event. These values were reviewed and concurred with by the NRC in the Safety Evaluation dated January 23, 2001 (ADAMS Accession No. ML010240051). This safety evaluation concerned the re-racking of the KPS spent fuel storage pool. Note that the boron concentration limit for the spent fuel pool when the pool is connected to the RCS during refueling will be controlled by ITS 3.9.1, and will remain the same as currently required. This change is designated as less restrictive because the LCO limit in the ITS for when the spent fuel pool is not connected to the RCS is less than that required in the CTS.

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

CTS

All changes are 1 unless otherwise noted

~~[~~Fuel ~~Storage~~ Spent Pool Boron Concentration~~]~~ 2
3.7.~~16~~ 14 3

3.7 PLANT SYSTEMS

3.7.~~16~~ 14 ~~[~~ Spent Fuel ~~Storage~~ Pool Boron Concentration ~~]~~ 3 2

5.4.a.3 LCO 3.7.~~16~~ 14 The spent fuel ~~storage~~ pool boron concentration shall be ≥ ~~[2300]~~ 240 ppm. 3 2 4

5.4.a.3 APPLICABILITY: When fuel assemblies are stored in the spent fuel ~~storage~~ pool and a spent fuel ~~storage~~ pool verification has not been performed since the last movement of fuel assemblies in the spent fuel ~~storage~~ pool.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
DOC M01 A. Spent ~~Fuel~~ 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 spent fuel ~~storage~~ pool.	Immediately
	<u>AND</u>	
	A.2.1 Initiate action to restore spent fuel ~~storage~~ pool boron concentration to within limit.	Immediately
	<u>OR</u>	
	A.2.2 Initiate action to perform a spent fuel ~~storage~~ pool verification.	Immediately

CTS

~~[~~ Spent Fuel ~~Storage~~ Pool Boron Concentration ~~]~~ 2 1

3.7.~~16~~ 14 3

SURVEILLANCE REQUIREMENTS

CTS	SURVEILLANCE		FREQUENCY	
Table TS 4.1-2 Item 6	SR 3.7.~~16~~ 14 .1	Verify the spent fuel ~~storage~~ pool boron concentration is within limit.	7 days	3 1

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.14, SPENT FUEL POOL BORON CONCENTRATION

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 ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

3. ISTS 3.7.16 has been renumbered to ITS 3.7.14 since ISTS 3.7.13 and ISTS 3.7.14 have not been included in the Kewaunee Power Station (KPS) ITS.

4. When the fuel storage pool is not connected to the RCS during refueling, the licensing basis analyses concluded no boron is needed to prevent a dropped bundle criticality event and 240 ppm of boron is needed to prevent a misloaded bundle criticality event. These values were reviewed and concurred with by the NRC in the Safety Evaluation dated January 23, 2001 (ADAMS Accession No. ML010240051). This safety evaluation concerned the re-racking of the KPS spent fuel storage pool. Therefore, the more limiting of the values (240 ppm) has been included in the ITS LCO.

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

All changes are 1 unless otherwise noted

Spent 14 2 6

B 3.7 PLANT SYSTEMS

B 3.7.~~16~~ [Fuel ~~Storage~~ Pool Boron Concentration]

14 Spent 6 2

BASES

INSERT 1

BACKGROUND

~~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 north and south pools (combined) 990 are 4.9776 The canal pool 215 15 within the Unacceptable Domain region 15 the north and south pools (combined) 2 2 6 2 6 4

The water in the spent fuel ~~storage~~ pool normally contains soluble boron, which results in large subcriticality margins under actual operating conditions. However, the NRC guidelines, based upon the accident condition in which all soluble poison is assumed to have been lost, specify that the limiting k_{eff} of 0.95 be evaluated in the absence of soluble boron. Hence, the design of ~~both regions~~ is based on the use of unborated water, which maintains each ~~region~~ in a subcritical condition during normal operation with the ~~regions~~ fully loaded. The double contingency principle discussed in ANSI N-16.1-1975 and the April 1978 NRC letter (Ref. ~~3~~) allows credit for soluble boron under other abnormal or accident conditions, since only a single accident need be considered at one time. For example, the most severe accident scenario is ~~associated with the movement of fuel from [Region 1 to Region 2], and accidental misloading of a fuel assembly in [Region 2]~~. This could potentially increase the ~~criticality~~ of ~~[Region 2]~~. To mitigate ~~these~~ postulated criticality related accident~~s~~, boron is dissolved in the pool water. Safe operation of ~~the MDR~~ with no movement of assemblies may therefore be achieved by controlling the location of each assembly in accordance with LCO 3.7.~~17~~, "Spent Fuel ~~Assembly~~ Storage." Prior to movement of an assembly, it is necessary to perform SR 3.7.~~16~~.1.

the spent fuel pool separate pool and the transfer canal three separate pools 2 3 the inadvertent placement of a fresh (unirradiated) fuel assembly into a location restricted to a burned assembly reactivity this 2 the north and south combined pools all three separate pools 15 6 Pool 6 14

1 **INSERT 1**

The spent fuel pool at Kewaunee Power Station (KPS) is comprised of three separate pools, a large south pool, a smaller north pool, and a third pool designated as the canal pool and a fuel transfer canal that are connected to one another to allow for movement of spent fuel (Ref. 1). The original spent fuel pool storage racks in the north and south pools have been replaced with high-density spent fuel racks, permitting a larger number of spent fuel assemblies to be stored in the pool. An additional storage pool (canal pool) was created at the north end of the fuel transfer canal. The spent fuel in the canal pool is limited to assemblies that have been discharged from the reactor core prior to or during the 1984 refueling outage.

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All changes are 1 unless otherwise noted

[Fuel ~~Storage~~ Pool Boron Concentration]
B 3.7.~~16~~

Spent 14 2 6

BASES

APPLICABLE SAFETY ANALYSES

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 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~~).

areas (the north and south pool racks and the canal pool racks)

areas

loaded in the canal pool racks

Holtec Report No. HI-992208

are

3 2 3 5

INSERT 2

The concentration of dissolved boron in the fuel ~~storage~~ pool satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii).

spent

LCO

The fuel ~~storage~~ pool boron concentration is required to be ≥ ~~[2300]~~ ppm. The specified concentration of dissolved boron in the fuel ~~storage~~ pool preserves the assumptions used in the analyses of the potential critical 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.

spent

240 2

3 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

The Required Actions are modified by a Note indicating that LCO 3.0.3 does not apply.

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1

INSERT 2

This report concluded a minimum of 240 ppm of boron is sufficient to ensure criticality does not occur during the worst case fuel loading accident in the spent fuel pool racks (i.e., a fuel assembly misloaded in the canal pool racks). This report also concluded that no boron was necessary to ensure subcriticality during a dropped fuel assembly event in the spent fuel pool.

All changes are 1 unless otherwise noted

[Fuel ~~Storage~~ Pool Boron Concentration] Spent 2
B 3.7.~~16~~ 14 6

BASES

ACTIONS (continued)

When the concentration of boron in the spent 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 movement of fuel assemblies. The concentration of boron is restored simultaneously with suspending movement of fuel assemblies. Alternatively, beginning a verification of the spent 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.

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~~.1 14 6

This SR verifies that the concentration of boron in the spent 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."~~ 1. USAR, Section 9.5.2.3.

~~2. Description and Evaluation for Proposed Changes to Facility Operating Licenses DPR-39 and DPR-48 (Zion Power Station).]~~ 2

2 ~~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

3 ~~4~~. ~~FSAR, Section [15.7.4]~~. License Amendment Request 167, dated 11/18/99, Attachment 5, Holtec Report No. HI-992208, "Licensing Report for Storage Capacity Expansion of the Kewaunee Nuclear Power Plant." 3 2

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.14 BASES, SPENT FUEL POOL BORON CONCENTRATION

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 ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

3. Reference 2 is deleted since it is not applicable to Kewaunee Power Station (KPS). The remaining references have been appropriately renumbered.

4. The spent fuel pool configuration at KPS consists of North and South Pools and a Canal Pool. Spent fuel assemblies of varying enrichment may be stored in the North and South Pools. However, with the creation of the Canal Pool, limitations on the enrichment of the spent fuel that could be stored in the Canal Pool were imposed via License Amendment 150 dated January 23, 2001 (ADAMS accession No. ML010240051). License Amendment 150 states that only assemblies which have been discharged prior to or during the 1984 refueling outage are permitted to be stored in the Canal Pool. License Amendment 150 also utilized the concept of burnup reactivity equivalencing for the storage of the spent fuel in the Canal Pool. This concept is based on the reactivity decrease associated with fuel depletion and has been previously found acceptable by the NRC for use in PWR fuel storage analysis. A series of reactivity calculations is performed to generate a set of enrichment versus burnup ordered pairs which yield an equivalent k_{eff} of less than 0.95 (approximately 0.945) for fuel stored in the storage racks. The requirements of ISTS 4.3.1.1.e and 4.3.1.1.f, which address the applicable discharge burnup limitations, are addressed in this LCO and are not addressed in Section 4.3 of the KPS ITS.

5. Typographical error corrected.

6. Changes made to be consistent with changes made to the Specifications.

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.14, SPENT FUEL POOL BORON CONCENTRATION

There are no specific NSHC discussions for this Specification.

ATTACHMENT 15

ITS 3.7.15, SPENT FUEL POOL STORAGE

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

ITS

A01

ITS 3.7.15

5.4 FUEL STORAGE

APPLICABILITY

Applies to the capacity and storage arrays of new and spent fuel.

OBJECTIVE

To define those aspects of fuel storage relating to prevention of criticality in fuel storage areas.

SPECIFICATION

a. Criticality

1. The spent fuel storage racks are designed and shall be maintained with the following:

   a. Fuel assemblies having a maximum enrichment of 56.067 grams Uranium-235 per axial centimeter

   b. k_{eff} < 0.95 if fully flooded with unborated water, which includes an allowance for uncertainties

See ITS 4.0

2. The new fuel storage racks are designed and shall be maintained with:

   a. Fuel assemblies having a maximum enrichment of 56.067 grams Uranium-235 per axial centimeter

   b. k_{eff} < 0.95 if fully flooded with unborated water, which includes an allowance for uncertainties

   c. k_{eff} < 0.98 if moderated by aqueous foam, which includes an allowance for uncertainties

3. The spent fuel pool is filled with borated water at a concentration to match that used in the reactor REFUELING cavity and REFUELING canal during REFUELING OPERATIONS or whenever there is fuel in the pool.

See ITS 3.7.14

b. Capacity

The spent fuel storage pool is designed with a storage capacity of 1205 assemblies and shall be limited to no more than 1205 fuel assemblies.

See ITS 4.0

c. Canal Rack Storage

LCO 3.7.15

Fuel assemblies stored in the canal racks shall meet the minimum required fuel assembly burnup as a function of nominal initial enrichment as shown in Figure TS 5.4-1. These assemblies shall also have been discharged prior to or during the 1984 REFUELING outage.

Add proposed Applicability — A02

Add proposed ACTION A — M01

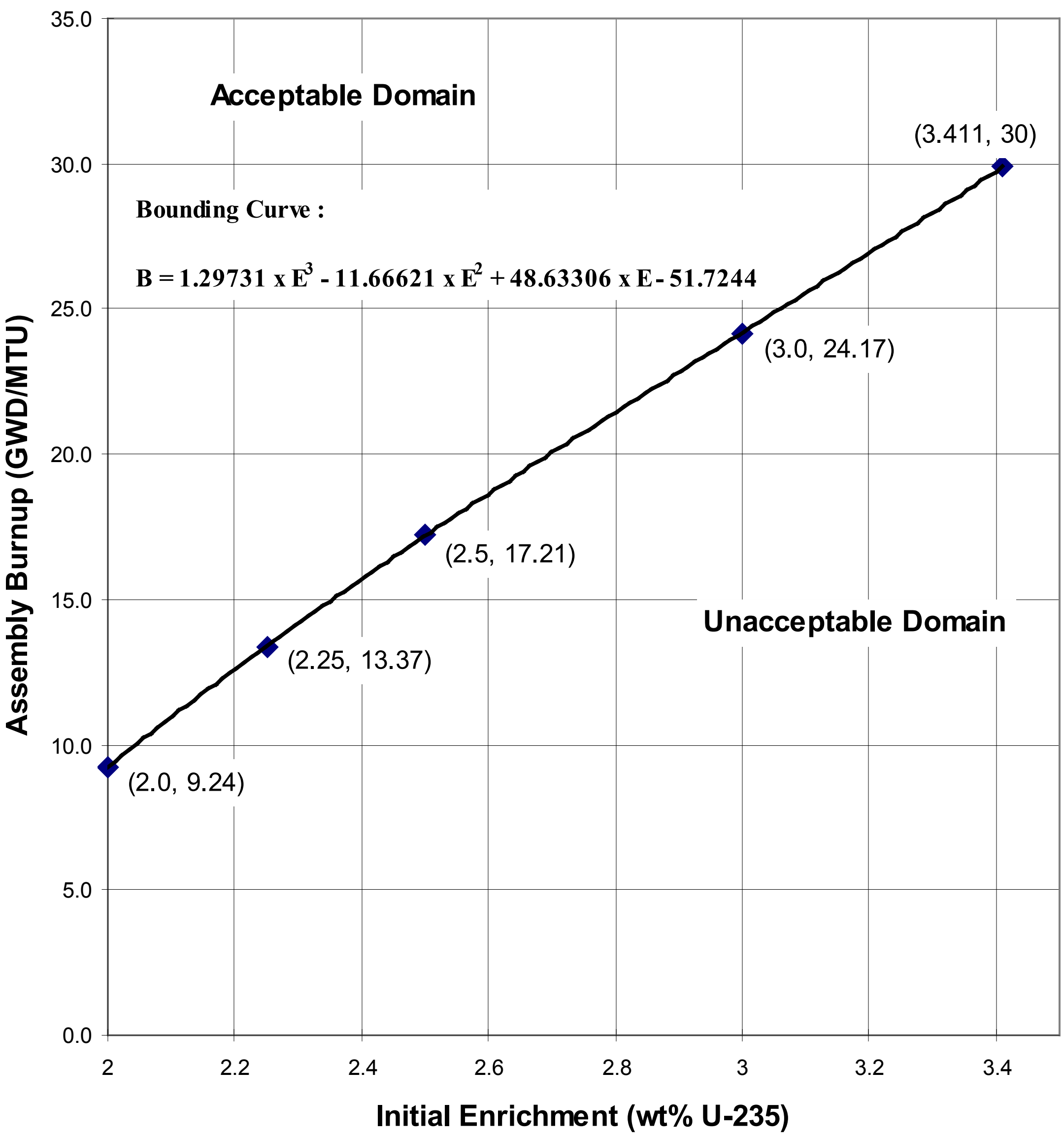
Add proposed SR 3.7.15.1 — M02

Figure
3.7.15-1

FIGURE TS 5.4-1

MINIMUM REQUIRED FUEL ASSEMBLY BURNUP AS A FUNCTION OF

NOMINAL INITIAL ENRICHMENT TO PERMIT STORAGE IN THE TRANSFER CANAL



DISCUSSION OF CHANGES
ITS 3.7.15, SPENT FUEL POOL STORAGE

ADMINISTRATIVE CHANGES

A01 In the conversion of the Kewaunee Power Station (KPS) 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. 3.0, "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.

A02 CTS 5.4.c does not provide any specific Applicability requirements for the storage of fuel assemblies in the canal rack portion of the spent fuel pool or any other portions of the spent fuel pool. ITS 3.7.15 requires the spent fuel pool storage requirements to be met whenever any fuel assembly is stored in the spent fuel pool. This changes the CTS by adding an explicit Applicability statement to address when the spent fuel pool storage requirements are required.

The spent fuel pool storage requirements are an integral part of controlling and maintaining the required subcriticality margin of the spent fuel assemblies within the spent fuel pool. Controlling the locations of the spent fuel assemblies stored in the spent fuel pool provides assurance that no fuel assemblies have been inadvertently misplaced in the spent fuel pool. This change is acceptable because the current requirement implies that it is applicable when fuel is stored in the spent fuel pool. This change is designated administrative because it does not result in any technical changes to the CTS.

MORE RESTRICTIVE CHANGES

M01 CTS 5.4.c does not provide any ACTIONS to take when the spent fuel pool storage requirements are not met. When the spent fuel pool storage requirements are not met, ITS 3.7.15, ACTION A requires the immediate initiation of action to move the non-complying fuel assembly to an acceptable location. This changes the CTS by providing specific ACTIONS when the spent fuel pool storage requirements are not met.

The purpose of CTS 5.4.c is to ensure the spent fuel pool storage requirements are met to maintain the required subcriticality margin. ITS 3.7.15, ACTION A provides an action to restore the LCO requirement by immediately initiating action to move the non-complying fuel assembly to an acceptable location. The proposed Required Action reflects the importance of maintaining the spent fuel pool storage requirements. This change is acceptable because the Required Action is used to establish remedial measures that must be taken in response to the degraded condition in order to minimize risk associated with continued operation. This change is designated more restrictive because a new proposed ACTION has been added.

M02 CTS 5.4.c does not provide any Surveillance Requirements for verification of the spent fuel pool storage requirements. ITS SR 3.7.15.1 requires, prior to storing

DISCUSSION OF CHANGES
ITS 3.7.15, SPENT FUEL POOL STORAGE

the fuel assembly in the spent fuel pool, verification by administrative means of the initial enrichment and burnup of the fuel assembly in accordance with the requirements of Figure 3.7.15-1. This changes the CTS by adding a specific Surveillance Requirement to verify the LCO requirements are met.

The purpose of ITS SR 3.7.15.1 is to verify, prior to storing the fuel assembly in the spent fuel pool, the initial enrichment and burnup of the fuel assembly is in accordance with the requirements of the LCO. The spent fuel pool storage requirements are an integral part of controlling and maintaining the required subcriticality margin of the spent fuel assemblies within the spent fuel pool. Verification of proper placement of fuel assemblies in the spent fuel pool ensures the k_{eff} of the spent fuel pool will remain < 0.95, as analyzed in the accident analyses. This change is acceptable and more restrictive because a new Surveillance Requirement has been added.

<u>RELOCATED SPECIFICATIONS</u>

None

<u>REMOVED DETAIL CHANGES</u>

None

<u>LESS RESTRICTIVE CHANGES</u>

None

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

CTS

All changes are 1 unless otherwise noted

[Spent Fuel Pool Storage]
3.7.~~17~~ 15 4

3.7 PLANT SYSTEMS

3.7.~~17~~ 15 [Spent Fuel Pool Storage] 4

5.4.c LCO 3.7.~~17~~ 15 The combination of initial enrichment and burnup of each fuel assembly stored in ~~[Region 2] shall be within the Acceptable [Burnup Domain] of Figure 3.7.17-1 or in accordance with Specification 4.3.1.1.~~ INSERT 1 4 2

DOC A02 APPLICABILITY: Whenever any fuel assembly is stored in ~~[Region 2] of~~ the spent fuel ~~storage~~ pool. 2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
DOC M01 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]~~ to an acceptable location.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
DOC M02 SR 3.7.~~17~~ 15 .1 Verify by administrative means the initial enrichment and burnup of the fuel assembly is in accordance with Figure 3.7.~~17~~ 15 -1 ~~or Specification 4.3.1.1~~.	Prior to storing the fuel assembly in ~~[Region 2]~~ the spent fuel pool 4 4 3

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2 **INSERT 1**

the spent fuel pool shall be in accordance with the following:

a. Irradiated fuel assemblies discharged prior to or during the 1984 refueling outage with a combination of burnup and initial nominal enrichment in the "Acceptable Domain" of Figure 3.7.15-1 shall be stored in the transfer canal spent fuel pool or the north and south combined spent fuel pools; and

b. New fuel assemblies, irradiated fuel assemblies discharged after the 1984 refueling outage, and irradiated fuel assemblies discharged prior to or during the 1984 refueling outage with a combination of burnup and initial nominal enrichment in the "Unacceptable Domain" of Figure 3.7.15-1, shall be stored in the north and south combined spent fuel pools.

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CTS

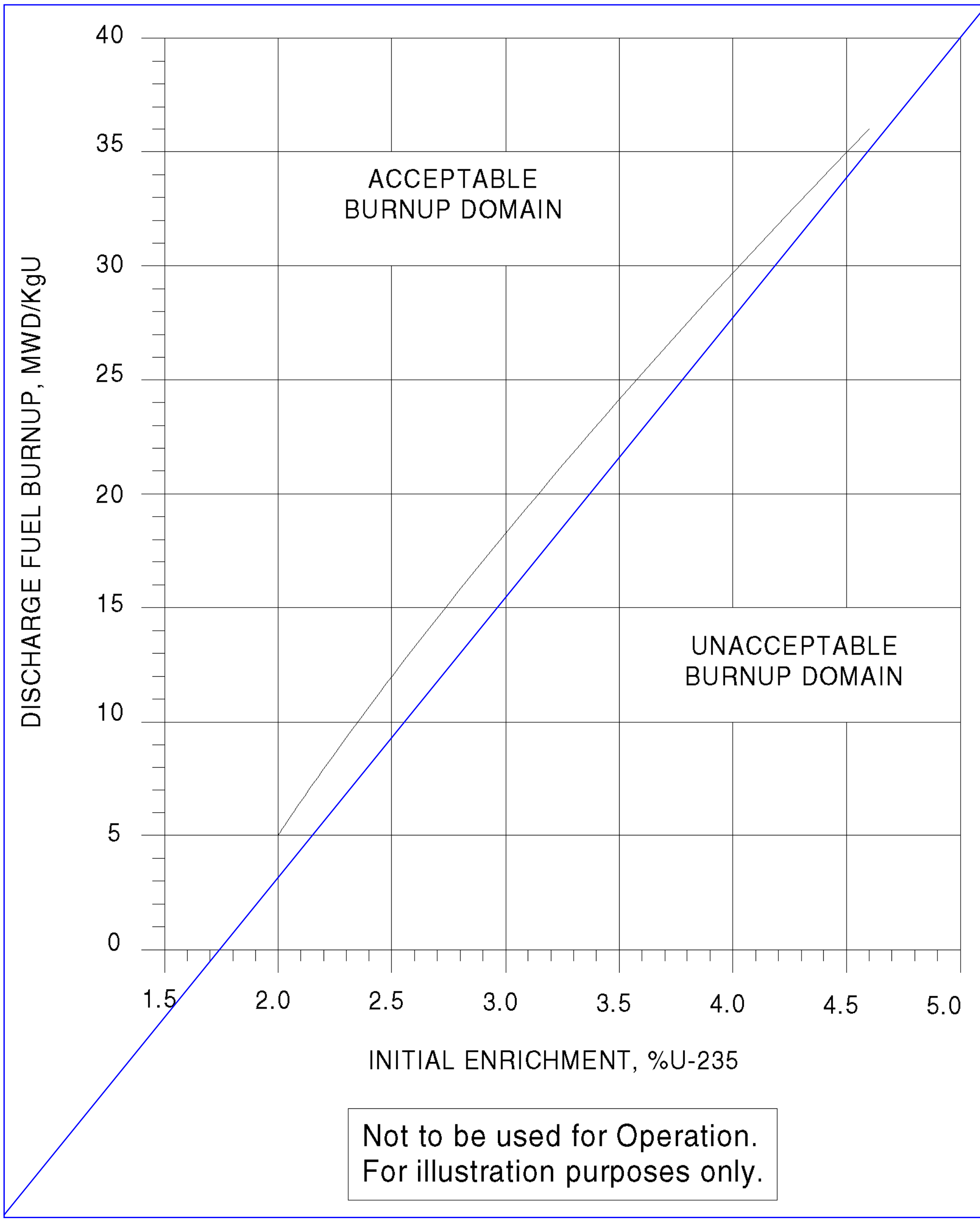
[Spent Fuel Pool Storage]
3.7.~~17~~

15

1

4

Figure TS 5.4-1



2

INSERT 2

15

Figure 3.7.~~17~~-1 (page 1 of 1)
Fuel Assembly Burnup Limits in ~~Region 2~~

the Spent Fuel Pools

4

2

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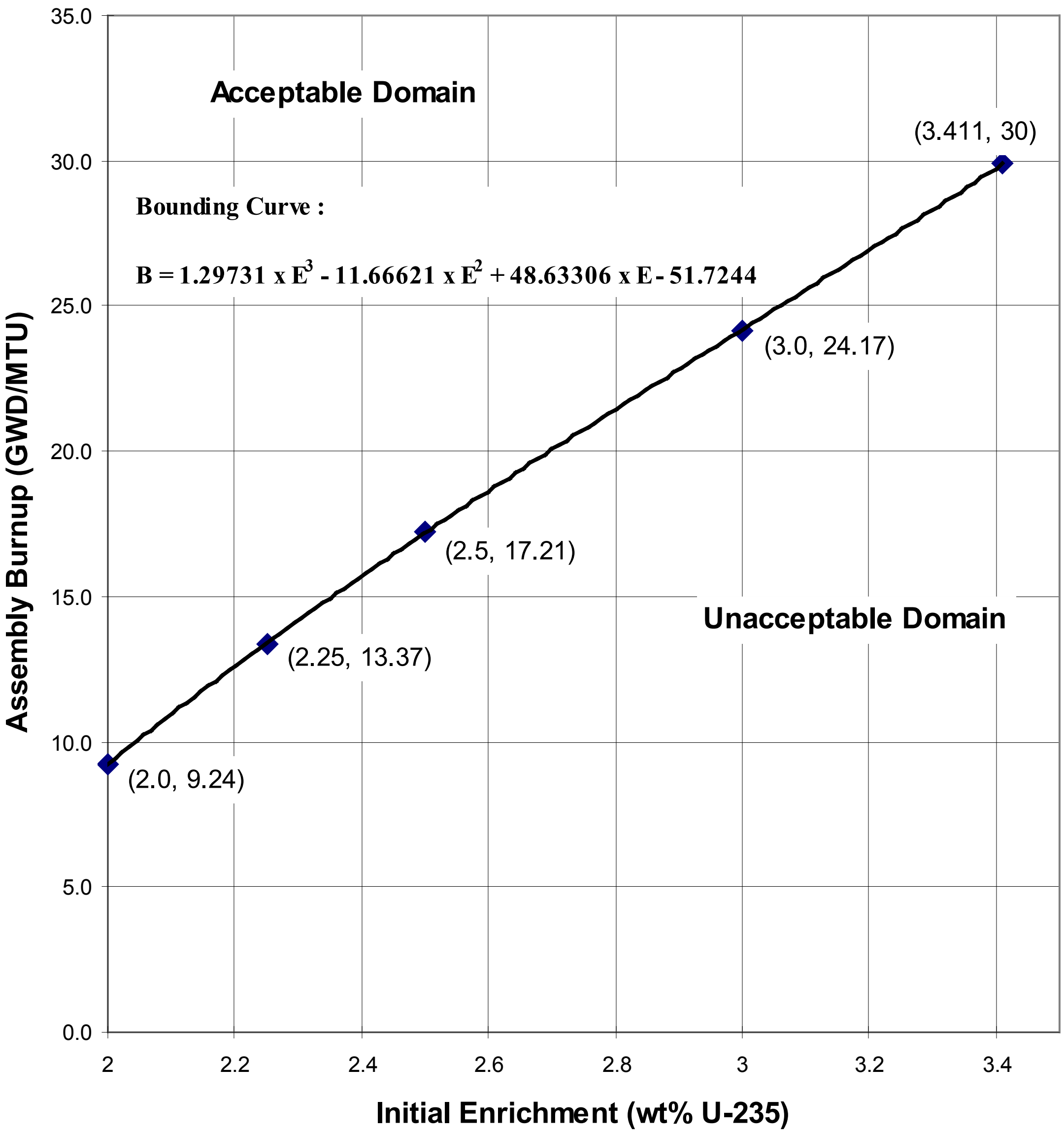
2 **INSERT 2**


Acceptable Domain
Bounding Curve :
B = 1.29731 x E^3 - 11.66621 x E^2 + 48.63306 x E - 51.7244
(3.411, 30)
(3.0, 24.17)
(2.5, 17.21)
(2.25, 13.37)
(2.0, 9.24)
Unacceptable Domain
Assembly Burnup (GWD/MTU)
Initial Enrichment (wt% U-235)
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
2
2.2
2.4
2.6
2.8
3
3.2
3.4

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.15, SPENT FUEL POOL STORAGE

1. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

2. 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.

3. The spent fuel pool configuration at Kewaunee Power Station (KPS) consists of North and South Pools and a Canal Pool. Spent fuel assemblies of varying enrichment may be stored in the North and South Pools. However, with the creation of the Canal Pool, limitations on the enrichment of the spent fuel that could be stored in the Canal Pool were imposed via License Amendment 150 dated January 23, 2001 (ADAMS accession No. ML010240051). License Amendment 150 states that only assemblies which have been discharged prior to or during the 1984 refueling outage are permitted to be stored in the Canal Pool. License Amendment 150 also utilized the concept of burnup reactivity equivalencing for the storage of the spent fuel in the Canal Pool. This concept is based on the reactivity decrease associated with fuel depletion and has been previously found acceptable by the NRC for use in PWR fuel storage analysis. A series of reactivity calculations is performed to generate a set of enrichment versus burnup ordered pairs which yield an equivalent k_{eff} of less than 0.95 (approximately 0.945) for fuel stored in the storage racks. The requirements of ISTS 4.3.1.1.e and 4.3.1.1.f, which address the applicable discharge burnup limitations, are addressed in this LCO and are not addressed Section 4.3 of the KPS ITS.

4. ISTS 3.7.17 has been renumbered to ITS 3.7.15 since ISTS 3.7.13 and ISTS 3.7.14 have not been included in the Kewaunee Power Station (KPS) ITS.

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

All changes are 1 unless otherwise noted

B 3.7 PLANT SYSTEMS

B 3.7.17 [Spent Fuel Pool Storage] 5 2

15

BASES

INSERT 1

BACKGROUND

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 north and south pools (combined) · 990 · are · 4.9776 · The canal pool 2 · which have been discharged prior to or during the 1984 refueling outage and · 215 · 15 · within the Unacceptable Domain region · 15 · 2 · 2 · 5 · 4 · New fuel assemblies, spent fuel assemblies which have been discharged after the 1984 outage, or spent · the north and south pools (combined)

The water in the spent fuel storage pool normally contains soluble boron, which results in large subcriticality margins under actual operating conditions. However, the NRC guidelines, based upon the accident condition in which all soluble poison is assumed to have been lost, specify that the limiting k_{eff} of 0.95 be evaluated in the absence of soluble boron. Hence, the design of both regions is based on the use of unborated water, which maintains each region in a subcritical condition during normal operation with the regions fully loaded. The double contingency principle discussed in ANSI N-16.1-1975 and the April 1978 NRC letter (Ref. 3) allows credit for soluble boron under other abnormal or accident conditions, since only a single accident need be considered at one time. For example, the most severe accident scenario is associated with the movement of fuel from [Region 1 to Region 2], and accidental misloading of a fuel assembly in [Region 2]. This could potentially increase the criticality of [Region 2]. To mitigate these postulated criticality related accidents, boron is dissolved in the pool water. Safe operation of the MDR with no movement of assemblies may therefore be achieved by controlling the location of each assembly in accordance with the accompanying LCO. Prior to movement of an assembly, it is necessary to perform SR 3.7.16.1.

the spent fuel pool · separate pool and the transfer canal · three separate pools · 2 · 3 · the inadvertent placement of a fresh (unirradiated) fuel assembly into a location restricted to a burned assembly · reactivity · this · 2 · the north and south combined pools · all three separate pools · 5 · 14

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1 **INSERT 1**

The spent fuel pool at Kewaunee Power Station (KPS) is comprised of three separate pools, a large south pool, a smaller north pool, and a third pool designated as the canal pool and a fuel transfer canal that are connected to one another to allow for movement of spent fuel (Ref. 1). The original spent fuel pool storage racks in the north and south pools have been replaced with high-density spent fuel racks, permitting a larger number of spent fuel assemblies to be stored in the pool. An additional storage pool (canal pool) was created at the north end of the fuel transfer canal. The spent fuel in the canal pool is limited to assemblies that have been discharged from the reactor core prior to or during the 1984 refueling outage.

All changes are 1 unless otherwise noted

BASES

APPLICABLE SAFETY ANALYSES

The hypothetical accidents can only take place during or as a result of the movement of an assembly (Ref. 4). ~~For these accident occurrences, the presence of soluble boron in the spent fuel storage pool (controlled by LCO 3.7.16, "Fuel Storage Pool Boron Concentration") prevents criticality in both regions.~~ By closely controlling the movement of each assembly 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 spent 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 3.7.15-1, 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. Irradiated fuel assemblies discharged prior to or during the 1984 refueling outage with a combination of burnup and initial nominal enrichment in the Acceptable Domain of Figure 3.7.15-1 are allowed to be stored in the transfer canal spent fuel pool or the north and south combined spent fuel pools. New fuel assemblies, irradiated fuel assemblies discharged after the 1984 refueling outage, or spent Fuel assemblies not in the Acceptable Domain ~~meeting the criteria~~ of Figure 3.7.15-1 shall be stored in the north or south pools (combined) ~~accordance with Specification 4.3.1.1 in Section 4.3~~.

APPLICABILITY

This LCO applies whenever any fuel assembly is stored in ~~[Region 2] of~~ the spent fuel ~~storage~~ pool.

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]~~ the spent fuel ~~storage~~ pool is not in accordance with LCO 3.7.15 and Figure 3.7.15-1, ~~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 LCO 3.7.15 and Figure 3.7.15-1 ~~or Specification 4.3.1.1~~.

If unable to move irradiated fuel assemblies while in MODE 5 or 6, LCO 3.0.3 would not be applicable. If unable to move irradiated fuel assemblies while in MODE 1, 2, 3, or 4, the action is independent of reactor operation. Therefore, inability to move fuel assemblies is not sufficient reason to require a reactor shutdown.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.17.1 5
15

This SR verifies by administrative means that the initial enrichment and burnup of the fuel assembly is in accordance with Figure [3.7.17-1] in the accompanying LCO. ~~For fuel assemblies in the unacceptable range of Figure 3.7.17-1, performance of this SR will ensure compliance with Specification 4.3.1.1.~~ 15 2 4

REFERENCES

~~[1. Callaway FSAR, Appendix 9.1A, "The Maximum Density Rack (MDR) Design Concept."~~ 1. USAR, Section 9.5.2.3.

~~2. Description and Evaluation for Proposed Changes to Facility Operating Licenses DPR-39 and DPR-48 (Zion Power Station).]~~ 2

2 ~~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

3 ~~4~~. U ~~F~~SAR, Section ~~[15.7.4]~~ 14.2.1. 3 1 2

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JUSTIFICATION FOR DEVIATIONS
ITS 3.7.15 BASES, SPENT FUEL POOL STORAGE

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 ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

3. Reference 2 is deleted since it is not applicable to Kewaunee Power Station (KPS). The remaining references have been appropriately renumbered.

4. The spent fuel pool configuration at KPS consists of a North and South Pool and a Canal Pool. Spent fuel assemblies of varying enrichment may be stored in the North and South Pools. However, with the creation of the Canal Pool, limitations on the enrichment of the spent fuel that could be stored in the Canal Pool were imposed via License Amendment 150 dated January 23, 2001 (ADAMS accession No. ML010240051). License Amendment 150 states that only assemblies which have been discharged prior to or during the 1984 refueling outage are permitted to be stored in the Canal Pool. License Amendment 150 also utilized the concept of burnup reactivity equivalencing for the storage of the spent fuel in the Canal Pool. This concept is based on the reactivity decrease associated with fuel depletion and has been previously found acceptable by the NRC for use in PWR fuel storage analysis. A series of reactivity calculations is performed to generate a set of enrichment versus burnup ordered pairs which yield an equivalent k_{eff} of less than 0.95 (approximately 0.945) for fuel stored in the storage racks. The requirements of ISTS 4.3.1.1.e and 4.3.1.1.f, which address the applicable discharge burnup limitations, are addressed in this LCO and are not addressed Section 4.3 of the KPS ITS.

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

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.15, SPENT FUEL POOL STORAGE

There are no specific NSHC discussions for this Specification.

ATTACHMENT 16

ITS 3.7.16, SECONDARY SPECIFIC ACTIVITY

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

ITS

A01

ITS 3.7.16

c. Condensate Storage Tank

1. The Reactor Coolant System shall not be heated > 350°F unless a minimum usable volume of 41,500 gallons of water is available in the condensate storage tanks.

2. If the Reactor Coolant System temperature is > 350°F and a minimum usable volume of 41,500 gallons of water is not available in the condensate storage tanks, reactor operation may continue for up to 48 hours.

3. If the time limit of TS 3.4.c.2 above cannot be met, within 1 hour initiate action to:

- Achieve HOT STANDBY within 6 hours
- Achieve HOT SHUTDOWN within the following 6 hours
- Achieve and maintain the Reactor Coolant System temperature < 350°F within an additional 12 hours.

See ITS 3.7.6

d. Secondary Activity Limits

Add proposed MODE 4 Applicability

M01

Applicability

LCO 3.7.16

1. The Reactor Coolant System shall not be heated > 350°F unless the DOSE EQUIVALENT Iodine-131 activity on the secondary side of the steam generators is ≤ 0.1 μCi/gram.

2. ~~When the Reactor Coolant System temperature is > 350°F, the DOSE EQUIVALENT Iodine-131 activity on the secondary side of the steam generators may exceed 0.1 μCi/gram for up to 48 hours.~~

M02

ACTION A

3. If the requirement of TS 3.4.d.2 cannot be met, then within 1 hour action shall be initiated to:

- Achieve HOT STANDBY within 6 hours
- Achieve HOT SHUTDOWN within the following 6 hours

M03

- ~~Achieve and maintain the Reactor Coolant System temperature < 350°F within an additional 12 hours.~~

L03

Add proposed Required Action A.2

M01

TABLE TS 4.1-2

MINIMUM FREQUENCIES FOR SAMPLING TESTS

See ITS 3.5.1

See ITS 3.7.14

See ITS 3.5.4

SAMPLING TESTS	TEST	FREQUENCY
3. Refueling Water Storage Tank Water Sample(7)	Boron Concentration	Monthly(8)
4. Deleted		
5. Accumulator	Boron Concentration	Monthly
6. Spent Fuel Pool	Boron Concentration	Monthly(9)
7. Secondary Coolant	a. Gross Beta or Gamma Activity	Weekly
	b. Iodine Concentration	Weekly when gross beta or gamma activity ≥ 0.1 μCi/gram

SR 3.7.16.1

Every 31 days

L02

L01

(7) A refueling water storage tank (RWST) boron concentration sample does not have to be taken when the RWST is empty during REFUELING outages.
(8) And after adjusting tank contents.
(9) Sample will be taken monthly when fuel is in the pool.

See ITS 3.5.4

See ITS 3.7.14

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DISCUSSION OF CHANGES
ITS 3.7.16, SECONDARY SPECIFIC ACTIVITY

ADMINISTRATIVE CHANGES

A01 In the conversion of the Kewaunee Power Station (KPS) 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. 3.0, "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

M01 The CTS 3.4.d Applicability of the Secondary Activity Limits is that the Reactor Coolant System shall not be heated > 350°F unless the DOSE EQUIVALENT Iodine-131 activity on the secondary side of the steam generators is ≤ 0.1 μCi/gram. In the ITS, this is MODES 1, 2, and 3. ITS 3.7.16 requires the specific activity of the secondary coolant to be ≤ 0.1 μCi/gram DOSE EQUIVALENT I-131 in MODES 1, 2, 3, and 4. Consistent with this change in Applicability, the requirement to be in MODE 5 within 36 hours is added as indicated in Required Action A.2. This changes the CTS by requiring the specific activity of the secondary coolant be within limit when the RCS average temperature is > 200°F and < 350°F (i.e., ITS MODE 4) and provides a Required Action to place the unit outside the Applicability.

The purpose of CTS 3.4.d is to ensure that the specific activity of the secondary side of the steam generators is within the assumptions of the accident analyses. The addition of MODE 4 is acceptable since an accident could occur that could cause a release of radioactive material to the environment. The limits on secondary specific activity apply in ITS MODES 1, 2, 3, and 4 due to the potential for secondary steam releases to the atmosphere. Furthermore, a new Required Action has been added to place the unit in a MODE outside the new Applicability. The purpose of Required Action A.2 is to place the unit in a condition in which the LCO does not apply. 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 36 hours to be in MODE 5 ensures a unit shutdown is commenced and completed within a reasonable period of time upon failure to restore the secondary coolant specific activity limit to ≤ 0.1 μCi/gm within the allowed Completion Time. This change is more restrictive because a new Applicability containing MODE 4 and an associated Required Action to exit the new Applicability has been added.

M02 CTS 3.4.d.2 states that when the Reactor Coolant System temperature is greater than 350°F, the DOSE EQUIVALENT I-131 activity on the secondary side of the steam generators may exceed 0.1 μCi/gram for up to 48 hours. ITS 3.7.16 ACTION A requires a unit shutdown, no time is provided for restoration of the DOSE EQUIVALENT I-131 activity to within limit prior to requiring a unit

DISCUSSION OF CHANGES
ITS 3.7.16, SECONDARY SPECIFIC ACTIVITY

shutdown. This changes the CTS by deleting the time allowed to restore the DOSE EQUIVALENT I-131 activity to within limit prior to requiring a unit shutdown (i.e., reduces the time from 48 hours to 0 hours).

The purpose of CTS 3.4.d.2 is to provide time to restore the DOSE EQUIVALENT I-131 activity to within limit before requiring a unit shutdown. However, the 48 hour time allowed in the CTS to restore the activity level to within limit will not be allowed in the ITS since a DOSE EQUIVALENT I-131 activity level exceeding the limit is an indication of a problem in the RCS, that if allowed to continue would not minimize the radiological consequences of a Design Basis Accident (DBA). This change is acceptable since the ITS ACTION requires a unit shutdown to commence sooner when the DOSE EQUIVALENT I-131 activity level exceeds its limit. This change is designated as more restrictive since the ITS will require a unit shutdown to commence sooner than in the CTS.

M03 CTS 3.4.d.3, in part, requires that if the DOSE EQUIVALENT I-131 activity on the secondary side of the steam generators is not restored to within limit within 48 hours, then, within 1 hour, initiate action to achieve HOT STANDBY within 6 hours and HOT SHUTDOWN within the following 6 hours. Under similar conditions (i.e., secondary activity not within limit) ITS 3.7.16 Required Action A.1 requires that the unit to be in MODE 3 (equivalent to CTS HOT SHUTDOWN) within 6 hours. This changes the time required to be in MODE 3 from 13 hours to 6 hours and deletes the requirement to be in MODE 2 within 7 hours.

The purpose of CTS 3.4.d.3 is to place the unit in a condition in which the LCO does not apply. This change is acceptable because 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. Allowing 6 hours to be in MODE 3 in lieu of the current 13 hours ensures a unit shutdown is commenced within a reasonable period of time upon failure of the DOSE EQUIVALENT I-131 activity level to be within its limit. Additionally, since ITS 3.7.16 Required Action A.1 requires the unit to be in MODE 3 within 6 hours, there is no need to maintain the requirement to be MODE 2 within 7 hours. This change is designated as more restrictive because less time is allowed for the unit to reach MODE 3 than was allowed in the CTS.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

None

DISCUSSION OF CHANGES
ITS 3.7.16, SECONDARY SPECIFIC ACTIVITY

LESS RESTRICTIVE CHANGES

L01 *(Category 5 – Deletion of Surveillance Requirement)* CTS Table TS 4.1-2 Sampling Test 7 requires the secondary coolant be tested for gross beta and gamma activity on a weekly basis. ITS 3.7.16 does not contain this Surveillance Requirement. This changes the CTS by deleting this Surveillance Requirement.

The purpose of CTS Table TS 4.1-2 Sampling Test 7 is to sample the secondary coolant on a weekly basis to measure the gross beta or gamma activity and to determine the need for sampling for secondary coolant DOSE EQUIVALENT I-131. 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 analyses since the gross beta or gamma activity of the secondary coolant is not used in the accident analyses. Thus, appropriate values (i.e., the secondary coolant DOSE EQUIVALENT I-131) continue to be tested in a manner and at a Frequency necessary to give confidence that the assumptions in the safety analyses are protected since the secondary coolant DOSE EQUIVALENT I-131 is used in the accident analyses. ITS SR 3.7.16.1 requires the DOSE EQUIVALENT I-131 to be determined every 31 days. This change is designated as less restrictive because a Surveillance that is required in the CTS will not be required in the ITS.

L02 *(Category 7 – Relaxation of Surveillance Frequency)* CTS Table TS 4.1-2 Sampling Test 7 requires the secondary coolant be tested for iodine concentration on a weekly basis when the gross beta and gamma activity is ≥ 0.1 μCi/gram. ITS SR 3.7.16.1 requires a verification of the specific activity of the secondary coolant for iodine concentration every 31 days. This changes the CTS by changing the Surveillance Frequency from weekly under certain conditions to once every 31 days.

The purpose of CTS Table TS 4.1-2 Sampling Test 7 is to verify the specific activity of the secondary coolant DOSE EQUIVALENT I-131 is within limit to satisfy the LCO. The performance of the Surveillance Requirement confirms the validity of the safety analyses assumptions as to the source terms in post accident releases. The Surveillance Requirement also serves to identify and trend any unusual isotopic concentrations that might indicate changes in reactor coolant activity. This change in Surveillance Frequency is acceptable because the 31 day Frequency provides a reliable indication of any increasing trends of the level of DOSE EQUIVALENT I-131 and allows appropriate action to be taken to maintain levels below the LCO limit. This change is designated as less restrictive because the Surveillance could be performed less frequently under the ITS than under the CTS.

L03 *(Category 4 – Relaxation of Required Action)* CTS 3.4.d.3 requires that if the requirement of CTS 3.4.d.2 cannot be met, then, within 1 hour, initiate action to achieve HOT STANDBY within 6 hours, HOT SHUTDOWN within the following 6 hours, and reduce the Reactor Coolant System temperature < 350°F within an additional 12 hours. ITS 3.7.16 ACTION A requires that the unit be in MODE 3 (equivalent to CTS HOT SHUTDOWN) within 6 hours and to be in MODE 5 (equivalent to CTS COLD SHUTOWN) within 36 hours. This change deletes the

DISCUSSION OF CHANGES
ITS 3.7.16, SECONDARY SPECIFIC ACTIVITY

requirement to reduce RCS temperature to < 350°F (equivalent to ITS MODE 4). A discussion for the addition of MODE 5 is located in DOC M01.

The purpose of CTS 3.4.d.3 is to place the unit in a condition in which the LCO does not apply. ITS 3.7.16 ACTION A requires the unit to be in MODE 3 within 6 hours, as discussed in DOC M03, and in MODE 5 within 36 hours, as discussed in DOC M01. Placing the unit in MODE 3 ensures the unit is in a subcritical condition, and placing the unit in MODE 5 places the unit outside the Applicability of the LCO. Therefore, there is no reason to require placing the unit in an intermediate shutdown condition (i.e., < 350°F). This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the allowed Completion Time. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

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

3.7 PLANT SYSTEMS 2

3.7.18 6 Secondary Specific Activity

3.4.d.1 LCO 3.7.18 The specific activity of the secondary coolant shall be ≤ [0.10] μCi/gm DOSE EQUIVALENT I-131. 2 1

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

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
3.4.d.3, DOC M01	A. Specific activity not within limit.	A.1 Be in MODE 3.	6 hours
		AND	
		A.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
Table TS 4.1-2, Sampling Test 7	SR 3.7.18.1 6	Verify the specific activity of the secondary coolant is ≤ [0.10] μCi/gm DOSE EQUIVALENT I-131.	31 days	2 1

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.16, SECONDARY SPECIFIC ACTIVITY

1. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

2. ISTS 3.7.18 has been renumbered to ITS 3.7.16 since ISTS 3.7.13 and ISTS 3.7.14 have not been included in the Kewaunee Power Station (KPS) ITS.

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

B 3.7 PLANT SYSTEMS

B 3.7.1~~8~~ 6 Secondary Specific Activity 5

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, and accidents.

This limit is lower than the activity value that might be expected from a 1 gpm tube leak (LCO 3.4.13, "RCS Operational LEAKAGE") of primary coolant at the limit of ~~[~~1.0~~]~~ μCi/gm (LCO 3.4.16, "RCS Specific Activity"). 1
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~~ total effective dose equivalent (TEDE) dose to a person at the exclusion area boundary (EAB) would be about ~~0.58~~ 0.03 rem if the ~~main steam safety valves (MSSVs)~~ steam generator power-operated relief valves (PORVs) open for 2 hours following a trip from full power. 2

Operating a unit at the allowable limits could result in a 2 hour EAB exposure of a small fraction of the 10 CFR ~~100~~ 50.67 (Ref. 1) limits, or the limits established as the NRC staff approved licensing basis. 3

APPLICABLE SAFETY ANALYSES

The accident analysis of the main steam line break (MSLB), as discussed in the ~~F~~ U SAR, Chapter ~~[15]~~ 14 (Ref. 2) assumes the initial secondary coolant specific activity to have a radioactive isotope concentration of ~~[~~0.10~~]~~ μCi/gm DOSE EQUIVALENT I-131. This assumption is used in the analysis for determining the radiological consequences of the postulated accident. The accident analysis, based on this and other assumptions, shows that the radiological consequences of an MSLB do not exceed a small fraction of the unit EAB limits (Ref. 1) for ~~whole body and thyroid~~ TEDE dose rates. 2 1 1 2

BASES

APPLICABLE SAFETY ANALYSES (continued)

be placed in service. The RHR System then continues to cooldown to 212°F, at which point the release is terminated.

is

With the loss of offsite power, the remaining steam generator~~s~~ ~~are~~ available for core decay heat dissipation by venting steam to the atmosphere through the main steam safety valves (MSSVs) ~~MSSVs~~ and steam generator ~~atmospheric dump valves (ADVs)~~ PORVs. 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 (RHR) System to ~~complete the cooldown.~~ 4 2 2

In the evaluation of the radiological consequences of this accident, the activity released from the steam generator connected to the failed steam line is assumed to be released directly to the environment. The unaffected steam generator is assumed to discharge steam and any entrained activity through the MSSVs and ~~ADVs~~ PORVs 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. 2

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 limit (Ref. 1). 1

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 normally 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. 6

BASES

ACTIONS

A.1 and A.2

DOSE EQUIVALENT I-131 exceeding the allowable value in the secondary coolant, is an indication of a problem in the RCS and contributes to increased post accident doses. If the secondary specific activity 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.

SURVEILLANCE REQUIREMENTS

SR 3.7.1~~8~~.1 6 5

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~~. 50.67 3
2. ~~F~~SAR, Chapter ~~[15]~~. U 14 1

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.16 BASES, SECONDARY SPECIFIC ACTIVITY

1. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

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

3. Changes are made to the ISTS Bases which reflect the Kewaunee Power Station (KPS) design. License Amendment 166, issued March 17, 2003, revised the radiological consequence analyses for the KPS design basis accidents to implement the alternate source term (AST) as described in Regulatory Guide 1.183, "Alternative Radiological Source Terms for Evaluating Design-Basis Accidents at Nuclear Power Reactors" and pursuant to 10 CFR 50.67, "Accident Source Term."

4. The ISTS Bases is written for the various (i.e., two loop, three loop, and four loop) designs of Westinghouse pressurized water reactors. KPS is a two loop plant and has two steam generators. As a result, the ISTS verbiage "generators are" in the Applicable Safety Analyses section is revised appropriately to "generator is" to reflect the fact that KPS has a total of two steam generators and only one remains available if one is unavailable.

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

6. ITS 3.4.7, which is applicable in MODE 5, allows the use of a steam generator as a backup method for decay heat removal. Therefore, the word "normally" has been added.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.16, SECONDARY SPECIFIC ACTIVITY

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 17

RELOCATED/DELETED CURRENT TECHNICAL SPECIFICATIONS

CTS 3.8.a.9, SPENT FUEL POOL SWEEP SYSTEM

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

CTS 3.8.a.9

6. Direct communication between the control room and the operating floor of the containment shall be available whenever changes in core geometry are taking place. See CTS 3.8.a.6

7. ~~Deleted.~~

8. The containment ventilation and purge system, including the capability to initiate automatic containment ventilation isolation, shall be tested and verified to be operable immediately prior to and daily during REFUELING OPERATIONS. See ITS 3.9.6

9. a. ~~The spent fuel pool sweep system, including the charcoal adsorbers, shall be operating during fuel handling and when any load is carried over the pool if irradiated fuel in the pool has decayed less than 30 days. If the spent fuel pool sweep system, including the charcoal adsorber, is not operating when required, fuel movement shall not be started (any fuel assembly movement in progress may be completed).~~

   b. ~~Performance Requirements~~

      1. ~~The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show $\geq$99% DOP removal and $\geq$99% halogenated hydrocarbon removal.~~

      2. ~~The results of laboratory carbon sample analysis from spent fuel pool sweep system carbon shall show $\geq$95% radioactive methyl iodide removal when tested in accordance with ASTM D3803-89 at conditions of 30°C and 95% RH.~~

      3. ~~Fans shall operate within $\pm$10% of design flow when tested.~~

R01

10. The minimum water level above the vessel flange shall be maintained at 23 feet. See ITS 3.9.5

11. A dead-load test shall be successfully performed on both the fuel handling and manipulator cranes before fuel movement begins. The load assumed by the cranes for this test must be equal to or greater than the maximum load to be assumed by the cranes during the REFUELING OPERATIONS. A thorough visual inspection of the cranes shall be made after the dead-load test and prior to fuel handling. See CTS 3.8.a.11

12. A licensed senior reactor operator will be on-site and designated in charge of the REFUELING OPERATIONS. See CTS 3.8.a.12

b. If any of the specified limiting conditions for REFUELING OPERATIONS are not met, refueling of the reactor shall cease. Work shall be initiated to correct the violated conditions so that the specified limits are met, and no operations which may increase the reactivity of the core shall be performed. See ITS 3.9.1, 3.9.2, 3.9.3, 3.9.5, and 3.9.6

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CTS 3.8.a.9

4.12 SPENT FUEL POOL SWEEP SYSTEM

APPLICABILITY

Applies to testing and surveillance requirements for the spent fuel pool sweep system in TS 3.8.a.9.

OBJECTIVE

To verify the performance capability of the spent fuel pool sweep system.

SPECIFICATION

a. At least once per operating cycle or once every 18 months, whichever occurs first, the following conditions shall be demonstrated:

   1. Pressure drop across the combined HEPA filters and charcoal adsorber banks is < 10 inches of water and the pressure drop across any HEPA bank is < 4 inches of water at the system design flow rate (± 10%). R01

   2. Automatic initiation of each train of the system.

b. 1. The in-place DOP test for HEPA filters shall be performed (1) at least once per 18 months and (2) after each complete or partial replacement of a HEPA filter bank or after any maintenance on the system that could affect the HEPA bank bypass leakage.

   2. The laboratory tests for activated carbon in the charcoal filters shall be performed (1) at least once per 18 months for filters in a standby status or after 720 hours of filter operation, and (2) following painting, fire, or chemical release in any ventilation zone communicating with the system.

   3. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of a charcoal adsorber bank or after any maintenance on the system that could affect the charcoal adsorber bank bypass leakage.

CTS 3.8.a.9

c. Perform an air distribution test on the HEPA filter bank after any maintenance or testing that could affect the air distribution within the system. The test shall be performed at design flow rate (± 10%). The results of the test shall show the air distribution is uniform within ± 20%[1].

R01

[1] In WPS letter of August 25, 1976 to Mr. Al Schwencer (NRC) from Mr. E. W. James, we relayed test results for flow distribution for tests performed in accordance with ANSI N510-1975. This standard refers to flow distribution tests performed upstream of filter assemblies. Since the test results upstream of filters were inconclusive due to high degree of turbulence, tests for flow distribution were performed downstream of filter assemblies with acceptable results (within 20%). The safety evaluation attached to Amendment 12 references our letter of August 25, 1976 and acknowledges acceptance of the test results.

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CTS 3.8.a.9

TABLE TS 4.1-1

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS

CHANNEL DESCRIPTION	CHECK	CALIBRATE	TEST	REMARKS
18. a. Containment Pressure (SIS signal)	Each shift	Each refueling cycle	Monthly(a)	(a) Isolation Valve Signal
b. Containment Pressure (Steamline Isolation)	Each shift(a)	Each refueling cycle(a)	Monthly(a)	(a) Narrow range containment pressure (-3.0, +3.0 psig excluded) See ITS 3.3.2
c. Containment Pressure (Containment Spray Act)	Each shift	Each refueling cycle	Monthly	
d. Annulus Pressure (Vacuum Breaker)	Not applicable	Each refueling cycle	Each refueling cycle	See ITS 3.6.9
19. Radiation Monitoring System	~~Daily (a,b)~~	Each refueling cycle (a)	Quarterly (a)	(a) Includes only channels R11 thru R15, R19, R21, and R23 ~~(b) Channel check required in all plant modes~~ R01
20. Deleted				
21. Containment Sump Level	Not applicable	Not applicable	Each refueling cycle	See ITS 3.4.15
22. Accumulator Level and Pressure	Each shift	Deleted	Not applicable	See ITS 3.5.1
23. Steam Generator Pressure	Each shift	Each refueling cycle	Monthly	See ITS 3.3.2

Discussion of Change R01 is for channels R13 and R14. For the other channels, see ITS 3.3.2, 3.3.6, 3.3.7, and 3.4.15.

See ITS 3.3.2, 3.3.6, 3.3.7, and 3.4.15

Amendment No. 182
04/06/2005

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DISCUSSION OF CHANGES
CTS 3.8.a.9, SPENT FUEL POOL SWEEP SYSTEM

ADMINISTRATIVE CHANGES

None

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

R01 CTS 3.8.a.9 and 4.12 provide requirements on the Spent Fuel Pool Sweep System. CTS Table TS 4.1-1 Channel Description 19 (Radiation Monitors R13 and R14 only) provides the testing requirements for the Auxiliary Building Vent Monitors used to initiate closure of the ventilation dampers for the Spent Fuel Pool Sweep System. The purpose of the Spent Fuel Pool Sweep System is to filter radioactive particulates from the area of the fuel pool. The purpose of the Auxiliary Building vent monitors is to monitor the Auxiliary Building vent flowpath on a continuous basis. The Spent Fuel Pool Sweep System and the Auxiliary Building Vent Monitors are not taken credit for in any accident analyses in the USAR. This is also documented in the NRC Safety Evaluation for License Amendment 190, dated March 8, 2007 (ADAMS Accession No. ML 070430020). Therefore, the ITS does not include this Specification. This changes the CTS by relocating the Spent Fuel Pool Sweep System and the Auxiliary Building Vent Monitors to the Technical Requirements Manual (TRM).

This change is acceptable because CTS 3.8.a.9, CTS 4.12, and CTS Table TS 4.1-1 Channel Description 19 (Radiation Monitors R13 and R14 only) 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. The Spent Fuel Pool Sweep System and the Auxiliary Building Vent Monitors are not installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary prior to a DBA. The Spent Fuel Pool Sweep Specification does not satisfy criterion 1.

2. The Spent Fuel Pool Sweep System and the Auxiliary Building Vent Monitors are not a process variable, design feature, or operating restriction that is in 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 Spent Fuel Pool Sweep Specification does not satisfy criterion 2.

3. The Spent Fuel Pool Sweep System and the Auxiliary Building Vent Monitors are 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

DISCUSSION OF CHANGES
CTS 3.8.a.9, SPENT FUEL POOL SWEEP SYSTEM

the integrity of a fission product barrier. The Spent Fuel Pool Sweep Specification does not satisfy criterion 3.

4. The Spent Fuel Pool Sweep System and the Auxiliary Building Vent Monitors were found to be non-significant risk contributor to core damage frequency and offsite releases. Dominion Energy Kewaunee (DEK) has performed a plant specific analysis to ensure that the Spent Fuel Pool Sweep System does not contain constraints of prime importance in limiting the likelihood or severity of the accident sequences that are commonly found to be important to public health and safety.

Since the 10 CFR 50.36(c)(2)(ii) criteria have not been met, the Spent Fuel Pool Sweep System and the Auxiliary Building Vent Monitors may be relocated out of the Technical Specifications. The Spent Fuel Pool Sweep and Auxiliary Building Vent Monitors Specifications 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 specifications did not meet the criteria in 10 CFR 50.36(c)(2)(ii) and has been relocated to the TRM.

<u>REMOVED DETAIL CHANGES</u>

None

<u>LESS RESTRICTIVE CHANGES</u>

None

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
CTS 3.8.a.9, SPENT FUEL POOL SWEEP SYSTEM

There are no specific NSHC discussions for this Specification.

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CTS 3.14, SNUBBERS

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

CTS 3.14

3.14 SHOCK SUPPRESSORS (SNUBBERS)

APPLICABILITY

Applies to the OPERABILITY of shock suppressors which are related to plant safety.

A01

OBJECTIVE

To ensure that shock suppressors, which are used to restrain safety-related piping under dynamic load conditions, are functional during reactor operation.

SPECIFICATION

a. The reactor shall not be made critical unless all safety-related shock suppressors are OPERABLE except as noted in 3.14.b.

LA01

b. During power operation or recovery from inadvertent trip, if any safety-related shock suppressor is found inoperable one of the following actions shall be taken within 72 hours:

1. The inoperable shock suppressor shall be restored to an OPERABLE condition or replaced with a spare shock suppressor of similar specifications; or

See ITS 3.0

2. The fluid line restrained by the inoperable shock suppressor shall, if feasible, be isolated from other safety-related systems if otherwise permitted by the TS and thereafter operation may continue subject to any limitations by the TS for that fluid line; or

3. Actions shall be initiated to shut down the reactor and the reactor shall be in a HOT SHUTDOWN condition within 36 hours.

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CTS 3.14

4.14 TESTING AND SURVEILLANCE OF SHOCK SUPPRESSORS (SNUBBERS)

Applicability

Applies to periodic testing and surveillance requirements of safety related shock suppressors.

Objective

To verify operability of shock suppressors.

Specification

The following surveillance and testing is required for hydraulic shock suppressors required to be operable by Specification 3.14:

a. All hydraulic shock suppressors whose seal material has been demonstrated by operating experience, lab testing or analysis to be compatible with the operating environment shall be visually inspected to verify integrity of hydraulic fittings, reservoirs and cylinders and mechanical integrity of linkage connections to piping and anchors. These inspections shall be in accordance with the following schedule: LA01

Number of hydraulic shock suppressors found inoperative during inspection or during inspection interval	Next Required Inspection Interval
0	18 months ± 25%
1	12 months ± 25%
2	6 months ± 25%
3 - 4	124 days ± 25%
5 - 7	62 days ± 25%
≥ 8	31 days ± 25%

The required inspection interval shall not be lengthened more than one step per inspection interval.

CTS 3.14

All hydraulic shock suppressors whose seal materials are other than ethylene propylene or other material that has been demonstrated to be compatible with the operating environment shall be visually inspected for operability every 31 days.

Shock suppressors are categorized as "accessible" or "inaccessible". For the purpose of this inspection these two groups may be considered independently and scheduled accordingly.

b. A representative sample of 10% of the safety related shock suppressors shall be functionally tested for operability including verification of proper piston movement, lockup, and bleed at each refueling. For each shock suppressor or subsequent shock suppressor found inoperable by this testing requirement, an additional 10% shall be tested until no more failures are found or all shock suppressors have been tested. Those shock suppressors designated to be difficult to remove or in a high radiation area during shutdown need not be selected for functional testing. The Anchor Holth suppressors used on the steam generators are exempt from functional testing requirements. LA01

BASIS

All safety related hydraulic shock suppressors are visually inspected for overall integrity and operability. The inspection will include verification of proper orientation, adequate hydraulic fluid level and proper attachment of snubber to piping and structures. A01

DISCUSSION OF CHANGES
CTS 3.14, SNUBBERS

ADMINISTRATIVE CHANGES

A01 In the conversion of the Kewaunee 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. 3.0, "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

LA01 *(Type 4 – Removal of LCO, SR, or other TS Requirement to the TRM, USAR, ODCM, NFQAPD, CLRT Program, IST Program, ISI Program, or Setpoint Control Program)* CTS 3.14.a requires all safety related snubbers to be OPERABLE, while critical. CTS 4.14 provides the testing requirements for the safety related snubbers. The ITS does not include the requirements for inspection and testing of safety related snubbers. This changes the CTS by moving the explicit snubber testing requirements from the Technical Specifications to the Technical Requirements Manual (TRM).

The removal of these details from the Technical Specification is acceptable because this type of information is not necessary to provide adequate protection of public health and safety. The purpose of CTS 3.14 and CTS 4.14 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, as modified approved relief requests. Therefore, KPS 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. Also, this change is acceptable because the removed information will be adequately controlled in the TRM. The TRM is incorporated by reference into the USAR and any changes to the TRM are made under 10 CFR 50.59, which ensures changes are properly evaluated.

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DISCUSSION OF CHANGES
CTS 3.14, SNUBBERS

This change is designated as a less restrictive removal of detail change because a requirement is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

None

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
CTS 3.14, SNUBBERS

There are no specific NSHC discussions for this Specification.

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CTS 4.13, RADIOACTIVE MATERIALS SOURCES

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

CTS 4.13

4.13 RADIOACTIVE MATERIALS SOURCES

APPLICABILITY

Applies to the possession, leak test, and record requirements for radioactive material sources required for operation of the facility.

OBJECTIVE

To ensure that radioactive material sources which are beneficial to facility operation are available to the facility and these sources are verified to be free from leakage.

SPECIFICATION

a. Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically authorized by the Commission or the State.

b. Sources which contain by-product material that exceeds the quantities listed in 10 CFR 30.71, Schedule B, and all other sources containing > 0.1 microcuries shall be leak tested in accordance with this TS.

c. Any source specified by TS 4.13.b which is determined to be leaking shall be immediately withdrawn from use, repaired or disposed of in accordance with the Commission's regulations. Leaking is defined as the presence of .005 microcuries of the source's radioactive material on the test sample.

d. Each sealed source with a half-life > 30 days, and in any form other than gas, shall be tested for leakage at intervals not to exceed 6 months, except for: R01

   1. Startup sources inserted in the reactor vessel,
   2. Fission detectors following exposure to core flux,
   3. Irradiation sample sources inserted in the reactor vessel,
   4. Sources enclosed within the Eberline Model 1000 Multi-Source Gamma Calibrator,
   5. Sources enclosed within the Shepherd Model 89-400 Self-Contained Calibrator, and
   6. Hydrogen-3 sources.

e. Sources specified by TS 4.13.b which are in storage and not being used are exempt from the testing of TS 4.13.d. Prior to use or transfer to another licensee of such a source, the leakage test of TS 4.13.d shall be current.

f. Startup sources and fission detectors shall be leak tested prior to initial insertion into the reactor vessel or prior to being subjected to core flux.

g. A complete inventory of radioactive materials sources shall be maintained current at all times.

DISCUSSION OF CHANGES
CTS 4.13, RADIOACTIVE MATERIALS SOURCES

ADMINISTRATIVE CHANGES

None

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

R01 CTS 4.13 provides the testing requirements for possession, leak test, and record requirements for radioactive material sources required for operation of the facility. The limitations of sealed source contamination are intended to ensure that the radioactive material sources are available to the facility and are free from leakage. These 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 into the ITS; therefore, it will be retained in the Technical Requirements Manual (TRM).

This change is acceptable because CTS 4.13 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. Radioactive Materials Sources 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. Radioactive Materials Sources 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. Radioactive Materials Sources is not a structure, system, or component that is part of the primary success path and which functions or actuated 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. Radioactive Materials Sources 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-risk contributor to core damage frequency and offsite releases. Dominion Energy Kewaunee (DEK) has reviewed this evaluation, considers it applicable to

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DISCUSSION OF CHANGES
CTS 4.13, RADIOACTIVE MATERIALS SOURCES

Kewaunee Power Station (KPS) 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 Surveillance Requirements may be relocated out of the Technical Specifications. The Radioactive Materials Sources 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

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
CTS 4.13, RADIOACTIVE MATERIALS SOURCES

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 18

Improved Standard Technical Specifications (ISTS) not used in the Kewaunee Power Station ITS

ISTS 3.7.13, FUEL BUILDING AIR CLEANUP SYSTEM (FBACS)

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

3.7 PLANT SYSTEMS

3.7.13 Fuel Building Air Cleanup System (FBACS)

LCO 3.7.13 Two FBACS trains shall be OPERABLE.

-----NOTE-----
The fuel building boundary may be opened intermittently under administrative control.

APPLICABILITY: [MODES 1, 2, 3, and 4,]
During movement of [recently] irradiated fuel assemblies in the fuel building.

ACTIONS

-----NOTE-----
LCO 3.0.3 is not applicable.

1

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

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.	6 hours
	AND		
	C.2	Be in MODE 5.	36 hours]
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.	Immediately
	OR		
	D.2	Suspend movement of [recently] irradiated fuel assemblies in the fuel building.	Immediately
E. Two FBACS trains inoperable during movement of [recently] irradiated fuel assemblies in the fuel building.	E.1	Suspend movement of [recently] irradiated fuel assemblies in the fuel building.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.13.1	Operate each FBACS train for [≥ 10 continuous hours with the heaters operating or (for systems without heaters) ≥ 15 minutes].	31 days

1

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.7.13.2	Perform required FBACS filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)].	In accordance with the [VFTP]
SR 3.7.13.3	[Verify each FBACS train actuates on an actual or simulated actuation signal.	[18] months]
SR 3.7.13.4	Verify one FBACS train can maintain a pressure ≤ [-0.125] inches water gauge with respect to atmospheric pressure during the [post accident] mode of operation at a flow rate ≤ [20,000] cfm.	[18] months on a STAGGERED TEST BASIS
SR 3.7.13.5	[Verify each FBACS filter bypass damper can be closed.	[18] months]

1

JUSTIFICATION FOR DEVIATIONS
ISTS 3.7.13, FUEL BUILDING AIR CLEANUP SYSTEM (FBACS)

1. ISTS 3.7.13, "Fuel Building Air Cleanup System (FBACS)," is not included in the Kewaunee Power Station (KPS) ITS. At KPS, the Spent Fuel Pool Sweep System, which is the KPS specific system which is equivalent to the Fuel Building Air Cleanup System, is not used for fission product removal associated with ECCS leaks due to a LOCA and leakage from containment and annulus. Additionally, no credit is taken for the Spent Fuel Pool Sweep System in the fuel handling accident analysis at KPS. Therefore, there is no reason to include this Specification in the ITS.

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

B 3.7 PLANT SYSTEMS

B 3.7.13 Fuel Building Air Cleanup System (FBACS)

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.

The FBACS consists of two independent and redundant trains. Each train consists of a heater, a prefilter or demister, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), and a fan. Ductwork, valves or dampers, and instrumentation also form part of the system, as well as demisters, functioning to reduce the relative humidity of the airstream. A second bank of HEPA filters follows the adsorber section to collect carbon fines and provide backup in case the main HEPA filter bank fails. The downstream HEPA filter is not credited in the analysis, but serves to collect charcoal fines, and to back up the upstream HEPA filter should it develop a leak. The system initiates filtered ventilation of the fuel handling building following receipt of a high radiation signal. 1

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.

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

APPLICABLE SAFETY ANALYSES

The FBACS design basis is established by the consequences of the limiting Design Basis Accident (DBA), which is a fuel handling accident [involving handling recently irradiated fuel]. The analysis of the fuel handling accident, given in Reference 3, assumes that all fuel rods in an assembly are damaged. The analysis of the LOCA assumes that radioactive materials leaked from the Emergency Core Cooling System (ECCS) are filtered and adsorbed by the FBACS. The DBA analysis of the fuel handling accident assumes that only one train of the FBACS is functional due to a single failure that disables the other train. The accident analysis accounts for the reduction in airborne radioactive

BASES

APPLICABLE SAFETY ANALYSES (continued)

material provided by the one remaining train of this filtration system. The amount of fission products available for release from the fuel handling building is determined for a fuel handling accident and for a LOCA. [Due to radioactive decay, FBACS is only required to isolate during fuel handling accidents involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [X] days).] These assumptions and the analysis follow the guidance provided in Regulatory Guide 1.25 (Ref. 4).

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

LCO

Two independent and redundant trains of the FBACS are required to be OPERABLE to ensure that at least one train is available, assuming a single failure that disables the other train, coincident with a loss of offsite power. Total system failure could result in the atmospheric release from the fuel handling building exceeding the 10 CFR 100 (Ref. 5) limits in the event of a fuel handling accident [involving handling recently irradiated fuel].

The FBACS is considered OPERABLE when the individual components necessary to control exposure in the fuel handling building are OPERABLE in both trains. An FBACS train is considered OPERABLE when its associated: 1

a. Fan is OPERABLE,

b. HEPA filter and charcoal adsorber are not excessively restricting flow, and are capable of performing their filtration function, 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 fuel building boundary to be opened intermittently under administrative controls. For entry and exit through doors the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for fuel building isolation is indicated.

APPLICABILITY

In MODE 1, 2, 3, or 4, the FBACS is required to be OPERABLE to provide fission product removal associated with ECCS leaks due to a LOCA and leakage from containment and annulus.

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, the FBACS is required to be OPERABLE to alleviate the consequences of a fuel handling accident.

ACTIONS

LCO 3.0.3 is not applicable while in MODE 5 or 6. However, since irradiated fuel assembly movement can occur in MODE 1, 2, 3, or 4, the ACTIONS have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 5 or 6, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, 3, or 4, the fuel movement is independent of reactor operations. Entering LCO 3.0.3, while in MODE 1, 2, 3, or 4 would require the unit to be shutdown unnecessarily.

<u>A.1</u>

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

<u>B.1</u>

----------------------------------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

BASES

ACTIONS (continued)

applicable, of GDC 19, 60, 61, 63, 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 fuel building boundary.

[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.]

1

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.

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.

BASES

ACTIONS (continued)

E.1

When two trains of the FBACS are inoperable during movement of [recently] irradiated fuel assemblies in the fuel building, action must be taken to place the unit in a condition in which the LCO does not apply. Action must be taken immediately to suspend movement of [recently] irradiated fuel assemblies in the fuel building. This does not preclude the movement of fuel to a safe position.

SURVEILLANCE REQUIREMENTS

SR 3.7.13.1

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 accumulated in the charcoal from humidity in the ambient air. [Systems with heaters must be operated for ≥10 continuous hours with the heaters energized. Systems without heaters need only be operated for ≥15 minutes to demonstrate the function of the system.] The 31 day Frequency is based on the known reliability of the equipment and the two train redundancy available. 1

[SR 3.7.13.2

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 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 3.7.13.3

This SR verifies that each FBACS train starts and operates on an actual or simulated actuation signal. The [18] month Frequency is consistent with Reference 6.]

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.13.4

This SR verifies the integrity of the fuel building enclosure. The ability of the fuel building to maintain negative pressure with respect to potentially uncontaminated adjacent areas is periodically tested to verify proper function of the FBACS. During the [post accident] mode of operation, the FBACS is designed to maintain a slight negative pressure in the fuel building, to prevent unfiltered LEAKAGE. The FBACS is designed to maintain a ≤[-0.125] inches water gauge with respect to atmospheric pressure at a flow rate of [20,000] cfm to the fuel building. The Frequency of [18] months is consistent with the guidance provided in NUREG-0800, Section 6.5.1 (Ref. 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. FSAR, Section [6.5.1].
2. FSAR, Section [9.4.5].
3. FSAR, Section [15.7.4].
4. Regulatory Guide 1.25.
5. 10 CFR 100.
6. Regulatory Guide 1.52, Rev. [2].
7. NUREG-0800, Section 6.5.1, Rev. 2, July 1981.

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JUSTIFICATION FOR DEVIATIONS
ISTS 3.7.13 BASES, FUEL BUILDING AIR CLEANUP SYSTEM (FBACS)

1. ISTS B 3.7.13, "Fuel Building Air Cleanup System (FBACS)," is not included in the Kewaunee Power Station (KPS) ITS. At KPS, the Spent Fuel Pool Sweep System, which is the KPS specific system which is equivalent to the Fuel Building Air Cleanup System, is not used for fission product removal associated with ECCS leaks due to a LOCA and leakage from containment and annulus. Additionally, no credit is taken for the Spent Fuel Pool Sweep System in the fuel handling accident analysis at KPS. Therefore, there is no reason to include this Specification in the ITS.

ISTS 3.7.14, PENETRATION ROOM EXHAUST AIR CLEANUP SYSTEM (PREACS)

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

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. <u>AND</u> C.2 Be in MODE 5.	6 hours 36 hours

1

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

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]

1

JUSTIFICATION FOR DEVIATIONS
ISTS 3.7.14, PENETRATION ROOM EXHAUST AIR CLEANUP SYSTEM (PREACS)

1. The Kewaunee Power Station (KPS) design does not include the Penetration Room Exhaust Air Cleanup System. Therefore, ISTS 3.7.14, "Penetration Room Exhaust Air Cleanup System (PREACS)," is not included in the KPS ITS.

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

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. 1

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).

BASES

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 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: 1

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.

BASES

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).

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----------------------------------- 1
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.

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. 1

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.]

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. 1

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.

1

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JUSTIFICATION FOR DEVIATIONS
ITS 3.7.14 BASES, PENETRATION ROOM EXHAUST AIR CLEANUP SYSTEM (PREACS)

1. ISTS 3.7.14 Bases, "Penetration Room Exhaust Air Cleanup System (PREACS)," is not included in the Kewaunee Power Station (KPS) ITS since the Specification has not been included in the KPS ITS.