ATTACHMENT 1

VOLUME 12

DAVIS-BESSE IMPROVED TECHNICAL SPECIFICATIONS CONVERSION

ITS SECTION 3.7 PLANT SYSTEMS

Revision 0

LIST OF ATTACHMENTS

ATTACHMENT 1

ITS 3.7.1, MAIN STEAM SAFETY VALVES (MSSVs)

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

ITS A01 ITS 3.7.1

3/4.7 PLANT SYSTEMS

3/4.7.1 TURBINE CYCLE

SAFETY VALVES

LIMITING CONDITION FOR OPERATION

LCO 3.7.1 3.7.1.1 All main steam line code safety valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3.

ACTION: Add proposed ACTIONS Note A02

With one or more main steam line code safety valves inoperable,

a. operation in MODES 1, 2 and 3 may proceed provided that, within ~~4~~ 36 hours, either L01

ACTION A 1. the inoperable valve is restored to OPERABLE status, or A03

2. a) the High Flux Trip Setpoint is reduced per Equation 3.7-1 below, and Add proposed Required Action A.1 M01

ACTION B b) there are a minimum of two OPERABLE safety valves per steam generator, at least one with a setpoint not greater than 1050 psig (± 1%)*, and A04

Table 3.7.1-1 c) no OPERABLE safety valve has a setpoint greater than 1100 psig (± 1%)*;

otherwise

ACTION B b. be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 12 hours.

~~c. The provisions of Specification 3.0.4 are not applicable.~~ A05

Equation 3.7.1-1

Equation 3.7-1: $SP = \frac{Y}{Z} \times W$

where,

SP = Reduced High Flux Trip Setpoint (Not to exceed W)
W = High Flux Trip Setpoint for four pump operation as specified in Table 2.2-1
Y = Total OPERABLE relieving capacity per steam generator based on a summation of individual OPERABLE safety valve relief capacities per steam generator in lbs/hr
Z = Required relieving capacity per steam generator of 6,585,600 lbs/hr

SURVEILLANCE REQUIREMENTS

Add proposed SR 3.7.1.1 Note A06

SR 3.7.1.1 4.7.1.1 No additional Surveillance Requirements other than those required by Specification 4.0.5, are applicable for the main steam line code safety valves.

Add proposed Table 3.7.1-1 A04

~~*The lift setting pressure shall correspond to ambient conditions of the valve at nominal operating temperature and pressure.~~ LA01

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

ADMINISTRATIVE CHANGES

A01 In the conversion of the Davis-Besse 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-1430, Rev. 3.1, "Standard Technical Specifications-Babcock and Wilcox 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 3.7.1.1 Action a states, in part, that when one or more MSSVs are inoperable, within 4 hours restore the inoperable valve to OPERABLE status or reduce the High Flux Trip Setpoint in accordance with the requirements of Equation 3.7-1. 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 3.7.1.1 Action a 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.

A03 CTS 3.7.1.1 Action a states, in part, that with one or more MSSVs inoperable to either restore the inoperable valve to OPERABLE status or to take an alternate, compensatory measure. ITS 3.7.1 ACTION A does not include the restoration requirement, only the alternate compensatory measure is provided. This changes the CTS by eliminating the explicit statement to restore the inoperable MSSV to OPERABLE status.

This change is acceptable because it results in no technical change to the Technical Specifications. Restoration of compliance with the LCO is always an option in an Action, so eliminating the restoration Action from CTS has no effect. It is the convention of the ITS to not state such "restore" options explicitly unless it is the only action or is required for clarity. In both the CTS and the ITS, if the inoperable MSSV is not restored, actions are taken that result in reducing reactor power to within the relief capability of the OPERABLE MSSVs within 4 hours. This change is designated as administrative because it results in no technical change to the CTS.

A04 CTS 3.7.1.1 does not identify the OPERABILITY lift settings for the MSSVs nor the total number of required MSSVs. CTS 3.7.1.1 only states that all MSSVs shall be OPERABLE. ITS Table 3.7.1-1 identifies the total number of MSSVs, the lift setting for each of the MSSVs and that the lift settings for OPERABILITY are $\pm$ 3% of the nominal lift setting. Furthermore, ITS SR 3.7.1.1 states that after

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

testing, the lift setting shall be ± 1%. This changes the CTS by clearly stating the required number of MSSVS and their OPERABILITY lift settings.

The as-found lift settings and their tolerances as well as the as-left lift setting requirements in the ITS are consistent with the Davis-Besse Inservice Testing Program requirements. ITS Table 3.7.1-1 lists a total of nine MSSVs per steam generator, which is all the MSSVs for a steam generator. Furthermore, the CTS 3.7.1.1 Actions a.2.b) and a.2.c) lift setting tolerances are describing the nominal lift settings of the required valves while in this Action. The parenthetical tolerance bands in the two Actions are only providing clarifying information to help identify the specific MSSV requirements, and the clarifying information is simply the as-left lift setting tolerance. Therefore, this change is acceptable and designated as administrative since it does not result in any technical change to the CTS.

A05 CTS 3.7.1.1 Action c states that the provisions of Specification 3.0.4 are not applicable. ITS 3.7.1 does not include this specific exception. This changes the CTS by deleting the specific exception to Specification 3.0.4.

This change is acceptable because it results in no technical change to the Technical Specifications. CTS 3.0.4 has been revised as discussed in the Discussion of Changes for ITS Section 3.0. ITS LCO 3.0.4, in part, states that when an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time. ITS 3.7.1 ACTION A requires the plant to reduce power and the High Flux Trip setpoints, and allows operation to continue for an unlimited period of time (provided one of the OPERABLE MSSVs has a lift setting of 1050 psig). Therefore, because the ITS still allows the plant to change a MODE or other specified condition in the Applicability, this change is considered to be consistent with the current allowances. This change is designated as administrative because it does not result in a technical change to the CTS.

A06 CTS 4.7.1.1 requires the MSSV lift setpoints to be verified in accordance with Specification 4.0.5, the Inservice Testing Program requirements. The Davis-Besse Inservice Testing Program requires this test to be performed in MODES 1, 2, or 3. ITS SR 3.7.1.1 requires verification of each MSSV lift setpoint in accordance with the Inservice Testing Program. In addition, the Note to SR 3.7.1.1 states that the Surveillance is only required to be performed in MODES 1 and 2. This changes the CTS by explicitly stating that the unit can transition from MODE 4 to MODE 3 without requiring the lift setpoints of the MSSVs to be verified (i.e., the Surveillance to be performed).

This change is acceptable because it results in no technical changes to the Technical Specifications. The CTS does not currently require the lift setpoint test to be complete prior to entering the Applicability of CTS 3.7.1.1 (MODES 1, 2, and 3). Due to the format of the ITS and requirements of ITS SR 3.0.4, this Surveillance Requirement Note is necessary to ensure the unit can transition from MODE 4 to MODE 3 without having the Surveillance performed, provided it

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

is performed prior to transitioning to MODE 2. This change is designated as administrative because it does not result in a technical change to the CTS.

MORE RESTRICTIVE CHANGES

M01 CTS 3.7.1 Action a.2.a states that the High Flux Trip Setpoint must be reduced per Equation 3.7-1 when one or more MSSVs are found to be inoperable. CTS Equation 3.7-1 provides the maximum allowable High Flux Trip Setpoint corresponding to the maximum number of inoperable MSSVs on any operating steam generator. ITS 3.7.1 ACTION A requires both a reduction in THERMAL POWER and a reduction in the High Flux Trip Setpoint consistent with the requirements of ITS Equation 3.7.1-1. The reduction in THERMAL POWER is based on RTP, not the High Flux Setpoint. This changes the CTS by adding an additional explicit statement to reduce THERMAL POWER consistent with ITS Equation 3.7.1-1.

The purpose of CTS 3.7.1.1 Action a is to reduce the High Flux Trip Setpoint to within the limits of the safety analyses. This reduction in the setpoint could cause a reactor trip if the THERMAL POWER is not reduced prior to the setpoint change. The unit will reduce THERMAL POWER before reducing the setpoints in order to stay on line. The required power reduction will maintain the same margin to the High Flux Trip Setpoint. This change is designated more restrictive because a specific THERMAL POWER reduction is required and controlled in the ITS.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* Certain portions of CTS 3.7.1.1 Action are modified by footnote *, that states that the MSSV lift setting pressure shall correspond to ambient conditions of the valve at nominal operating temperature and pressure. This information is not provided in ITS 3.7.1. This changes the CTS by moving this information to the Bases.

The removal of these details for performing Surveillance Requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. ITS 3.7.1 still retains a requirement for the valves to be OPERABLE. Under the definition of OPERABILITY, the MSSVs must be capable of lifting at the assumed conditions, which includes the ambient operating conditions of the MSSVs themselves. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated

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

as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being moved from the Technical Specifications to the ITS Bases.

LESS RESTRICTIVE CHANGES

L01 *(Category 3 – Relaxation of Completion Time)* CTS 3.7.1.1 Action a specifies the compensatory actions when one or more MSSVs are inoperable in MODES 1, 2, and 3. The action allows operation to continue provided that within 4 hours, either the inoperable valve is restored to OPERABLE status or the High Flux Trip Setpoint is reduced in accordance with the requirements of Equation 3.7-1. ITS 3.7.1 Required Action A.2 requires the reduction of the High Flux Trip setpoint in accordance with Equation 3.7.1-1 within 36 hours. This changes the CTS by extending the time allowed to reduce the High Flux Trip setpoint. The change that deletes the restoration option is discussed in DOC A03.

The purpose of CTS 3.7.1.1 Action a is to limit the time the unit can operate with inoperable MSSVs without reducing the High Flux Trip setpoints. This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs, the low probability of a DBA occurring during the allowed Completion Time. This change extends the time allowed to reduce the High Flux Trip setpoints when the MSSVs are inoperable. The time extension is from 4 hours to 36 hours. However, the time to reduce THERMAL POWER to the same limits is maintained in ITS 3.7.1 Required Action A.1, as described in DOC M01. This change is acceptable since the Completion Time of 36 hours is based on a reasonable time to correct the MSSV inoperability, the time required to perform the power reduction, operating experience in resetting all channels of a protective function, and on the low probability of the occurrence of a transient that could result in steam generator overpressure during this period. In addition, the actual reactor power level continues to be required to be reduced to within the same limits within 4 hours. Thus operation of the unit at RATED THERMAL POWER with inoperable MSSVs is still only allowed for 4 hours, consistent with the current allowance. This change is designated as less restrictive because additional time is allowed to restore parameters to within the LCO limits than was allowed in the CTS.

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

CTS

MSSVs
3.7.1

3.7 PLANT SYSTEMS

3.7.1 Main Steam Safety Valves (MSSVs)

3.7.1.1 LCO 3.7.1 The MSSVs shall be OPERABLE as specified in Table 3.7.1-1 ~~and~~ ~~Figure 3.7.1-1~~. 1

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

-----NOTE-----

DOC A02 Separate Condition entry is allowed for each MSSV.

CTS	CONDITION	REQUIRED ACTION	COMPLETION TIME	
Action a	A. One or more ~~required~~ MSSVs inoperable.	A.1 Reduce power to less than the reduced power requirement of ~~Figure~~ Equation 3.7.1-1. AND A.2 Reduce the ~~nuclear~~ High Flux ~~overpower~~ trip setpoint in accordance with ~~Figure~~ Equation 3.7.1-1.	4 hours 36 hours	1 1 2 1
Action a.2.b, Action b	B. Required Action and associated Completion Time of Condition A not met. OR One or more steam generators with less than [two] MSSVs OPERABLE. OR One or more steam generators with no MSSVs with a lift setting of 1050 psig ± 3% OPERABLE.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	6 hours 12 hours	3 4 6

CTS

MSSVs
3.7.1

SURVEILLANCE REQUIREMENTS

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

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CTS

MSSVs
3.7.1

DOC A04

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

~~VALVE~~ NUMBER OF VALVES	LIFT SETTING (psig ± [3]%)	5 1
[2] MSSVs/steam generator	[1050]	1
[7] MSSVs/steam generator	[~~≤~~1100]	1

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CTS

MSSVs
3.7.1

Equation 3.7-1

$$\frac{WY}{Z} = SP; \quad RP = \frac{Y}{Z} \times 100\%$$

W = ~~Nuclear overpower~~ High Flux trip setpoint for four pump operation as specified in LCO 3.3.1~~.~~, "Reactor Protection System (RPS) Instrumentation." 5 2

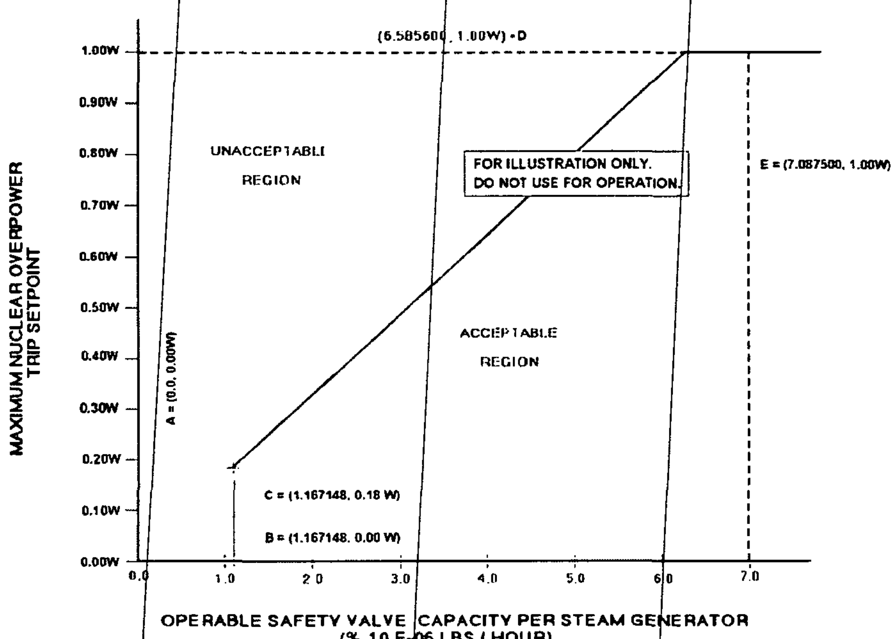
Y = Total OPERABLE MSSV relieving capacity per steam generator based on summation of individual OPERABLE MSSV relief capacities per steam generator [lb/hour]. 4

Z = Required relieving capacity per steam generator of [6,585,600] lb/hour. 4

SP = ~~Nuclear overpower~~ High Flux trip setpoint (not to exceed W). 2

RP = Reduced power requirement (not to exceed RTP).

These equations are graphically represented below.
Operation is restricted to the area below and to the right of line BCDE.



1

~~Figure~~ Equation 3.7.1-1 (page 1 of 1) 1
Reduced Power and ~~Nuclear Overpower~~ High Flux Trip Setpoint 2
versus OPERABLE Main Steam Safety Valves

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

1. All of the installed MSSVs for Davis-Besse must be OPERABLE. All MSSVs listed in Table 3.7.1-1 (nine total MSSVs per steam generator) are required OPERABLE, and Figure 3.7.1-1 is only used when one or more of the MSSVs are inoperable. Therefore, ISTS LCO 3.7.1 has been changed to delete the reference to Figure 3.7.1-1. Since all installed MSSVs are required, the term "required" in ISTS 3.7.1 Condition A and ISTS SR 3.7.1.1 have been deleted. Furthermore, the equation presented in ISTS Figure 3.7.1-1 is sufficient determine the necessary power reduction and High Flux trip setpoint reduction. Therefore, the graphical representation of the equation has been deleted and the Figure has been renamed as an Equation.

2. Changes are made which reflect the plant specific nomenclature.

3. This change has been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, TSTF-GG-05-01, Section 4.1.6.i.5.ii.

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

5. Editorial correction.

6. The Davis-Besse overpressure protection analysis requires one of the OPERABLE MSSVs be set at 1050 psig ± 3%. Therefore, this requirement has been included in Condition B, similar to the minimum number of OPERABLE MSSVs requirement also included in Condition B.

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

B 3.7 PLANT SYSTEMS

B 3.7.1 Main Steam Safety Valves (MSSVs)

BASES

BACKGROUND

The primary purpose of the MSSVs is to provide overpressure protection for the secondary system. The MSSVs also provide protection against overpressurizing the reactor coolant pressure boundary (RCPB) by providing a heat sink for 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.

Nine MSSVs are located on each main steam header, outside containment, upstream of the main steam isolation valves, as described in the U FSAR, Section 10.3 ~~[5.2]~~ (Ref. 1). The MSSV rated capacity ~~passes the full steam flow at 112% RTP with the valves full open~~ is 14.175E6 lb/hr, which is approximately 115% of the total secondary system design flow. This meets the requirements of the ASME Code, Section III (Ref. 2). The MSSV design includes two ~~staggered~~ setpoints, according to Table 3.7.1-1 ~~in the accompanying LCO~~, ~~so that only the needed number of valves will actuate. Staggered setpoints reduce the potential for valve chattering because of insufficient steam pressure to fully open all valves following a turbine reactor trip~~. 1 2 1 1 3 1

APPLICABLE SAFETY ANALYSES

The design basis of the MSSVs comes from Reference 2 and its purpose is to limit secondary system pressure to ≤ 110% of design pressure when passing 100% of design steam flow. This design basis is sufficient to cope with 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 RCS pressure, are those characterized as decreased heat removal events, and are presented in the U FSAR, Section ~~[~~15~~.2]~~ (Ref. 3). Of these, the full power turbine trip coincident with a loss of condenser heat sink is the limiting AOO. For this event, the Condenser Circulating Water System is lost and, therefore, the Turbine Bypass Valves are not available to relieve Main Steam System pressure. Similarly, MSSV relief capacity is utilized in the U FSAR for mitigation of the following events: 1 2 1

a. Loss of main feedwater;

b. Main ~~s~~Steam line break;

c. Steam generator tube rupture; ~~and~~

d. Excessive heat removal due to feedwater system malfunction; and

e. Small break loss of coolant accident.

1 4

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

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BASES

LCO

The MSSVs setpoints are established to prevent overpressurization as discussed in the Applicable Safety Analysis section of these Bases. The LCO requires all MSSVs to be OPERABLE to ensure compliance with the ASME Code following DBAs initiated at full power. Operation with less than a full complement of MSSVs requires limitations on unit THERMAL POWER and adjustment of the Reactor Protection System (RPS) trip setpoints. This effectively limits the Main Steam System steam flow while the MSSV relieving capacity is reduced due to valve inoperability. To be OPERABLE, lift setpoints must remain within limits, according to Table 3.7.1-1 ~~in the accompanying LCO~~. 3

The OPERABILITY of the MSSVs is defined as the ability to open within the setpoint tolerances, 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.

The lift settings, according to Table 3.7.1-1 ~~in the accompanying LCO~~, correspond to ambient conditions of the valve at nominal operating temperature and pressure. 3

This LCO provides assurance that the MSSVs will perform the design safety function to mitigate the consequences of accidents that could result in a challenge to the RCPB.

APPLICABILITY

~~In MODE 1 above [18]% RTP, the number of MSSVs per steam generator required to be OPERABLE must be within the acceptable region, according to Figure 3.7.1-1 in the accompanying LCO. Below [18]% RTP in MODES 1, 2, and 3, only two MSSVs are required OPERABLE per steam generator.~~

INSERT 1 1

In MODES 4 and 5, there is no credible transient requiring the MSSVs.

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

ACTIONS

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

(1) **INSERT 1**

To support 100% RTP operation, all nine MSSVs on a steam generator are required to be OPERABLE. However, MODE 1 operation is permitted with inoperable MSSVs, provided the maximum permissible power level is reduced to a value less than that determined by Equation 3.7.1-1. In addition, in MODES 1, 2, and 3 at least two MSSVs per steam generator must be OPERABLE, one of which must have a lift setting of 1050 psig $\pm$ 3%.

BASES

ACTIONS (continued)

A.1 and A.2

An alternative to restoring the inoperable MSSV(s) to OPERABLE status is to reduce power so that the available MSSV relieving capacity meets ASME Code requirements for the power level. Operation may continue, provided the ALLOWABLE THERMAL POWER and RPS nuclear overpower trip setpoint are reduced by the application of the following formulas: High Flux 6 1

RP = [Y / Z] x 100% 2

and

SP = [Y / Z] x W 2

where: High Flux Instrumentation 7

W = Nuclear overpower trip setpoint for four pump operation as specified in LCO 3.3.1, "Reactor Protection System (RPS)." ; 1 4

Y = Total OPERABLE MSSV relieving capacity per steam generator based on a summation of individual OPERABLE MSSV relief capacities per steam generator [lb/hour]. ; 2 4

Z = Required relieving capacity per steam generator of [6,585,600] lb/hour. ; 2 4

RP = Reduced power requirement (not to exceed RTP); and 4

High Flux

SP = Nuclear overpower trip setpoint (not to exceed W). 1

provided in Equation 5

These equations are graphically represented in Figure 3.7.1-1, in the accompanying LCO. Operation is restricted to the area below and to the right of line BCDE. 3 5

The operator should limit the maximum steady state power level to some value slightly below this setpoint to avoid an inadvertent overpower trip. High Flux 1

The 4 hour Completion Time for Required Action A.1 is a reasonable time period to reduce power level and is based on the low probability of an event occurring during this period that would require activation of the MSSVs. An additional 32 hours is allowed in Required Action A.2 to

The individual relief capacity of the two MSSVs with a normal setpoint of 1050 psig is 583,574 lb/hr and the individual relief capacity of the other MSSVs is 845,759 lb/hr. 1

BASES

ACTIONS (continued)

High Flux trip

reduce the setpoints. The Completion Time of 36 hours for Required Action A.2 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. 7

B.1 and B.2

~~With one or more MSSVs inoperable, a verification by administrative means that at least [two] required MSSVs per steam generator are OPERABLE, with each valve from a different lift setting range, is performed.~~ 7

INSERT 2

~~If the MSSVs cannot be restored to OPERABLE status in 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. 7

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 for MSSVs: 1

a. Visual examination;

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 ~~device~~ on balanced valves. 1

7 **INSERT 2**

If any Required Action and associated Completion Time of Condition A is not met, if one or more steam generators have less than two OPERABLE MSSVs, or if one or more steam generators have no OPERABLE MSSVs with a lift setpoint of 1050 psig ± 3%

BASES

SURVEILLANCE REQUIREMENTS (continued)

OM Code

from each valve group

The ~~ANSI~~/ASME ~~Standard~~ requires the testing of all valves every 5 years, with a minimum of 20% of the valves tested every 24 months. Reference ~~4~~ provides the activities and frequencies necessary to satisfy the requirements. Table 3.7.1-1 allows a ± [3]% setpoint tolerance for OPERABILITY; however, the valves are reset to ± 1% during the Surveillance to allow for drift. 1 8 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

U 1. FSAR, Section ~~[5.2]~~ 10.3. 1 2

2. ASME, Boiler and Pressure Vessel Code, Section III, Article NC-7000, Class 2 Components 1971 Edition 1

U 3. FSAR, Section [15.2]. 1 2

4. ASME Code for Operation and Maintenance of Nuclear Power Plants. 1995 Edition with 1996 Addenda 1

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

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

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

3. Changes are made to be consistent with similar phrases in other Bases.

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.

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

6. Typographical error corrected.

7. Changes made to reflect the wording of the Specification.

8. This statement has been deleted since the activities and frequencies are previously described.

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)

A01

ITS 3.7.2

ITS

PLANT SYSTEMS

MAIN STEAM LINE ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

LCO 3.7.2 3.7.1.5 Each main steam line isolation valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3 except when all MSIVs are closed L01

ACTION:

M01

L02

MODE 1 -

ACTION A With one main steam line isolation valve inoperable, POWER OPERATION may continue provided the inoperable valve is either 8 restored to OPERABLE status ~~or closed~~ within 4 hours. Otherwise,

ACTION B be in HOT SHUTDOWN MODE 2 within the next ~~12~~ 6 hours. M02

MODES 2 and 3 -

ACTION C With one main steam line isolation valve inoperable, subsequent operation in MODES ~~1,~~ 2 or 3 may proceed provided: M01

a. The inoperable isolation valve is ~~maintained~~ closed in 8 hours. L02

Add proposed Required Action C.2 M03

ACTION D Otherwise, Add proposed Required Action D.1 be in HOT SHUTDOWN within the next 12 hours. M04

b. ~~The provisions of Specification 3.0.4 are not applicable.~~ A02

SURVEILLANCE REQUIREMENTS

SR 3.7.2.1 4.7.1.5 Each main steam line isolation valve shall be demonstrated OPERABLE per the requirements of Specification 3.3.2.2 when tested pursuant to Specification 4.0.5. A03

Add proposed SR 3.7.2.2 M05

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ITS

A01

ITS 3.7.2

CONTAINMENT SYSTEMS

3/4.6.3 CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

A04

LCO 3.7.2
SR 3.7.2.1

3.6.3.1 All containment isolation valves shall be OPERABLE with isolation times less than or equal to required isolation times.*

except when all MSIVs are closed — L01

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

L03

ACTION:

With one or more of the isolation valve(s) inoperable, either:

8 — L02

ACTION A

a. Restore the inoperable valve(s) to OPERABLE status within ~~4~~ hours, or

Add proposed ACTION B and Required Acton C.2 — L04

**b. Isolate each affected penetration within 4 hours by use of at least one deactivated automatic valve secured in the isolation position, or

See ITS 3.6.3

ACTION C

**c. Isolate each affected penetration within ~~4~~ hours by use of at least one closed manual valve or blind flange; or

8 — L02

See ITS 3.6.3

ACTION D

d. Be in at least HOT STANDBY within the next 6 hours and in ~~COLD SHUTDOWN~~ within the ~~following~~ 30 hours.

MODE 4 — 12 — L03

SURVEILLANCE REQUIREMENTS

~~4.6.3.1.1 The isolation valves shall be demonstrated OPERABLE prior to returning the valve to service after maintenance, repair or replacement work that could affect the valve's performance is performed on the valve or its associated actuator, control or power circuit by performance of a cycling test and verification of isolation time.~~

L05

* Surveillance testing of valves MS100, MS101, ICS11A and ICS11B is not required prior to entering MODE 4 but shall be performed prior to entering MODE 3.

See ITS 3.6.3

** The ~~provisions of Specification 3.0.4 are not applicable.~~ Selected valves may be opened on an intermittent basis under administrative controls.

A05

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ITS

A01

ITS 3.7.2

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.6.3.1.2 Each isolation valve shall be demonstrated OPERABLE at least once each REFUELING INTERVAL, by:

a. Verifying that on a containment isolation test signal, each automatic isolation valve actuates to its isolation position.

b. DELETED

See ITS 3.6.3

SR 3.7.2.1 4.6.3.1.3 The isolation time of each power operated or automatic valve shall be determined to be within its limit when tested pursuant to Specification 4.0.5.

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

ADMINISTRATIVE CHANGES

A01 In the conversion of the Davis-Besse 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-1430, Rev. 3.1, "Standard Technical Specifications-Babcock and Wilcox 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 3.7.1.5 Action MODE 2 and 3 states that the provisions of Specification 3.0.4 are not applicable. ITS 3.7.2 does not include this specific exception. This changes the CTS by deleting the specific exception to Specification 3.0.4.

This change is acceptable because it results in no technical change to the Technical Specifications. CTS 3.0.4 has been revised as discussed in the Discussion of Changes for ITS Section 3.0. ITS LCO 3.0.4, in part, states that when an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time. ITS 3.7.2 ACTION A requires the plant to close the inoperable MSIV, and allows operation to continue for an unlimited period of time. Therefore, because the ITS still allows the plant to change a MODE or other specified condition in the Applicability, this change is considered to be consistent with the current allowances. This change is designated as administrative because it does not result in a technical change to the CTS.

A03 CTS 4.7.1.5 requires each MSIV to be demonstrated OPERABLE "per the requirements of Specification 3.3.2.2." Specification 3.3.2.2 provides the requirements for the Steam and Feedwater Rupture Control System (SFRCS) Instrumentation. CTS 4.3.2.2.3 requires a SFRCS RESPONSE TIME test, and footnote *, in part, describes how the MSIV closure portion of the SFRCS RESPONSE TIME is to be measured. Thus, the CTS 4.7.1.5 requirement is referencing the MSIV closure time requirement. ITS SR 3.7.2.1 requires verification that the isolation time of each MSIV is within limits. This changes the CTS by explicitly stating the MSIV testing requirement in the MSIV Specification.

This change is acceptable because it results in no technical change to the Technical Specifications. The change explicitly states the actual MSIV requirement in the MSIV Specification, in lieu of providing a cross-reference to the Instrumentation Specification that requires a RESPONSE TIME test. This change is designated as administrative because it does not result in any technical changes to the CTS.

A04 CTS 3.6.3.1 requires the containment isolation valves to be OPERABLE with isolation times less than or equal to required isolation times. However, CTS 3.7.1.5 also requires the MSIVs to be OPERABLE. ITS 3.7.2 requires the MSIVs to be OPERABLE and ITS SR 3.7.2.1 requires the MSIVs isolation time to

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

be within limits. This changes the CTS by placing the MSIVs into a single Specification.

The purpose of ITS 3.7.2 is to provide all the requirements for the MSIVs in a single Specification. As such, this change is acceptable since it does not result in any technical changes. Any technical changes as a result of placing the MSIVs in a common Specification 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.

A05 CTS 3.6.3.1 Action c provides the actions for inoperable MSIVs and includes Note **, which states that the provisions of Specification 3.0.4 are not applicable. ITS 3.7.2 does not include this Note. This changes the CTS by deleting the specific exception to Specification 3.0.4.

This change is acceptable because it results in no technical change to the Technical Specifications. CTS 3.0.4 has been revised as discussed in the Discussion of Changes for ITS Section 3.0. ITS LCO 3.0.4, in part, states that when an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time. ITS 3.7.2 ACTION C requires the plant to close the MSIV and allows operation to continue for an unlimited period of time. Therefore, because the ITS still allows the plant to change a MODE or other specified condition in the Applicability, this change is considered to be consistent with the current allowances. This change is designated as administrative because it does not result in a technical change to the CTS.

<u>MORE RESTRICTIVE CHANGES</u>

M01 CTS 3.7.1.5 Action MODE 1 requires restoring the inoperable MSIV to OPERABLE status or closing the MSIV. CTS 3.7.1.5 Action MODES 2 and 3 states, in part, that subsequent operation in MODE 1, 2, or 3 is allowed if the MSIV is maintained closed. ITS 3.7.2 ACTION A does not include the specific option to close the inoperable MSIV when in MODE 1, only the requirement to restore the MSIV is provided. This changes the CTS by eliminating the allowance to close the inoperable MSIV and continue to operate when in MODE 1.

The purpose of CTS 3.7.1.5 Action MODE 1 is to provide compensatory measures to be taken if an MSIV is inoperable while in MODE 1. The Davis-Besse design includes only two RCS loops and two steam generators, each with a single MSIV. Therefore, it is not currently possible for Davis-Besse to close one of the two MSIVs and operate with only a single steam generator in service. Thus, Davis-Besse 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 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 Action

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

that would allow continued operation without requiring restoration of the LCO is being deleted from the CTS.

M02 CTS 3.7.1.5 Action MODE 1 states, in part, that if one inoperable MSIV cannot be restored to OPERABLE status or closed within the allowed time, to be in HOT SHUTDOWN (MODE 4) within the next 12 hours. Under similar conditions, ITS 3.7.2 ACTION B requires the unit to be shutdown to MODE 2 within 6 hours. This changes the CTS by reducing the time to be outside the applicability of the Action statement.

The purpose of CTS 3.7.1.5 Action MODE 1 is to provide compensatory measures to be taken if an MSIV is inoperable while in MODE 1. Once entry is made into MODE 1, the Action is not applicable, and CTS 3.7.1.5 Action MODES 2 and 3 must be taken. Thus, the CTS 3.7.1.5 Action MODE 1 requirement to be in MODE 4 is not required; the unit only has to be in MODE 2 within the current 12 hour period. This change is acceptable because the proposed time of 6 hours is a sufficient and reasonable time to reach MODE 2 from MODE 1 conditions. This change is designated as more restrictive because less time is being provided to exit the applicability of the Action in the ITS than is provided in the CTS.

M03 CTS 3.7.1.5 Action MODES 2 and 3, in part, requires that when one MSIV is inoperable in MODE 2 or 3, the MSIV is to be maintained closed. Once closed, no actions are required to periodically verify the MSIV remains closed. When one MSIV is inoperable in MODE 2 or 3, ITS 3.7.2 Required Action C.1 requires the inoperable MSIV to be closed within 8 hours. In addition, ITS 3.7.2 Required Action C.2 requires a verification that the MSIV is closed once per 7 days. This changes the CTS by adding a periodic verification that the inoperable MSIV remains closed. The change in the time to close the MSIV is discussed in DOC L02.

The purpose of the CTS 3.7.1.5 Action MODES 2 and 3 is to place the inoperable MSIV in the condition assumed in the safety analysis. This change is acceptable because it provides added assurance that the inoperable MSIV is maintained in this condition, i.e., closed. The proposed 7-day periodic verification is also consistent with a similar requirement in CTS 3.7.1.9 (ITS 3.7.4) when a turbine stop valve (TSV) is inoperable. As discussed in the Bases for ITS 3.7.4, the TSVs are assumed in the safety analysis for the same reasons as the MSIVs. This change is designated as more restrictive because a new requirement is being added to the ITS that is not required in the CTS.

M04 CTS 3.7.1.5 Action MODES 2 and 3 states that if one main steam line isolation valve (MSIV) can not be restored to OPERABLE status or closed within the allowed time, to be in HOT SHUTDOWN (MODE 4) within the next 12 hours. Under similar conditions, ITS 3.7.2 ACTION D states to be in MODE 3 in 6 hours and MODE 4 in 12 hours. This changes the CTS by specifying that MODE 3 must be achieved within 6 hours.

The purpose of the CTS 3.7.1.5 Action MODES 2 and 3 shutdown action is to place the unit outside the Applicability of the LCO. This change is acceptable because a new intermediate MODE must be reached, consistent with the

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

requirements of CTS 3.0.3 and ITS LCO 3.0.3. The proposed Completion Time is sufficient to allow an operator to reduce power to MODE 3 from MODE 2 in a controlled manner without challenging unit safety systems. The 6 hour time provided to reach MODE 3 is consistent with the time provided in similar actions in both the CTS and ITS. This change has been designated as more restrictive because it requires the unit to be placed in MODE 3 within a specific time.

M05 CTS 3.7.1.5 does not include a requirement to verify that each MSIV actuates to the isolation position on an actual or simulated actuation signal. ITS 3.7.2.2 is being added to perform this requirement every 24 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 24 month Frequency is consistent with CTS 4.7.1.5, which requires the isolation time of each MSIV to be measured. This change is considered more restrictive because a new Surveillance Requirement is added to the ITS that is not included in the CTS.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

None

LESS RESTRICTIVE CHANGES

L01 *(Category 2 – Relaxation of Applicability)* CTS 3.7.1.5 is applicable in MODES 1, 2, and 3. CTS 3.6.3.1 is applicable in MODES 1, 2, 3, and 4. ITS LCO 3.7.2 is applicable in MODE 1, and in MODES 2 and 3 except when all MSIVs are closed. This changes the CTS by making the Specification not applicable in MODES 2 and 3 when all MSIVs are closed. The change to the MODE 4 requirement is discussed in DOC L03.

The purpose of the CTS 3.7.1.5 and CTS 3.6.3.1 Applicability is to ensure that the MSIVs are OPERABLE and capable of closing when required to support the safety analyses. 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. When all the valves are in the closed position, they are in their assumed accident position. This change is designated as less restrictive because the ITS LCO requirements are applicable in fewer operating conditions than in the CTS.

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

L02 *(Category 3 – Relaxation of Completion Time)* CTS 3.7.1.5 Action MODE 1, in part, requires that when one MSIV is inoperable, the MSIV is restored to OPERABLE status or closed within 4 hours or a shutdown is required. CTS 3.7.1.5 Action MODES 2 and 3, in part, requires that when one MSIV is inoperable, the MSIV is to be maintained closed or a shutdown is required. CTS 3.6.3.1 also provides two alternate actions for inoperable MSIVs. CTS 3.6.3.1 Action a requires restoration of the inoperable MSIV within 4 hours and CTS 3.6.3.1 Action c requires the affected penetration flow path to be isolated by use of a closed manual valve (i.e., the MSIV) within 4 hours. ITS 3.7.2 ACTION A allows 8 hours to restore an inoperable MSIV prior to requiring a unit shutdown when in MODE 1. ITS 3.7.2 ACTION C allows 8 hours to close an inoperable MSIV prior to requiring a unit shutdown when in MODE 2 or 3. This changes the time allowed in the CTS to restore an inoperable MSIV from 4 hours to 8 hours when in MODE 1 and changes the time to close an inoperable MSIV from immediately (i.e., "maintained" closed implies an immediate requirement) or 4 hours to 8 hours when in MODE 2 or 3. The deletion of the closure allowance in CTS 3.7.1.5 Action MODE 1 is discussed in DOC M01.

The purpose of the CTS 3.7.1.5 and CTS 3.6.3.1 Actions 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 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 turbine stop valves (TSVs) are available and required by CTS 3.7.1.9 and ITS 3.7.4 to provide the required isolation for the postulated accidents. This change is also acceptable because of the low probability of an accident occurring during the allowed time which would require closure of the MSIVs. While the 8 hour Completion Time is greater than that normally allowed for containment isolation valves, MSIVs are valves that isolate a penetration that is neither part of the reactor coolant pressure boundary nor is connected directly to the containment atmosphere. Furthermore, the proposed 8 hour time is consistent with the time allowed to close the TSVs in CTS 3.7.1.9. This change is designated as less restrictive because additional time is allowed to restore parameters to within the LCO limits than was allowed in the CTS.

L03 *(Category 2 – Relaxation of Applicability)* CTS 3.6.3.1 requires the MSIVs to be OPERABLE in MODES 1, 2, 3, and 4. Furthermore, when one or more MSIVs are inoperable and a unit shutdown is required by CTS 3.6.3.1 Action d, the unit must be in HOT STANDBY (MODE 3) within 6 hours and in COLD SHUTDOWN (MODE 5) within the following 30 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. 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 deleting the MODE 4 requirements for the MSIVs. 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 in the Applicability related to the exception concerning closed MSIVs is discussed in DOC L01.

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

The purpose of the MSIV requirements in CTS 3.6.3.1 is to ensure the MSIVs can be isolated if a main steam line break (MSLB) or feedwater line break (FWLB) occurs. While the MSIVs are containment isolation valves, they do not receive a containment isolation signal. They are closed on a Steam and Feedwater Rupture Control System (SFRCS) signal. The MSIVs 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 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. Therefore, 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. 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.

L04 *(Category 4 - Relaxation of Required Action)* CTS 3.6.3.1 provides the actions for an inoperable MSIV. CTS 3.6.1.3 Action a requires the restoration of the inoperable MSIV and if not restored, CTS 3.6.1.3 Action d requires a unit shutdown to COLD SHUTDOWN (MODE 5). When in MODE 1, if an inoperable MSIV is not restored to OPERABLE status, ITS 3.7.2 ACTION B only requires a unit shutdown to MODE 2. Once in MODE 2, ITS 3.7.2 ACTION C allows an additional 8 hours to close the inoperable MSIV and requires verification every 7 days the MSIV is closed. This changes the CTS by allowing the unit an additional 8 hours to close the inoperable MSIV once the unit has been placed in MODE 2. The change also requires periodic verification the MSIV is closed.

The purpose of the CTS Actions is to provide compensatory measures when an MSIV is inoperable. This change is acceptable since the proposed Action to allow more time to isolate the MSIV after the unit has been placed in MODE 2 is already allowed in another CTS requirement. If the unit is in MODE 1, CTS 3.7.1.5 MODE 1 Actions require the MSIV to be restored, and if not restored to shut down the unit. Once in MODE 2, CTS 3.7.1.5 MODES 2 and 3 Actions allows additional time to close the MSIV prior to shutting down the unit to MODE 4. Therefore, the proposed change is consistent with an allowance already approved by the NRC. While the times to restore or close the MSIV are changed, these are justified in other DOCs. This change is designated as less restrictive because the Required Actions are less stringent in the ITS than in the CTS.

L05 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.6.3.1.1 describes tests that must be performed prior to returning a MFSV to service after maintenance, repair or replacement work is performed on the valve or its associated actuator, control or power circuit. The ITS does not include these testing requirements. This changes the CTS by deleting this post-maintenance Surveillance.

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

The purpose of CTS 4.6.3.1.1 is to verify OPERABILITY of containment isolation valves following their maintenance, repair or replacement. This change is acceptable because the deleted Surveillance Requirement is not necessary to verify that the equipment used to meet the LCO can perform its required functions. Thus, appropriate equipment continues to be tested in a manner and at a Frequency necessary to give confidence that the equipment can perform its assumed safety function. Any time the OPERABILITY of a system or component has been affected by repair, maintenance, modification, or replacement of a component, post-maintenance testing is required to demonstrate the OPERABILITY of the system or component. This is described in the Bases for ITS SR 3.0.1 and required under SR 3.0.1. The OPERABILITY requirements for the containment isolation valves are described in the Bases for ITS 3.6.3. In addition, the requirements of 10 CFR 50, Appendix B, Section XI (Test Control), provide adequate controls for test programs to ensure that testing incorporates applicable acceptance criteria. Compliance with 10 CFR 50, Appendix B, is required under the unit operating license. As a result, post-maintenance testing will continue to be performed and an explicit requirement in the Technical Specifications is not necessary. This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

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

CTS

MSIVs
3.7.2

3.7 PLANT SYSTEMS

3.7.2 Main Steam Isolation Valves (MSIVs)

3.7.1.5, 3.6.3.1 — LCO 3.7.2 Two MSIVs shall be OPERABLE.

APPLICABILITY: MODE 1,
MODES 2 and 3 except when all MSIVs are closed [and deactivated]. 1

ACTIONS

CTS	CONDITION	REQUIRED ACTION	COMPLETION TIME	
3.7.1.5 Action MODE 1, 3.6.3.1 Action a	A. One MSIV inoperable in MODE 1.	A.1 Restore MSIV to OPERABLE status.	[8] hours	1
3.7.1.5 Action MODE 1, DOC L02	B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 2.	6 hours	
3.7.1.5 Action MODES 2 and 3, 3.6.3.1 Action 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] hours Once per 7 days	1
3.7.1.5 Action MODES 2 and 3, 3.6.3.1 Action d	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

MSIVs
3.7.2

SURVEILLANCE REQUIREMENTS

CTS	SURVEILLANCE		FREQUENCY	
4.7.1.5, 4.6.3.1.3	SR 3.7.2.1	~~-------------------NOTE------------------- Only required to be performed in MODES 1 and 2.~~		2
		Verify isolation time of each MSIV is ~~≤ [6] seconds~~ within limits.	In accordance with the Inservice Testing Program	TSTF -491
DOC M05	SR 3.7.2.2	~~-------------------NOTE------------------- Only required to be performed in MODES 1 and 2.~~		2
		Verify each MSIV actuates to the isolation position on an actual or simulated actuation signal.	~~[18]~~ 24 months	1

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

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

2. The Notes to ISTS SR 3.7.2.1 and SR 3.7.2.2 have been deleted. Davis-Besse normally performs the first Surveillance in MODE 4, in accordance with the Davis-Besse IST Program. The second Surveillance can also be performed in MODE 4 when the first is performed. Therefore, the allowance to perform the SRs in MODE 3 is not required.

Improved Standard Technical Specifications (ISTS) Bases Markup and 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 ~~(HELB)~~. MSIV closure terminates flow from the unaffected (intact) steam generator. 1

main steam or feedwater

One MSIV is located in each main steam line outside of, but close to, containment. The MSIVs are downstream from the main steam safety valves (MSSVs) and ~~emergency~~ feedwater pump turbine's steam supply to prevent their being isolated from the steam generators by MSIV closure. Closing the MSIVs isolates each steam generator from the other, and isolates the turbine, Turbine Bypass System, and other auxiliary steam supplies from the steam generators. 1

auxiliary

The MSIVs close on a Steam and Feedwater Rupture Control System signal generated by either ~~low steam generator pressure or steam generator to feedwater differential pressure~~. The MSIVs fail closed on loss of control or actuation power. The MSIVs may also be actuated manually. 1

Main Steam Line Pressure – Low or Feedwater/Steam Generator Differential Pressure – High

U

A description of the MSIVs is found in the FSAR, Section [10.3] (Ref. 1). 1 2

APPLICABLE SAFETY ANALYSES

The design basis of the MSIVs is established by the containment analysis for the large steam line break (SLB) inside containment, as discussed in the FSAR, Section [6.2] (Ref. 2). It is also influenced by the accident analysis of the SLB events presented in the FSAR, Section [15.4] (Ref. 3). The design precludes the blowdown of more than one steam generator, assuming a single active component failure (i.e., the failure of one MSIV to close on demand).

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 100% RTP, the steam generator inventory and temperature are at their maximum, maximizing the mass and energy release to the containment. 1

INSERT 1

Due to reverse flow, failure of the MSIV to close contributes to the total release of the additional mass and energy in the steam headers downstream of the other MSIV. Other failures considered are the failure of a main feedwater isolation valve to close, and failure of an emergency diesel generator (EDG) to start.

1 **INSERT 1**

The design basis of the MSIVs is to isolate flow from the secondary side of the steam generators to limit blowdown following a main steam line break (MSLB) or a feedwater line break (FWLB), as discussed in the UFSAR, Sections 15.4.4 (Ref. 2) and 15.2.8 (Ref. 3), respectively. The MSIVs also isolate the steam generators to establish control of fission products released to the secondary system from the primary system following a steam generator tube rupture, as discussed in UFSAR, Section 15.4.2 (Ref. 4). The turbine stop valves (TSVs) also provide a means for main steam isolation in the event of an MSLB. Closure of the TSVs ensures that both steam generators do not blow down following an MSLB in conjunction with the MSIV associated with the unaffected steam generator failing to close. The TSV requirements are provided in ITS 3.7.4, "Turbine Stop Valves (TSVs)."

BASES

APPLICABLE SAFETY ANALYSES (continued)

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 full power is the limiting case for a post trip return to power. The analysis includes scenarios with offsite power available and with a loss of offsite power following turbine trip. With offsite power available, the reactor coolant pumps continue to circulate coolant through the steam generators, maximizing the Reactor Coolant System (RCS) cooldown. With a loss of offsite power, the response of mitigating systems, such as the High Pressure Injection (HPI) System pumps, is delayed. Significant single failures considered include failure of an MSIV to close, failure of an EDG, and failure of an HPI pump.

The MSIVs serve only a safety function and remain open during power operation. These valves operate under the following situations: 1

a. An HELB, an SLB, or main feedwater line breaks (FWLBs), inside containment. In order to maximize the mass and energy release into the containment, the analysis assumes the MSIV in the affected steam generator remains open. For this scenario, steam is discharged into containment from both steam generators until closure of the MSIV in the intact steam generator occurs. 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 MSIV in the intact loop.

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

c. A break downstream of the MSIVs will be isolated by the closure of the MSIVs. Events such as increased steam flow through the turbine or the steam bypass valves will also terminate on closing the MSIVs.

BASES

APPLICABLE SAFETY ANALYSES (continued)

~~d. Following a steam generator tube rupture, closure of the MSIVs isolates the ruptured steam generator from the intact steam generator. In addition to minimizing radiological releases, this enables the operator to maintain the pressure of the steam generator with the ruptured tube below the MSIVs' setpoints, a necessary step toward isolating flow through the rupture.~~ 1

~~e. The MSIVs are also utilized during other events such as an FWLB.~~

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

LCO

This LCO requires that the MSIV in both steam lines be OPERABLE. The MSIVs are considered OPERABLE when the isolation times are within limits and they close on an isolation actuation signal.

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 limits (Ref. 4).

APPLICABILITY

The MSIVs must be OPERABLE in MODE 1 and in MODES 2 and 3 with any MSIV~~s~~ open, when there is significant mass and energy in the RCS and steam generator; therefore, the MSIVs must be OPERABLE or closed. When the MSIVs are closed, they are already performing the safety function. 4

In MODE 4, the steam generator energy is low. Therefore, the MSIVs are not required to be OPERABLE.

In MODES 5 and 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 the MSIV ~~component~~ to OPERABLE status within [8] hours. Some repairs can be made to the MSIV with the unit hot. The [8] hour Completion Time is reasonable, considering the probability of an accident that would require actuation of the MSIVs occurring during this time interval. The turbine stop valves are also available to provide the required isolation for ~~the postulated~~ some accidents. 5 2 1

BASES

ACTIONS (continued)

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. 2

penetration that is neither part of the reactor coolant pressure boundary nor is connected directly to the containment atmosphere. 1

B.1

If the MSIV cannot be restored to OPERABLE status within [8] hours, the unit must be placed in MODE 2 ~~and the inoperable MSIV closed~~ within the next 6 hours. The Completion Time~~s are~~ is reasonable, based on operating experience, to reach MODE 2. 6 4

C.1 and C.2

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

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.

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

Inoperable MSIVs that ~~cannot be restored to OPERABLE status within the specified Completion Time, but~~ are closed, 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 these valves are in the closed position. 6

BASES

ACTIONS (continued)

D.1 and D.2

If the MSIV cannot be restored to OPERABLE status or closed in 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 MODE 2 conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.2.1

the

within the limit given in Reference 5 and is within that

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

This SR verifies that MSIV closure time of each MSIV is ~~≤ [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, because the MSIVs should not be tested at power since even a part ial stroke exercise increases the risk of a valve closure with the unit generating power. As the MSIVs are not to be tested at power, they are exempt from the ASME Code (Ref. ~~5~~ 6) requirements during operation in MODES 1 and 2. 1 TSTF-491 4 TSTF-491

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

~~This test is conducted in MODE 3, with the unit at operating temperature and pressure. This SR is modified by a Note that allows entry into and operation in MODE 3 prior to performing the SR. This allows delaying testing until MODE 3 in order 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]~~ 24 months. The ~~[18]~~ 24 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]~~ 24 month Frequency. Therefore, this Frequency is acceptable from a reliability standpoint. 2 2

BASES

REFERENCES

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

U 2. FSAR, Section [6.2]. (1) (2)

U 3. FSAR, Section [15.4]. (1) (2)

4. 10 CFR 100.11.

[5]. ASME Code for Operation and Maintenance of Nuclear Power Plants. 6 (TSTF-491)

5. [Technical Requirements Manual.] (TSTF-491) (2)

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

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

4. Typographical error corrected.

5. Editorial change for clarity. The only components required by this Specification are MSIVs.

6. Change made to be consistent with the Specification.

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.

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ATTACHMENT 3

ITS 3.7.3, MAIN FEEDWATER STOP VALVES (MFSVs), MAIN FEEDWATER CONTROL VALVES (MFCVs), AND ASSOCIATED STARTUP FEEDWATER CONTROL VALVES (SFCVs)

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

ITS

A01

ITS 3.7.3

PLANT SYSTEMS

MAIN FEEDWATER CONTROL VALVES AND STARTUP FEEDWATER CONTROL VALVES

LIMITING CONDITION FOR OPERATION

LCO 3.7.3 **3.7.1.8** The Main Feedwater Control Valves (MFCVs) and associated Startup Feedwater Control Valves (SFCVs) shall be OPERABLE.

except when all MFSVs, MFCVs, and associated SFCVs are closed or isolated by a closed manual valve — L01

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

Add proposed ACTIONS Note — A02

ACTIONS B, C, and D — With one or more MFCVs or SFCVs inoperable, isolate the affected flowpath within 72 hours and verify the flowpath is isolated once per 7 days, or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours. — M01

ACTION E

SURVEILLANCE REQUIREMENTS

SR 3.7.3.2 **4.7.1.8** Each MFCV and SFCV shall be demonstrated OPERABLE by performance of Surveillance Requirement 4.3.2.2.3. — A03

Add proposed SR 3.7.3.3 — M02

ITS

A01

ITS 3.7.3

CONTAINMENT SYSTEMS

3/4.6.3 CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

A04

LCO 3.7.3, SR 3.7.3.1

3.6.3.1 All containment isolation valves shall be OPERABLE with isolation times less than or equal to required isolation times.*

except when all MFSVs. MFCVs, and associated SFCVs are closed or isolated by a closed manual valve — L01

APPLICABILITY: MODES 1, 2, 3 ~~and 4~~. — L02

ACTION:

Add proposed ACTIONS Note — A02

ACTIONS A and D

With one or more of the isolation valve(s) inoperable, either:

a. ~~Restore the inoperable valve(s) to OPERABLE status within 4 hours, or~~ — A05

**b. Isolate each affected penetration within 4 hours by use of at least one deactivated automatic valve secured in the isolation position, or — See ITS 3.6.3

ACTIONS A and D

**c. Isolate each affected penetration within 4 hours by use of at least one closed manual valve or blind flange; or — L03; See ITS 3.6.3

ACTION E

d. Be in at least HOT STANDBY within the next 6 hours and in ~~COLD SHUTDOWN~~ MODE 4 within the ~~following 30~~ 12 hours. — L02

SURVEILLANCE REQUIREMENTS

~~4.6.3.1.1 The isolation valves shall be demonstrated OPERABLE prior to returning the valve to service after maintenance, repair or replacement work that could affect the valve's performance is performed on the valve or its associated actuator, control or power circuit by performance of a cycling test and verification of isolation time.~~ — L04

* Surveillance testing of valves MS100, MS101, ICS11A and ICS11B is not required prior to entering MODE 4 but shall be performed prior to entering MODE 3. — See ITS 3.6.3

** ~~The provisions of Specification 3.0.4 are not applicable.~~ — A06

Selected valves may be opened on an intermittent basis under administrative controls. — See ITS 3.6.3

DAVIS-BESSE, UNIT 1 3/4 6-14 Amendment No. 147

ITS

A01

ITS 3.7.3

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.6.3.1.2 Each isolation valve shall be demonstrated OPERABLE at least once each REFUELING INTERVAL, by:

See ITS 3.6.3

a. Verifying that on a containment isolation test signal, each automatic isolation valve actuates to its isolation position.

b. DELETED

See ITS 3.6.3

SR 3.7.3.1 4.6.3.1.3 The isolation time of each power operated or automatic valve shall be determined to be within its limit when tested pursuant to Specification 4.0.5.

Add proposed SR 3.7.3.3

M02

DISCUSSION OF CHANGES
ITS 3.7.3, MAIN FEEDWATER STOP VALVES (MFSVs), MAIN FEEDWATER CONTROL VALVES (MFCVs), AND ASSOCIATED STARTUP FEEDWATER CONTROL VALVES (SFCVs)

ADMINISTRATIVE CHANGES

A01 In the conversion of the Davis-Besse 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-1430, Rev. 3.1, "Standard Technical Specifications-Babcock and Wilcox 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 3.7.1.8 Action states, in part, that when one or more MFCVs or SFCVs are inoperable, to isolate the affected flowpath. CTS 3.6.3.1 Action states, in part, that when one or more isolation valves are inoperable, to isolate the affected penetration. ITS 3.7.3 ACTIONS Note states "Separate Condition entry is allowed for each MFSV, MFCV, and SFCV." This changes the CTS by explicitly specifying separate condition entry for each inoperable MFSV, MFCV, and SFCV.

This change is acceptable because it clearly states the current requirement. The CTS considers each MFSV, MFCV, and SFCV to be separate and independent from the others. This change is designated as administrative because it does not result in a technical change to the Specifications.

A03 CTS 4.7.1.8 requires each MFCV and SFCV be demonstrated OPERABLE "by performance of Surveillance Requirement 4.3.2.2.3." Specification 3.3.2.2 provides the requirements for the Steam and Feedwater Rupture Control System (SFRCS) Instrumentation. CTS 4.3.2.2.3 requires a SFRCS RESPONSE TIME test once per REFUELING INTERVAL (i.e., every 24 months). Thus, the CTS 4.7.1.8 requirement is referencing the MFCV and SFCV closure time requirement. ITS SR 3.7.3.2 requires verification that the isolation time of each MFCV and SFCV is within limits every 24 months. This changes the CTS by explicitly stating the MFCV and SFCV testing requirement in the MFCV and SFCV Specification.

This change is acceptable because it results in no technical change to the Technical Specifications. The change explicitly states the actual MFCV and SFCV requirements in the MFCV and SFCV Specification, in lieu of providing a cross-reference to the Instrumentation Specification that requires a RESPONSE TIME test. This change is designated as administrative because it does not result in any technical change to the CTS.

A04 CTS 3.6.3.1 requires the containment isolation valves to be OPERABLE with isolation times less than or equal to required isolation times. ITS 3.7.3, in part, requires the MFSVs to be OPERABLE, and ITS SR 3.7.3.1 requires the MFSVs isolations time to be within limits. This changes the CTS by placing the MFSVs into a Specification with the other main feedwater isolation valves (MFIVs); i.e., the MFCVs and SFCVs.

DISCUSSION OF CHANGES
ITS 3.7.3, MAIN FEEDWATER STOP VALVES (MFSVs), MAIN FEEDWATER CONTROL VALVES (MFCVs), AND ASSOCIATED STARTUP FEEDWATER CONTROL VALVES (SFCVs)

The purpose of ITS 3.7.3 is to provide all the requirements for the MFIVs (MFSVs, MFCVs, and SFCVs) in a single Specification. As such, this change is acceptable since it does not result in any technical changes. Any technical changes as a result of placing the MFSVs in a common Specification with the other MFIVs 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.

A05 When one or more of the MFSVs are inoperable, CTS 3.6.3.1 Action a requires restoring the inoperable valve(s) to OPERABLE status within 4 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 DOC L03).

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

A06 CTS 3.6.3.1 Action c provides the actions for inoperable MFSVs and includes Note **, which states that the provisions of Specification 3.0.4 are not applicable. ITS 3.7.3 does not include this Note. This changes the CTS by deleting the specific exception to Specification 3.0.4.

This change is acceptable because it results in no technical change to the Technical Specifications. CTS 3.0.4 has been revised as discussed in the Discussion of Changes for ITS Section 3.0. ITS LCO 3.0.4, in part, states that when an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time. ITS 3.7.3 ACTIONS A and D require the plant to close the MFSV or isolate the MFSV or affected flow path and allow operation to continue for an unlimited period of time. Therefore, because the ITS still allows the plant to change a MODE or other specified condition in the Applicability, this change is considered to be consistent with the current allowances. This change is designated as administrative because it does not result in a technical change to the CTS.

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DISCUSSION OF CHANGES
ITS 3.7.3, MAIN FEEDWATER STOP VALVES (MFSVs), MAIN FEEDWATER CONTROL VALVES (MFCVs), AND ASSOCIATED STARTUP FEEDWATER CONTROL VALVES (SFCVs)

MORE RESTRICTIVE CHANGES

M01 The CTS 3.7.1.8 Action states, in part, that with one or more MFCVs or SFCVs inoperable, to isolate the affected flowpath within 72 hours. ITS 3.7.3 ACTION D will require isolation of the affected flowpath within 8 hours if a MFSV is inoperable in the same flowpath as the inoperable MFCV or SFCV. This changes the CTS by reducing the time to isolate the affected penetration if a MFSV is inoperable concurrent with an inoperable MFCV or SFCV in the same flowpath.

The purpose of ITS 3.7.3 ACTION D is to limit the time valves in the same flowpath are concurrently inoperable. This change is acceptable since when both the MFSV and the MFCV or SFCV are inoperable in the same flowpath, no MFIVs are OPERABLE to automatically isolate the affected flowpath and perform the required safety function. Therefore, the time allowed to isolate the flowpath is restricted to 8 hours in lieu of the current 72 hours. This change is designated as more restrictive since less time is provided to isolate the affected flowpath in the ITS than is provided in the CTS.

M02 CTS 3.7.1.8 does not include a requirement to verify that each MFCV and SFCV actuate to the isolation position on an actual or simulated actuation signal. CTS 3.6.3.1 does not include a requirement to verify that each MFSV actuate to the isolation position on an actual or simulated actuation signal. (While CTS 4.6.3.1.2 requires an actuation test, the test signal specified, a containment isolation test signal, does not actuate the MFSVs; thus the MFSVs are not covered by an actuation test). ITS SR 3.7.3.3 is being added to perform this requirement every 24 months. This changes the CTS by adding additional Surveillance Requirements.

The purpose of ITS SR 3.7.3.3 is to verify that the MFSVs, MFCVs, and SFCVs can close on an actual or simulated actuation signal. This change is acceptable because the test is conducted to ensure that the MFSVs, MFCVs, and SFCVs will perform their safety function. The 24 month Frequency is consistent with CTS 4.7.1.8, which requires the isolation time of each MFCV and SFCV to be measured. The Frequency is also consistent with CTS 4.3.2.2.3, the SFRCS RESPONSE TIME Surveillance, which requires the isolation time of each MFSV, MFCV, and SFCV to be measured. This change is designated as more restrictive since a Surveillance Requirement is being added to the ITS that is not required by the CTS.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

None

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DISCUSSION OF CHANGES
ITS 3.7.3, MAIN FEEDWATER STOP VALVES (MFSVs), MAIN FEEDWATER CONTROL VALVES (MFCVs), AND ASSOCIATED STARTUP FEEDWATER CONTROL VALVES (SFCVs)

LESS RESTRICTIVE CHANGES

L01 *(Category 2 – Relaxation of Applicability)* CTS 3.7.1.8 is applicable in MODES 1, 2, and 3. CTS 3.6.3.1 is applicable in MODES 1, 2, 3, and 4. ITS LCO 3.7.3 is applicable in MODES 1, 2, and 3 except when all MFSVs, MFCVs, and SFCVs are closed or isolated by a closed manual valve. This changes the CTS by making the Specifications not applicable in MODES 1, 2, and 3 when all MFSVs, MFCVs, and SFCVs are closed or isolated by a closed manual valve. The change in the MODE 4 Applicability for CTS 3.6.3.1 is discussed in DOC L02.

The purpose of the ITS 3.7.3 Applicability is to ensure that the MFSVs, MFCVs, and SFCVs are OPERABLE and capable of closing to support the safety analyses. 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. 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. This change is designated as less restrictive because the ITS LCO requirements are applicable in fewer operating conditions than in the CTS.

L02 (Category 2 – Relaxation of Applicability) CTS 3.6.3.1 requires the MFSVs to be OPERABLE in MODES 1, 2, 3, and 4. Furthermore, when one or more MFSVs are inoperable and a unit shutdown is required by CTS 3.6.3.1 Action d, the unit must be in HOT STANDBY (MODE 3) within 6 hours and in COLD SHUTDOWN (MODE 5) within the following 30 hours. ITS 3.7.3 requires the MFSVs to be OPERABLE in MODES 1, 2, and 3 except when all MFSVs, MFCVs, and SFCVs are closed or isolated by a closed manual valve. When a shutdown of the unit is required due to an inoperable MFSV, 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 deleting the MODE 4 requirements for the MFSVs. 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 in the Applicability related to the exception concerning closed or isolated MFSVs, MFCVs, and SFCVs is discussed in DOC L01.

The purpose of the MFSV requirements in CTS 3.6.3.1 is to ensure the MFSVs can be isolated if a main steam line break (MSLB) or feedwater line break (FWLB) occurs. While the MFSVs are containment isolation valves, they do not receive a containment isolation signal. They are closed on a Steam and Feedwater Rupture Control System (SFRCS) signal. The MFSVs 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 MFSVs 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. Therefore, 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. Due to this change in Applicability, the shutdown action has also been modified to only require entering MODE 4, which will exit the new

DISCUSSION OF CHANGES
ITS 3.7.3, MAIN FEEDWATER STOP VALVES (MFSVs), MAIN FEEDWATER CONTROL VALVES (MFCVs), AND ASSOCIATED STARTUP FEEDWATER CONTROL VALVES (SFCVs)

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.

L03 (Category 3 – Relaxation of Completion Time) CTS 3.6.3.1 Action c allows 4 hours to isolate the affected penetration when one or more of the MFSVs are inoperable. ITS 3.7.3 ACTION A will allow 72 hours to close or isolate the MFSV when a MFSV is inoperable, and once isolated, will require verification that the flowpath remains isolated every 7 days. However, if a MFSV and a MFCV or a SFCV in the same flowpath are concurrently inoperable, ITS 3.7.3 ACTION D will only allow 8 hours to isolate the affected flowpath. This changes the CTS by extending the Completion Time from 4 hours to 72 hours when a MFSV is inoperable and from 4 hours to 8 hours when both a MFSV and either a MFCV or SFCV in the same flowpath are concurrently inoperable.

The purpose of CTS 3.6.3.1 Action c is to provide a degree of assurance that the affected flowpath with an inoperable MFSV 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 MFSVs are containment isolation valves, they do not receive a containment isolation signal. They are closed on a Steam and Feedwater Rupture Control System (SFRCS) signal. The MFSVs help isolate the steam generators following a MSLB or MFWB. Furthermore, the MFSVs 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 MFSVs 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 MFIVs in the associated flowpath (i.e., the MFCV and SFCV). The 8 hours is a reasonable time period considering the relative stability of a system to act as a penetration isolation boundary and the low probability of a MSLB or FWLB. In addition, the periodic 7 day verification will ensure that the closed or isolated MFSV remains in the correct position. This change is designated as less restrictive because additional time is allowed to isolate the MFSVs than was allowed in the CTS.

L04 (Category 5 – Deletion of Surveillance Requirement) CTS 4.6.3.1.1 describes tests that must be performed prior to returning a MFSV to service after maintenance, repair or replacement work is performed on the valve or its associated actuator, control or power circuit. The ITS does not include these testing requirements. This changes the CTS by deleting this post-maintenance Surveillance.

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DISCUSSION OF CHANGES
ITS 3.7.3, MAIN FEEDWATER STOP VALVES (MFSVs), MAIN FEEDWATER CONTROL VALVES (MFCVs), AND ASSOCIATED STARTUP FEEDWATER CONTROL VALVES (SFCVs)

The purpose of CTS 4.6.3.1.1 is to verify OPERABILITY of containment isolation valves following their maintenance, repair or replacement. This change is acceptable because the deleted Surveillance Requirement is not necessary to verify that the equipment used to meet the LCO can perform its required functions. Thus, appropriate equipment continues to be tested in a manner and at a Frequency necessary to give confidence that the equipment can perform its assumed safety function. Any time the OPERABILITY of a system or component has been affected by repair, maintenance, modification, or replacement of a component, post-maintenance testing is required to demonstrate the OPERABILITY of the system or component. This is described in the Bases for ITS SR 3.0.1 and required under SR 3.0.1. The OPERABILITY requirements for the containment isolation valves are described in the Bases for ITS 3.6.3. In addition, the requirements of 10 CFR 50, Appendix B, Section XI (Test Control), provide adequate controls for test programs to ensure that testing incorporates applicable acceptance criteria. Compliance with 10 CFR 50, Appendix B, is required under the unit operating license. As a result, post-maintenance testing will continue to be performed and an explicit requirement in the Technical Specifications is not necessary. This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

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

CTS

 2

3.7 PLANT SYSTEMS

3.7.3 [Main Feedwater Stop Valves (MFSVs), Main Feedwater Control Valves (MFCVs), and Associated Startup Feedwater Control Valves (SFCVs)] 2

and

3.7.1.8, 3.6.3.1 LCO 3.7.3 [Two] [MFSVs], [MFCVs], [or] associated SFCVs] shall be OPERABLE. 2 3

and

APPLICABILITY: MODES 1, 2, and 3 except when all [MFSVs], [MFCVs], [or] associated SFCVs] are closed [and deactivated] [or isolated by a closed manual valve]. 2 3

ACTIONS

MFSV, MFCV, and SFCV

--NOTE--

DOC A02 Separate Condition entry is allowed for each ~~valve~~. 1

CTS	CONDITION	REQUIRED ACTION	COMPLETION TIME	
3.6.3.1 Action c	A. One [or more] [MFSV][s] [in one or more flow paths] inoperable.	A.1 Close or isolate [MFSV].	[8 or] 72 [hours]	4 2
		AND		
		A.2 Verify [MFSV] is closed or isolated.	Once per 7 days	2
3.7.1.8 Action	B. One [or more] [MFCV][s] [in one or more flow paths] inoperable.	B.1 Close or isolate [MFCV].	[8 or] 72 [hours]	4 2
		AND		
		B.2 Verify [MFCV] is closed or isolated.	Once per 7 days	2
3.7.1.8 Action	C. One [or more] [SFCV][s] [in one or more flow paths] inoperable.	C.1 Close or isolate [SFCV].	[8 or] 72 [hours]	4 2
		AND		
		C.2 Verify [SFCV] is closed or isolated.	Once per 7 days	2

CTS

ACTIONS (continued)

CTS	CONDITION	REQUIRED ACTION		COMPLETION TIME	
3.7.1.8 Action, 3.6.3.1 Action c	D. Two valves in the same flow path inoperable for one or more flow paths.	D.1	Isolate affected flow path.	8 hours	4
3.7.1.8 Action, 3.6.3.1 Action d	E. Required Action and associated Completion Time not met.	E.1	Be in MODE 3.	6 hours	
		[AND			2
		E.2	Be in MODE 4.	12 hours]	1 2

SURVEILLANCE REQUIREMENTS

CTS	SURVEILLANCE		FREQUENCY	
4.6.3.1.3	SR 3.7.3.1	~~-----NOTE----- Only required to be performed in MODES 1 and 2.~~		5
		Verify the isolation time of each [MFSV] ~~, [MFCV], and [SFCV]~~ is ~~≤ [7] seconds~~ within limits.	In accordance with the Inservice Testing Program	2 TSTF -491
6 INSERT 1				
DOC M02	SR 3.7.3.~~2~~ 3	~~-----NOTE----- Only required to be performed in MODES 1 and 2.~~		6 5
		Verify each [MFSV], [MFCV], and [SFCV] actuates to the isolation position on an actual or simulated actuation signal.	[1~~8~~] 24 months	2

CTS 3.7.3

6 **INSERT 1**

4.7.1.8	SR 3.7.3.2	Verify the isolation time of each MFCV and SFCV is within limits.	24 months

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.3, MAIN FEEDWATER STOP VALVES (MFSVs), MAIN FEEDWATER CONTROL VALVES (MFCVs), AND ASSOCIATED STARTUP FEEDWATER CONTROL VALVES (SFCVs)

1. The ISTS 3.7.3 ACTIONS Note has been modified to list the specific valves to which the Note applies (MFSVs, MFCVs, and SFCVs) instead of the generic term "valves." This is also consistent with similar Specifications in Section 3.7 (e.g., ITS 3.7.1 and ITS 3.7.2).

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

3. Typographical error corrected. The word "or" should be "and," since both MFCVs and their associated SFCVs are required to be OPERABLE.

4. Editorial change made to ISTS 3.7.3 Conditions B and C for consistency with other similar Specifications in Section 3.7 (e.g., ITS 3.7.1 and ITS 3.7.2). Furthermore, the proposed words are consistent with the wording in the ACTIONS Note.

5. The Notes to ISTS SR 3.7.3.1 and SR 3.7.3.2 have been deleted. Davis-Besse normally performs the isolation time tests for the MFSVs, MFCVs, and SFCVs in MODE 4. ISTS SR 3.7.3.2, while not currently required in the Davis-Besse CTS, can also be performed in MODE 4 when the isolation time tests are performed. Therefore, the allowance to perform the SRs in MODE 3 is not required.

6. ISTS SR 3.7.3.1 requires verification of the isolation times if the MFSVs, MFCVs, and SFCVs at a Frequency in accordance with the Inservice Testing (IST) Program. The Davis-Besse IST Program does not include the MFCVs or SFCVs. Therefore, ITS SR 3.7.3.1 will only require verification of the isolation time of the MFSVs in accordance with the IST Program and new ITS SR 3.7.3.2 will require verification of the isolation times of the MFCVs and SFCVs at a 24 month Frequency. The 24 month Frequency is consistent with the Frequency of CTS 4.3.2.2.3, which is the Surveillance referenced by CTS 4.7.1.8, the current MFCV and SFCV isolation time Surveillance.

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

All changes are 1 unless otherwise noted

[MFSVs, MFCVs, and Associated SFCVs] 3
B 3.7.3

B 3.7 PLANT SYSTEMS

B 3.7.3 [Main Feedwater Stop Valves (MFSVs), Main Feedwater Control Valves (MFCVs), and Associated Startup Feedwater Control Valves (SFCVs)] 3

BASES

BACKGROUND

The main feedwater isolation valves (MFIVs) for each steam generator consist of the MFSVs, MFCVs, and the SFCVs. The MFIVs isolate main feedwater (MFW) flow to the secondary side of the steam generators following a high energy line break (HELB). Closure of the MFIVs terminates flow to both steam generators, terminating the event for feedwater line breaks (FWLBs) occurring upstream of the MFIVs. The consequences of events occurring in the main steam lines or in the feedwater lines downstream of the MFIVs will be mitigated by their closure. Closing the MFIVs 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. main M

The MFIVs close on receipt of a Steam and Feedwater Rupture Control System (SFRCS) signal generated by either ~~low steam generator pressure or steam generator/feedwater differential pressure~~ Main Steam Line Pressure – Low or Feedwater/Steam Generator Differential Pressure – High. The MFIVs can also be closed manually.

~~[The MFIVs and associated bypass valves close on receipt for a safety injection - low T_{avg} coincident with reactor trip or steam generator water level - high high signal. They may also be actuated manually. In addition to the MFIVs and associated bypass valves, a check valve inside containment is available to isolate the feedwater line penetrating containment and to ensure that the consequences of events do not exceed the capacity of the containment heat removal systems.]~~ 3

A description of the MFIVs is found in the FSAR, Section [10.4.7] (Ref. 1).

APPLICABLE SAFETY ANALYSES

The design basis of the MFIVs is established by the analysis for the ~~large~~ M SLB. It is also influenced by the accident analysis for the large FWLB. Closure of the MFIVs may also be relied on to terminate a steam break for core response analysis and excess feedwater event upon the receipt of a steam generator water level - high signal.

Failure of an MFIV to close following an SLB, FWLB, or excess feedwater event, 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 satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

BASES

LCO

This LCO ensures that the MFIVs will isolate MFW flow to the steam generators following a FWLB or a main steam line break. These valves MFSVs will also isolate the nonsafety related portions from the safety related portions of the system.

[Two] [MFSVs], [MFCVs], [or] and associated SFCVs] are required to be OPERABLE. The MFIVs are considered OPERABLE when the isolation times are within limits and they close on an isolation actuation signal. 3 2

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

APPLICABILITY

The [MFSVs], [MFCVs], [or] and associated SFCVs] must be OPERABLE whenever there is significant mass and energy in the RCS and steam generators. This ensures that in the event of an ~~HELB~~ MSLB or FWLB, a single failure cannot result in the blowdown of more than one steam generator. 2

In MODES 1, 2, and 3, the [MFSVs] [MFCVs], [or] and associated SFCVs] are required to be OPERABLE in order 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 or isolated by a closed manual valve, they are already performing their safety function. 2 4

In MODES 4, 5, and 6, steam generator energy is low. Therefore, the [MFSVs], [MFCVs] [or] and associated SFCVs] are not required for isolation of potential high energy secondary system pipe breaks in these MODES. 2

ACTIONS

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

A.1 and A.2

With one or more [MFSVs] ~~in one or more flow paths~~ inoperable, action must be taken to ~~restore the affected valves to OPERABLE status, or to~~ close or isolate the inoperable affected valves within [8 or 72] hours. When ~~these~~ this valve~~s~~ ~~are~~ is closed or isolated, ~~they are~~ it is performing ~~their~~ its required safety function. 4 2

[MFSVs, MFCVs, and Associated SFCVs] 3
B 3.7.3

BASES

ACTIONS (continued)

[For units with only one MFIV per feedwater line: The [8] hour Completion Time is reasonable to close the MFIV or its associated bypass valve which includes performing a controlled unit shutdown to MODE 2. The Completion Time is reasonable, based on operating experience, to reach MODE 2 from full power conditions with the MFIVs closed, in an orderly manner and without challenging unit systems.] 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. 3 3

An is
Inoperable [MFSVs] 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. 3 1
it is this is

B.1 and B.2 2

or more s
With one [MFCV] 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 [8 or 72] hours. When these valves are closed or isolated, they are performing their required safety function. 4 2
the this is it is its

[For units with only one MFIV per feedwater line: The [8] hour Completion Time is reasonable, based on operating experience, to close the MFIV or its associated bypass valve.] 3

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. 3 1
MFSVs

An is
Inoperable [MFCVs] 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. 3 1
it is

BASES

ACTIONS (continued)

C.1 and C.2 2

or more s

With one [SFCV] ~~in one or more flow paths~~ inoperable, action must be 2
taken to ~~restore the affected valves to OPERABLE status, or to~~ close or 4
isolate the inoperable affected valve~~s~~ within ~~[8 or~~ 72~~]~~ hours. When ~~these~~ this
valve~~s~~ ~~are~~ is closed or isolated, ~~they are~~ it is performing ~~their~~ its required safety 2
function.

~~[For units with only one MFIV per feedwater line: The [8] hour Completion Time is reasonable, based on operating experience, to close the MFIV or its associated bypass valve.]~~ 3

The ~~[~~72~~]~~ hour Completion Time takes into account the redundancy 3
afforded by the remaining OPERABLE ~~valves~~ MFSVs and the low probability of 1
an event occurring during this time period that would require isolation of
the MFW flow paths.

An ~~Inoperable~~ inoperable SFCV~~s~~ that ~~are~~ is closed or isolated must be verified on a 1
periodic basis that ~~they are~~ it is 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.

D.1

With two inoperable valves in the same flow path (i.e., an inoperable MFSV and either an inoperable MFCV or SFCV) there ~~may be~~ is no
redundant system to operate automatically and perform the required
safety function. ~~Although the containment can be isolated with the failure to 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 must be isolated within 1 4
8 hours. The 8 hour Completion Time is reasonable, based on operating 4
experience, to close the MFIV or otherwise isolate the affected flow path.

BASES

ACTIONS (continued)

E.1 and E.2

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

any Required Action and

is not met

SURVEILLANCE REQUIREMENTS

SR 3.7.3.1 and SR 3.7.3.2 2

These SRs verify

~~This SR verifies~~ that the closure time of each [MFSV], [MFCV], and [associated SFCV] is ≤ 7 seconds. 2 3 TSTF-491

The [MFSV], [MFCV], and [associated SFCV] isolation time [is] assumed in the accident and containment analyses. This Surveillance is normally performed upon returning the unit to operation following a refueling outage. The [MFSV], [MFCV], and [associated SFCV] should not be tested at power since even a part stroke exercise increases the risk of a valve closure with the unit generating power. This is consistent with the ASME Code (Ref. 2) requirements during operation in MODES 1 and 2. 1 TSTF-491 3 5 TSTF-491 1

These are 2 SRs SR s ial 2 3

within the limit given in Reference 2 and is within the 1

3.7.3.1 2 This SR also verifies the valve closure time is in accordance with the Inservice Testing Program.

This SR is modified by a Note that allows entry into and operation in MODE 3 prior to performing the SR. 2

The Frequency for this SR is in accordance with the Inservice Testing Program. 2

3.7.3.1

and for SR 3.7.3.2 is 24 months

SR 3.7.3.2 3

This SR verifies that each [MFSV, MFCV, and associated SFCV] can close on an actual or simulated actuation signal. This Surveillance is normally performed upon returning the plant to operation following a refueling outage. 3

24

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. 3 3

24

BASES

REFERENCES	1. FSAR, ~~Section~~ [10.4.7]. 1 2. [Technical Requirements Manual.] TSTF-491 1 3
2 3	2. ASME Code for Operation and Maintenance of Nuclear Power Plants. TSTF-491 1

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.3 BASES, MAIN FEEDWATER STOP VALVES (MFSVs), MAIN FEEDWATER CONTROL VALVES (MFCVs), AND ASSOCIATED STARTUP FEEDWATER CONTROL VALVES (SFCVs)

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

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

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

4. Changes are made to reflect the Specification.

5. Typographical error corrected.

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS ITS 3.7.3, MAIN FEEDWATER STOP VALVES (MFSVs), MAIN FEEDWATER CONTROL VALVES (MFCVs), AND ASSOCIATED STARTUP FEEDWATER CONTROL VALVES (SFCVs)

There are no specific NSHC discussions for this Specification.

ATTACHMENT 4

ITS 3.7.4, TURBINE STOP VALVES (TSVs)

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

ITS

A01

ITS 3.7.4

PLANT SYSTEMS

TURBINE STOP VALVES

LIMITING CONDITION FOR OPERATION

3.7.4 3.7.1.9 Four Turbine Stop Valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3. except when all TSVs are closed L01

ACTION: Add proposed ACTIONS Note A02

ACTION A With one or more Turbine Stop Valves inoperable, close the inoperable valve(s) within 8 hours and verify the valve(s) is closed once per 7 days, or be in at least HOT STANDBY within the next 6 hours
ACTION B and in HOT SHUTDOWN within the following 6 hours.

SURVEILLANCE REQUIREMENTS

SR 3.7.4.1 4.7.1.9 Each Turbine Stop Valve shall be demonstrated OPERABLE by performance of Surveillance Requirement 4.3.2.2.3. A03

Add proposed SR 3.7.4.2 M01

DISCUSSION OF CHANGES
ITS 3.7.4, TURBINE STOP VALVES (TSVs)

ADMINISTRATIVE CHANGES

A01 In the conversion of the Davis-Besse 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-1430, Rev. 3.1, "Standard Technical Specifications-Babcock and Wilcox 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 3.7.1.9 Action states, in part, that when one or more turbine stop valves (TSVs) are inoperable, close the inoperable valve(s) within 8 hours and verify that the valve(s) are closed once per 7 days. ITS 3.7.4 ACTIONS Note states "Separate Condition entry is allowed for each TSV." This changes the CTS by explicitly specifying separate condition entry for each inoperable TSV.

This change is acceptable because it clearly states the current requirement. The CTS considers each TSV to be separate and independent from the others. This change is designated as administrative because it does not result in a technical change to the Specification.

A03 CTS 4.7.1.9 requires each TSV be demonstrated OPERABLE "by performance of Surveillance Requirement 4.3.2.2.3." Specification 3.3.2.2 provides the requirements for the Steam and Feedwater Rupture Control System (SFRCS) Instrumentation. CTS 4.3.2.2.3 requires a SFRCS RESPONSE TIME test, and footnote *, in part, describes how the TSV closure portion of the SFRCS RESPONSE TIME is to be measured. Thus, the CTS 4.7.1.9 requirement is referencing the TSV closure time requirement. ITS SR 3.7.4.1 requires verification that the isolation time of each TSV is within limits. This changes the CTS by explicitly stating the TSV testing requirement in the TSV Specification.

This change is acceptable because it results in no technical change to the Technical Specifications. The change explicitly states the actual TSV requirement in the TSV Specification, in lieu of providing a cross-reference to the Instrumentation Specification that requires a RESPONSE TIME test. This change is designated as administrative because it does not result in any technical change to the CTS.

MORE RESTRICTIVE CHANGES

M01 CTS 3.7.1.9 does not include a requirement to verify that each TSV actuates to the isolation position on an actual or simulated actuation signal. ITS SR 3.7.4.2 is being added to perform this requirement every 24 months. This changes the CTS by adding an additional Surveillance Requirement.

The purpose of ITS SR 3.7.4.2 is to verify that the TSVs can close on an actual or simulated actuation signal. This change is acceptable because the test is conducted to ensure that the TSVs will perform their safety function. The 24 month Frequency is consistent with CTS 4.7.1.9, which requires the isolation

DISCUSSION OF CHANGES
ITS 3.7.4, TURBINE STOP VALVES (TSVs)

time of each TSV to be measured. This change is considered more restrictive because a new Surveillance Requirement is added to the ITS that was not included in the CTS.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

None

LESS RESTRICTIVE CHANGES

L01 *(Category 2 – Relaxation of Applicability)* CTS 3.7.1.9 is applicable in MODES 1, 2, and 3. ITS LCO 3.7.4 is applicable in MODE 1, and in MODES 2 and 3 except when all TSVs are closed. This changes the CTS by making the Specification not applicable in MODES 2 and 3 when all TSVs are closed.

The purpose of the ITS 3.7.4 Applicability is to ensure that the TSVs are OPERABLE and capable of closing to support the safety analyses. 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. When all the valves are in the closed position, they are in their assumed accident position. Furthermore, this change is also consistent with the Applicability of ISTS 3.7.2, "Main Steam Isolation Valves (MSIVs)." At Davis-Besse, the TSVs perform a similar function and are required for the main steam line break accident, which is one of the accident scenarios listed for the MSIVs in the ISTS 3.7.2 Bases. This change is designated as less restrictive because the ITS LCO requirements are applicable in fewer operating conditions than in the CTS.

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

1

CTS

3.7 PLANT SYSTEMS

3.7.4 Turbine Stop Valves (TSVs)

3.7.1.9 LCO 3.7.4 Four TSVs shall be OPERABLE.

APPLICABILITY: MODE 1,
MODES 2 and 3 except when all TSVs are closed.

ACTIONS

---NOTE---

DOC A02 Separate Condition entry is allowed for each TSV.

	CONDITION	REQUIRED ACTION	COMPLETION TIME
Action	A. One or more TSVs inoperable.	A.1 Close inoperable TSV. AND A.2 Verify inoperable TSV is closed.	8 hours Once per 7 days
Action	B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY
4.7.1.9	SR 3.7.4.1	Verify isolation time of each TSV is within limits.	24 months
DOC M01	SR 3.7.4.2	Verify each TSV actuates to the isolation position on an actual or simulated actuation signal.	24 months

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.4, TURBINE STOP VALVES (TSVs)

1. This Specification has been added to ensure the OPERABILITY of the Turbine Stop Valves (TSVs). The closure of the TSVs is assumed in the main steam line break accident analysis and TSV requirements are provided in the CTS. Therefore, the Specification is needed to satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

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

1

B 3.7 PLANT SYSTEMS

B 3.7.4 Turbine Stop Valves (TSVs)

BASES

BACKGROUND	The TSVs are designed to quickly shut off steam flow to the turbine and prevent turbine overspeed under emergency conditions. TSV closure also terminates flow from the unaffected (intact) steam generator following a main steam line break (MSLB). Four turbine stop valves are located in front and below the turbine unit. Steam from one steam generator passes through two of the TSVs (in parallel pathways) and steam from the other steam generator passes through the other two TSVs (in parallel pathways). The TSVs are closed on a Steam and Feedwater Rupture Control System (SFRCS) signal generated by either Main Steam Line Pressure - Low or Feedwater/Steam Generator Differential Pressure - High to prevent blowdown of both steam generators during a MSLB. A description of the turbine stop valves are found in the UFSAR, Section 10.2 (Ref. 1).
APPLICABLE SAFETY ANALYSES	The design basis of the TSVs are established by the accident analysis of the MSLB events presented in the UFSAR, Section 15.4 (Ref. 2). Credit is taken in the MSLB analysis for TSV closure. The TSVs provide a redundant means for main steam line isolation in the event of an MSLB downstream of the MSIVs. The TSVs satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).
LCO	This LCO requires all four TSVs to be OPERABLE. The TSVs are considered OPERABLE when the isolation times are within limits and they close on an isolation actuation signal. This LCO provides assurance that the TSVs will perform their design safety function to mitigate the consequences of accidents that could result in offsite exposures comparable to the 10 CFR 100 limits (Ref. 3).
APPLICABILITY	The TSVs must be OPERABLE in MODE 1 and in MODES 2 and 3 with any TSV open, when there is significant mass and energy in the Reactor Coolant System and steam generator; therefore, the TSVs must be OPERABLE or closed. When all the TSVs are closed, they are already performing the safety function. In MODE 4, the steam generator energy is low. Therefore, the TSVs are not required to be OPERABLE.

BASES

APPLICABILITY (continued)

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

ACTIONS

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

A.1 and A.2

With one TSV inoperable, action must be taken to close the inoperable TSV within 8 hours. The 8 hour Completion Time is reasonable, considering the probability of an accident that would require actuation of the TSVs occurring during this time interval. The MSIVs are also available to provide the required isolation for the postulated accidents.

Inoperable TSVs that are closed must be verified on a periodic basis that they are 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 TSV status indications available in the control room, and other administrative controls, to ensure that these valves are closed.

B.1 and B.2

If any Required Action and associated Completion Time cannot be met, 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 MODE 1 conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.4.1

This SR verifies that the closure time of each TSV is within the limits in Reference 4 and is within that assumed in the accident and containment analyses. This SR is normally performed upon returning the unit to operation following a refueling outage, because the TSVs should not be tested at power since even a part stroke exercise increases the risk of a valve closure with the unit generating power.

The Frequency of TSV testing is every 24 months. The 24 month Frequency for testing is based on the refueling cycle. Operating

BASES

SURVEILLANCE REQUIREMENTS (continued)

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

SR 3.7.4.2

This SR verifies that each TSV 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 TSV testing is every 24 months. The 24 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 24 month Frequency. Therefore, this Frequency is acceptable from a reliability standpoint.

REFERENCES

1. UFSAR, Section 10.2.
2. UFSAR, Section 15.4.
3. 10 CFR 100.
4. Technical Requirements Manual.

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.4 BASES, TURBINE STOP VALVES (TSVs)

1. This Specification Bases has been added consistent with the addition of the Specification.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.4, TURBINE STOP VALVES (TSVs)

There are no specific NSHC discussions for this Specification.

ATTACHMENT 5

ITS 3.7.5, EMERGENCY FEEDWATER (EFW)

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

A01

ITS

PLANT SYSTEMS

AUXILIARY FEEDWATER SYSTEM

LIMITING CONDITION FOR OPERATION

LCO 3.7.5 3.7.1.2 Two trains of auxiliary feedwater, each consisting of an auxiliary feedwater pump and associated flow path to both steam generators, shall be OPERABLE. LA01

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

Add proposed ACTION Note A02

Add proposed ACTION A L01

ACTION B, ACTION D a. With one train of auxiliary feedwater inoperable to either or both steam generator(s), restore the inoperable train to OPERABLE status within 72 hours or be in HOT SHUTDOWN within the next 12 hours. Add proposed Required Action D.1 M01

b. ~~With any Auxiliary Feed Pump Turbine Inlet Steam Pressure Interlocks inoperable, restore the inoperable interlocks to OPERABLE status within 7 days or be in HOT SHUTDOWN within the next 12 hours.~~ LA02

c. ~~With steam generator inlet valve AF 599 or AF 608 closed, re-open the closed valve AF 599 or AF 608 within one hour or be in HOT STANDBY within the next 6 hours and HOT SHUTDOWN within the following 6 hours.~~ Add proposed ACTION E L02

Add proposed ACTION C and second Condition of ACTION D M02

SURVEILLANCE REQUIREMENTS

4.7.1.2.1 Each Auxiliary Feedwater train shall be demonstrated OPERABLE:

a. At least once per 92 days ~~on a STAGGERED TEST BASIS~~ by:* L03

SR 3.7.5.2 1. Verifying the differential pressure of each steam turbine driven pump is greater than or equal to the required differential pressure ~~at the specified recirculation flow rate~~. LA05 The provisions of Specification 4.0.4 are not applicable for entry into MODE 3. M03

~~* When conducting tests of an auxiliary feedwater train in MODES 1, 2, and 3 which require local manual realignment of valves that make the train inoperable, the Motor Driven Feedwater Pump and its associated flow paths shall be OPERABLE per Specification 3.7.1.7 during the performance of this surveillance. If the Motor Driven Feedwater Pump or an associated flow path is inoperable, a dedicated individual shall be stationed at the realigned auxiliary feedwater train's valves (in communication with the control room) able to restore the valves to normal system OPERABLE status.~~ M02

DAVIS-BESSE, UNIT 1 3/4 7-4 Amendment No. ~~96, 122, 131, 193~~, 200

ITS A01 ITS 3.7.5

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

b. At least once per 31 days on a ~~STAGGERED TEST BASIS~~ by: L03

SR 3.7.5.1 1. Verifying that each valve (power operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position is in its correct position.

~~2. Verifying that all manual valves in the auxiliary feedwater pump suction and discharge lines that affect the system's capacity to deliver water to the steam generator are locked in their proper position.~~ L04

~~3. Verifying that valves CW 196, CW 197, FW 32, FW 91 and FW 106 are closed.~~ LA03

c. At least once each REFUELING INTERVAL by: Add proposed SR 3.7.5.4 Note L05

SR 3.7.5.4 1. Verifying that each automatic valve in the flow path actuates to its correct position on a ~~Steam and Feedwater Rupture Control System~~ actuation actual or test signal. LA04 L06

SR 3.7.5.5 2. Verifying that each pump starts automatically upon receipt of a ~~Steam and Feedwater Rupture Control System~~ actuation actual or test signal. ~~The provisions of Specification 4.0.4 are not applicable for entry in MODE 3.~~ LA04 M03 L06

SR 3.7.5.6 3. Verifying that there is a flow path from each auxiliary feedwater pump to both steam generators by pumping water from the Condensate Storage Tank with each pump to both steam generators.

~~The flow paths shall be verified by either steam generator level change or Auxiliary Feedwater Safety Grade Flow Indication. Verification of the Auxiliary Feedwater System's flow capacity is not required.~~ LA05

~~d. The Auxiliary Feed Pump Turbine Steam Generator Level Control System shall be demonstrated OPERABLE by performance of a CHANNEL CHECK at least once per 12 hours, a CHANNEL FUNCTIONAL TEST at least once per 31 days, and a CHANNEL CALIBRATION at least once each REFUELING INTERVAL.~~ LA06

~~e. The Auxiliary Feed Pump Suction Pressure Interlocks shall be demonstrated OPERABLE by performance of a CHANNEL FUNCTIONAL TEST at least once per 31 days, and a CHANNEL CALIBRATION at least once each REFUELING INTERVAL.~~ LA07

A01

ITS

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

f. After any modification or repair to the Auxiliary Feedwater System that could affect the system's capability to deliver water to the steam generator, the affected flow path shall be demonstrated available as follows:

1. If the modification or repair is downstream of the test flow line, each auxiliary feed pump(s) associated with the affected flow path shall pump water from the Condensate Storage Tank to the steam generator(s) associated with the affected flow path; and the flow path availability will be verified by steam generator level change or Auxiliary Feedwater Safety Grade Flow Indication. L07

2. If the modification or repair is upstream of the test flow line, the auxiliary feed pump shall pump water through the Auxiliary Feedwater System to the test flow line; and the flow path availability will be verified by flow indication in the test flow line.*

This Surveillance Testing shall be performed prior to entering MODE 3 if the modification is made in MODES 4, 5 or 6. Verification of the Auxiliary Feedwater System's flow capacity is not required.

SR 3.7.5.6 g. Following each extended cold shutdown (> 30 days in MODE 5), by:

1. Verifying that there is a flow path from each auxiliary feedwater pump to both steam generators by pumping Condensate Storage Tank water with each pump to both steam generators. The flow paths shall be verified by either steam generator level change or Auxiliary Feedwater Safety Grade Flow Indication. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3. LA05

Verification of the Auxiliary Feedwater System's flow capacity is not required. LA05

4.7.1.2.2 The Auxiliary Feed Pump Turbine Inlet Steam Pressure Interlocks shall be demonstrated OPERABLE when the steam line pressure is greater than 275 psig, by performance of a CHANNEL FUNCTIONAL TEST at least once per 31 days, and a CHANNEL CALIBRATION at least once each REFUELING INTERVAL. The CHANNEL FUNCTIONAL TEST shall be performed within 24 hours after exceeding 275 psig during each plant startup, if the test has not been performed within the last 31 days. LA02

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* When conducting tests of an auxiliary feedwater train in MODES 1, 2, and 3 which require local manual realignment of valves that make the train inoperable, the Motor Driven Feedwater Pump and its associated flow paths shall be OPERABLE per Specification 3.7.1.7 during the performance of this surveillance. If the Motor Driven Feedwater Pump or an associated flow path is inoperable, a dedicated individual shall be stationed at the realigned auxiliary feedwater train's valves (in communication with the control room) able to restore the valves to normal system OPERABLE status. M02

ITS

A01

ITS 3.7.5

PLANT SYSTEMS

MOTOR DRIVEN FEEDWATER PUMP SYSTEM

LIMITING CONDITION FOR OPERATION

LCO 3.7.5 3.7.1.7 The Motor Driven Feedwater Pump and associated ~~flow paths to the Auxiliary Feedwater System~~ shall be OPERABLE. train LA01

APPLICABILITY: MODES 1, 2 and 3. Add proposed second Applicability M04

ACTION: Add proposed ACTION Note A02

ACTION B With the Motor Drive Feedwater Pump or its associated ~~flow paths to the Auxiliary Feedwater System~~ inoperable, restore to OPERABLE status within 72 hours or be in HOT SHUTDOWN within the next 12 hours. LA01

ACTION D Add proposed Required Action D.1 M01

Add proposed ACTION C and second Condition of ACTION D M02

Add proposed ACTION F M04

SURVEILLANCE REQUIREMENTS

4.7.1.7 The required Motor Driven Feedwater Pump and flow paths to the Auxiliary Feedwater System shall be demonstrated OPERABLE:

a. Deleted

b. At least once per 31 days by:

1. ~~When in MODE 1 with RATED THERMAL POWER greater than 40%, verifying that each manual valve in the Motor Driven Feedwater Pump suction and discharge lines that affect the system's capability to deliver water to the steam generators is locked in its proper position.~~

SR 3.7.5.1 2. When in MODE 1 with RATED THERMAL POWER greater than 40%, verifying that each power operated valve in the flow path that is not locked, sealed. or otherwise secured in position is in its correct position. L04

A01

ITS 3.7.5

ITS

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

that is not locked, sealed, or otherwise secured in position L04

SR 3.7.5.1 (including Note) 3. When in MODE 1 at RATED THERMAL POWER equal to or less than 40% or when in MODES 2 or 3, verifying that each valve (manual or power operated) in the Motor Driven Feedwater Pump flow path is able to be positioned locally for delivering flow to the Auxiliary Feedwater System.

(Ability is demonstrated by verifying the presence of handwheels for all manual valves and the presence of either handwheels or available power supply for motor operated valves.) LA08

SR 3.7.5.3 c. At least once per 92 days and prior to entry into MODE 3 from MODE 4 (if not performed in the past 92 days) by:* A03

1. Verifying proper operation of each power operated and automatic valve in the Motor Driven Feedwater Pump flow path to the Auxiliary Feedwater System. LA09

2. Verifying the Motor Driven Feedwater Pump starts from the Control Room. ** LA09

3. Verifying proper operation of the Motor Driven Feedwater Pump.**

SR 3.7.5.7 d. At least once each REFUELING INTERVAL by:

1. Verifying that there is a flow path between the Motor Driven Feedwater Pump System and the Auxiliary Feedwater System by pumping water from the Condensate Storage Tanks to the steam generators. The flow path to the steam generators shall be verified prior to entering MODE 3 from MODE 4 by either steam generator level change or Auxiliary Feedwater Safety Grade Flow Indication. Verification of Motor Driven Feedwater Pump System flow capacity is not required. A03 LA05

SR 3.7.5.3 Note * If the Motor Driven Feedwater Pump cannot be tested within the time period specified, due to being aligned to the Main Feedwater System, the Surveillance Requirement shall be met within 72 hours after the Motor Driven Feedwater Pump has been aligned to the Auxiliary Feedwater System for 1 hour.

** When conducting tests of the Motor Driven Feedwater Pump/System in MODE 1 greater than 40% RATED THERMAL POWER which require local manual realignment of valves that make the system inoperable, both auxiliary feedwater pumps and their associated flow paths shall be OPERABLE per Specification 3.7.1.2 during the performance of this surveillance. If one auxiliary feedwater pump or flow path is inoperable, a dedicated individual shall be stationed at the realigned Motor Driven Feedwater Pump System's valves (in communication with the control room) able to restore the valves to normal system OPERABLE status. M02

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

2. Verifying proper operation of the Motor Driven Feedwater Pump lube oil interlocks. LA10

3. Verifying proper operation of manual valves by shifting the Motor Driven Feedwater Pump between the Main Feedwater System and the Auxiliary Feedwater System. L08

e. After any modification or repair to the Motor Driven Feedwater Pump System that could affect the system's capability to deliver water from the Condensate Storage Tanks to the Auxiliary Feedwater System, the affected flow path shall be demonstrated available as follows:*

1. If the modification or repair is in the Auxiliary Feedwater flow path downstream of the Motor Driven Feedwater Pump test flow line tie-in, the Motor Driven Feedwater Pump shall pump water from the Condensate Storage Tanks to the Auxiliary Feedwater System and the flow path availability will be verified by either steam generator level change or Auxiliary Feedwater Safety Grade Flow Indication. L07

2. If the modification or repair is upstream of the Motor Driven Feedwater Pump test flow line tie-in, the Motor Driven Feedwater Pump shall pump water from the Condensate Storage Tanks to the test flow line and the flow path availability will be verified by Motor Driven Feedwater Pump flow indication.

SR 3.7.5.7 f. Following each extended COLD SHUTDOWN (greater that 30 days in MODE 5), by:

1. Verifying that there is a flow path between the Motor Driven Feedwater System and the Auxiliary Feedwater System by pumping water from the Condensate Storage Tanks to the steam generators. The flow path to the steam generators shall be verified prior to entering MODE 3 from MODE 4 by either steam generator level change or Auxiliary Feedwater Safety Grade Flow Indication. Verification of Motor Driven Feedwater Pump flow capacity is not required. A03 LA05

* This surveillance testing shall be performed prior to entering MODE 3 from MODE 4 if the modification is made in MODES 4, 5, or 6. Verification of the Motor Driven Feedwater Pump flow capacity is not required. L07

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ITS 3.7.5, EMERGENCY FEEDWATER (EFW)

ADMINISTRATIVE CHANGES

A01 In the conversion of the Davis-Besse 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-1430, Rev. 3.1, "Standard Technical Specifications-Babcock and Wilcox 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 when entering MODE 1. CTS 3.7.1.2 and CTS 3.7.1.7 do not include this Note. This changes the CTS by including the ACTION Note.

The purpose of the ITS 3.7.5 ACTIONS Note is to prohibit entry into MODE 1 with an inoperable EFW train. Currently, CTS 3.7.1.2 and CTS 3.7.1.7 preclude entering MODES 1, 2, and 3 when an AFW train or MDFP 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. This LCO allows entry into a MODE or other specified condition in the Applicability under certain conditions when a Technical Specification required component is inoperable. 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 addition of this restriction (LCO 3.0.4.b is not applicable) is acceptable because there is an increased risk associated with entering MODE 1 with an inoperable EFW train, and therefore the provisions of LCO 3.0.4.b should not be applied in this circumstance. The change is acceptable because CTS 3.7.1.2 and CTS 3.7.1.7 do not currently allow this option. This change is considered administrative because it does not result in technical changes to the CTS.

A03 CTS 4.7.1.7.c requires performance of a MDFP train functional test (i.e., verify it can be started and properly operated) at least once per 92 days "and prior to entry into MODE 3 from MODE 4 (if not performed in the past 92 days)." CTS 4.7.1.7.d.1 requires verification at least once each refueling interval (24 months) that there is a flow path between the Motor Driven Feedwater Pump System and the Auxiliary Feedwater System by pumping the water from the Condensate Storage Tanks to the steam generators. It further states it must be performed prior to entering MODE 3 from MODE 4. CTS 4.7.1.7.f requires the same test as CTS 4.7.1.7.d.1 following a COLD SHUTDOWN greater than 30 days, and includes the same stipulation that it must be performed prior to entering MODE 3 from MODE 4. ITS SR 3.7.5.7 requires the same Surveillance test, but does not include the "prior to entering MODE 3 from MODE 4" stipulation. This changes the CTS by deleting the statements "prior to entry into MODE 3 from MODE 4 (if not performed in the past 92 days)" and "prior to entry into MODE 3 from MODE 4."

This change is acceptable because the CTS requirement has not changed. CTS 4.0.4 states that "entry into an OPERATIONAL MODE or other specified applicability shall not be made unless the Surveillance Requirement(s)

DISCUSSION OF CHANGES
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associated with the Limiting Condition for Operation have been performed within the stated surveillance Interval or otherwise specified." This requirement has been maintained in ITS 3.0.4. Therefore, there is no need to restate CTS 4.0.4 (ITS SR 3.0.4). This change is designated as administrative because it does not result in a technical change to the CTS.

MORE RESTRICTIVE CHANGES

M01 CTS 3.7.1.2 Action a states that if the inoperable AFW train cannot be restored to OPERABLE status within the allowed time, to be in HOT SHUTDOWN (MODE 4) within the next 12 hours. The CTS 3.7.1.7 Action states that if the inoperable MDFP train cannot be restored to OPERABLE status within the allowed time, to be in HOT SHUTDOWN (MODE 4) within the next 12 hours. Under similar conditions, ITS 3.7.2 ACTION D states to be in MODE 3 in 6 hours and MODE 4 in 12 hours. This changes the CTS by specifying that MODE 3 must be achieved within 6 hours.

The purpose of the CTS 3.7.1.2 and CTS 3.7.1.7 shutdown actions is to place the unit outside the Applicability of the LCOs. This change is acceptable because a new intermediate MODE must be reached, consistent with the requirements of CTS 3.0.3 and ITS LCO 3.0.3. The proposed Completion Time is sufficient to allow an operator to reduce power to MODE 3 in a controlled manner without challenging unit safety systems. The 6 hour time provided to reach MODE 3 is consistent with the time provided in similar actions in both the CTS and ITS. This change has been designated as more restrictive because it requires the unit to be placed in MODE 3 within a specific time.

M02 CTS 3.7.1.2 does not provide any actions when both AFW trains are inoperable for reasons other than those provided in CTS 3.7.1.2 Action c (which actually describes a condition in which both AFW trains and the MDFP train is inoperable, as described in DOC L02). Thus, if only two AFW trains are inoperable, CTS 3.0.3 must be entered. CTS 3.0.3 requires a unit shutdown to commence within 1 hour, and the unit to be placed in MODE 3 in the next 6 hours and in MODE 4 in the following 6 hours. CTS 3.7.1.7 provides the requirements for the MDFP train. Since this is a separate Technical Specification that is not part of CTS 3.7.1.2, the AFW train Technical Specification, no actions are provided in either CTS 3.7.1.2 or 3.7.1.7 to cover the condition of one AFW train inoperable concurrent with the MDFP train being inoperable. Thus, if an AFW train and MDFP train are concurrently inoperable, CTS 3.7.1.2 Action a would allow 72 hours to restore the inoperable AFW train to OPERABLE status and the CTS 3.7.1.7 Action would allow 72 hours to restore the inoperable MDFP train to Operable status, prior to requiring a unit shutdown. However, CTS 4.7.1.2.1.a (the AFW pump flow rate test) and 4.7.1.2.1.f (a post-maintenance flow test) includes a footnote (footnote *) that states if an AFW train is inoperable due to realigning valves for Surveillance testing concurrent with the MDFP train being inoperable, then a dedicated individual (in communication with the control room) shall be stationed at the realigned AFW train valves so that they can be restored to OPERABLE status if required. A similar footnote (footnote **) requiring stationing an individual at the MDFP train valves if one AFW train is inoperable is provided for CTS 4.7.1.7.c.2 and 4.7.1.7.c.3 (the MDFP train flow test). As long

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as these footnote allowances are followed, the 72 hour restoration times provided in CTS 3.7.1.2 Action a and CTS 3.7.1.7 Action are allowed. ITS 3.7.5 ACTION C will limit the restoration time to 48 hours if the MDFP train is inoperable concurrent with an AFW train inoperable due to one inoperable steam supply. ITS 3.7.5 Condition D, second Condition, covers the case where any two EFW trains (i.e., two AFW trains or one AFW train and the MDFP train) are inoperable for reasons other than Condition C (the MDFP train inoperable concurrent with an AFW train inoperable due to one inoperable steam supply). When in this Condition, a unit shutdown to MODE 3 within 6 hours and to MODE 4 within 12 hours is required. This changes the CTS by a) reducing the time the MDFP train can be inoperable concurrent with an AFW train inoperable due to one inoperable steam supply from 72 hours to 48 hours; b) reducing the time the MDFP train can be inoperable concurrent with an AFW train being inoperable for reasons other than an inoperable steam supply from 72 hours to no time (i.e., no restoration time is provided); and c) reducing the time to be in MODE 3 from 7 hours to 6 hours and MODE 4 from 13 hours to 12 hours when both AFW trains are inoperable.

The purpose of ITS 3.7.5 ACTION C and ACTION D is to limit the time two EFW trains can be concurrently inoperable. The proposed time in ITS 3.7.5 ACTION C is acceptable since it appropriately limits the time the unit can continue to operate with the MDFP inoperable concurrent with one AFW train inoperable due to an inoperable steam supply. The proposed time in ITS 3.7.5 ACTION D is acceptable since it requires a unit shutdown within a shorter time, without providing any additional time for commencing the shutdown requirements if both AFW trains are inoperable and requires a unit shutdown without providing any restoration time if the MDFP train is inoperable concurrent with an AFW train being inoperable for reasons other than one inoperable steam supply. This change is designated as more restrictive since less time is provided to restore inoperable components in the ITS than is provided in the CTS.

M03 CTS 4.7.1.2.1.a.1 requires a flow rate test of the AFW trains. It is modified by an allowance that the provisions of Specification 4.0.4 are not applicable for entry into MODE 3. CTS 4.7.1.2.1.c.2 requires a verification that each AFW pump starts upon receipt of a Steam and Feedwater Rupture Control System actuation test signal. It is also modified by an allowance that the provisions of Specification 4.0.4 are not applicable for entry into MODE 3. Since the Applicability of CTS 3.7.1.2 is MODES 1, 2, and 3, these statements essentially allow the unit to enter MODE 3 without having the two Surveillances performed (current) within the associated Frequency. The two Surveillances must be performed (i.e., current) prior to entering MODE 2. ITS SR 3.7.5.2 and SR 3.7.5.5 require similar Surveillances. However, they are modified by a Note that states the SRs are not required to be performed until 24 hours after reaching 800 psig in the steam generators. This changes the CTS by limiting the amount of time the unit can operate in MODE 3 prior to requiring the Surveillances to be performed.

The purpose of the CTS allowances is to provide time to perform the Surveillances under the necessary unit conditions. To perform these Surveillances, adequate steam generator pressure is required. The proposed limit of 24 hours after reaching 800 psig in the steam generators is acceptable

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because it provides adequate time to perform the Surveillances after reaching the necessary unit conditions. This change is designated as more restrictive since less time is being allowed to performed the Surveillances in the ITS than is allowed in the CTS.

M04 The CTS 3.7.1.7 requirements for the MDFP train are applicable in MODES 1, 2, and 3. ITS 3.7.5 requirements for the MDFP train are applicable in MODES 1, 2, and 3, and in addition, MODE 4 when a steam generator is relied upon for heat removal. Consistent with this change in Applicability, a new ACTION (ITS 3.7.5 ACTION F) has been provided when the MDFP train is inoperable in MODE 4, and the new ACTION requires action to be immediately initiated to restore the MDFP train to OPERABLE status. This changes the CTS 3.7.1.7 requirements by requiring the MDFP train to be OPERABLE in MODE 4 when a SG is relied upon for heat removal.

This change is acceptable because the MDFP train may be needed in MODE 4 when the steam generators are used for heat removal until the decay heat removal (DHR) loop has been placed in service. ITS LCO 3.4.6, "RCS Loops - MODE 4," includes requirements for OPERABLE steam generators, thus a MDFP train must be OPERABLE to ensure the steam generators have a source of feedwater. The change is designated as more restrictive because the MDFP train is now required to be OPERABLE in MODE 4 when a steam generator is relied upon for heat removal.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.7.1.2 requires two trains of auxiliary feedwater, each consisting of an auxiliary feedwater pump and associated flow path to both steam generators, to be OPERABLE. CTS LCO 3.7.1.7 requires the Motor Driven Feedwater Pump and associated flow paths to the Auxiliary Feedwater System to be OPERABLE. ITS LCO 3.7.5 requires three EFW trains to be OPERABLE, consisting of two Auxiliary Feedwater (AFW) trains and the Motor Driven Feedwater Pump (MDFP) train. The ITS does not define the components and associated flow path that comprise an OPERABLE EFW train. This changes the CTS by moving the description of the AFW and MDFP 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 EFW trains (both AFW and MDFP). 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

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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, UFSAR, ODCM, QAPM, IST Program, or IIP)* CTS 3.7.1.2 Action b provides Action requirements for an inoperable auxiliary feed pump turbine inlet steam pressure interlock which require restoration within 7 days or a unit shutdown. CTS 4.7.1.2.2 provides the Surveillance Requirement for the auxiliary feed pump turbine inlet steam pressure interlocks and requires a CHANNEL FUNCTIONAL TEST every 31 days and a CHANNEL CALIBRATION every refueling interval (24 months). ITS 3.7.5 does not include these requirements. This changes the CTS by moving these requirements to the Technical Requirements Manual (TRM).

The removal of this Action Requirement and associated Surveillance Requirement from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The purpose of CTS 3.7.1.2 is to ensure the AFW trains are OPERABLE. As stated in the NRC Safety Evaluation for Amendment 131, dated April 25, 1989, the auxiliary feedwater pump turbine inlet steam pressure interlocks are not required for the AFW trains to be OPERABLE. The purpose of the turbine inlet steam pressure interlocks is to close the auxiliary feedwater pump turbine steam supply valves if a low pressure in a steam admission line exists, indicative of a break in a steam admission line. As stated in the CTS 3/4.7.1.2 Bases issued as part of Amendment 131, the OPERABILITY of the auxiliary feed pump turbine inlet pressure interlocks is required only for high energy line break concerns and does not affect AFW System OPERABILITY. Therefore, these requirements are not necessary to be included in the ITS to provide adequate protection of the public health and safety. Also this change is acceptable because the removed requirements will be adequately controlled in the TRM. The TRM is currently incorporated by reference into the UFSAR, thus 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 Surveillance Requirements are being removed from the Technical Specifications.

LA03 *(Type 4 – Removal of LCO, SR, or other TS requirement to the TRM, UFSAR, ODCM, QAPM, IST Program, or IIP)* CTS 4.7.1.2.1.b.3 requires verifying certain turbine plant cooling water valves and the startup feedwater pump suction and discharge valves are closed. ITS 3.7.5 does not include this Surveillance. This changes the CTS by moving this Surveillance Requirement to the Technical Requirements Manual (TRM).

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. The purpose of CTS 4.7.1.2.1.b.3, as stated in the CTS 3/4.7.1.2 Bases, is to address concerns associated with potential pipe failures in the AFW pump rooms that could occur during operation of the startup feedwater pump. The startup feedwater pump was originally used during a unit startup since the main

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feedwater pumps are steam driven. However, since the addition of the MDFP train, the MDFP train is the feedwater pump normally used during a unit startup. Furthermore, closure of these valves is not required for the AFW trains to be OPERABLE during a loss of feedwater event or main steam line break event. Therefore, this Surveillance is not necessary to be included in the ITS to provide adequate protection of the public health and safety. Also this change is acceptable because the removed Surveillance Requirement will be adequately controlled in the TRM. The TRM is currently incorporated by reference into the UFSAR, thus 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 Surveillance Requirement is being removed from the Technical Specifications.

LA04 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 4.7.1.2.1.c.1 and 4.7.1.2.1.c.2 require verification that each automatic valve in the AFW flow path actuates to its correct position and each AFW pump starts automatically, respectively, on a Steam and Feedwater Rupture Control Systems (SFRCS) actuation test signal. ITS SR 3.7.5.4 and SR 3.7.5.5 do not state the specific type of signal, but only specify an actual or simulated "actuation" signal. This changes CTS by moving the type of actuation signal (i.e., SFRCS) to the Bases. The change to allow an actual signal is discussed in DOC L06.

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

LA05 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.7.1.2.1.a.1 requires verifying the differential pressure of the AFW pumps are greater than or equal to the required differential pressure at the specified recirculation flow rate. CTS 4.7.1.2.1.c.3 and 4.7.1.2.1.g.1 require verification that there is a flow path from each auxiliary feedwater pump to both steam generators by pumping water from the Condensate Storage Tank with each pump to both steam generators. They further state that the flow path shall be verified by either steam generator level change or Auxiliary Feedwater Safety Grade Flow Indication, and that the verification of the Auxiliary Feedwater System's flow capacity is not required by these Surveillances. CTS 4.7.1.7.d.1 and 4.7.1.7.f.1 require verification that there is a flow path between the Motor Driven Feedwater Pump System and the Auxiliary Feedwater System by pumping the water from the Condensate Storage Tanks to the steam generators. They further state that the flow path to the steam generators shall be verified by either steam generator level change or Auxiliary

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Feedwater Safety Grade Flow Indication, and that the verification of the Motor Driven Feedwater Pump System flow capacity is not required by these Surveillances. ITS SR 3.7.5.2 requires a similar AFW pump differential pressure test as required by CTS 4.7.1.2.1.a.1, but the requirement that the AFW pumps are at the specified recirculation flow rate is not included. ITS SR 3.7.5.6 requires verification of proper alignment of the required AFW flow paths by verifying flow from the condensate storage tanks to each steam generator. ITS SR 3.7.5.7 requires verification of proper alignment of the required MDFP flow paths by verifying flow from the condensate storage tanks to each steam generator. However the CTS 4.7.1.2.c.3, 4.7.1.2.1.g.1, 4.7.1.7.d.1, and 4.7.1.7.f.1 requirements on the manner to verify flow and that an actual flow capacity check is not required is not included in the ITS. This changes the CTS by moving the requirements to perform the AFW pump differential pressure test at the specified recirculation flow rate, and to verify the flow path by either steam generator level change or Auxiliary Feedwater Safety Grade Flow Indication and that verification of flow capacity is not required to the Bases.

The removal of these details for performing Surveillance Requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included to provide adequate protection of public health and safety. The ITS retains all necessary requirements to perform an AFW pump differential pressure test and to verify the flow path of each EFW train to both steam generators. 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.

LA06 *(Type 4 – Removal of LCO, SR, or other TS requirement to the TRM, UFSAR, ODCM, QAPM, IST Program, or IIP)* CTS 4.7.1.2.1.d provides the Surveillance Requirement for the Auxiliary Feed Pump Turbine Steam Generator Level Control System and requires a CHANNEL CHECK every 12 hours, a CHANNEL FUNCTIONAL TEST every 31 days, and a CHANNEL CALIBRATION every refueling interval (24 months). ITS 3.7.5 does not include these requirements. This changes the CTS by moving these requirements to the Technical Requirements Manual (TRM).

The removal of these Surveillance Requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The purpose of CTS 4.7.1.2.1.d is to ensure the AFW trains can properly control steam generator water level. The ITS Bases states that the AFW System is capable of supplying 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. The ITS Bases also requires the controls to be OPERABLE. Therefore, these requirements are not necessary to be included in the ITS to provide adequate protection of the public health and safety. Also this change is acceptable because the removed requirements will be adequately controlled in the TRM. The TRM is currently incorporated by

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ITS 3.7.5, EMERGENCY FEEDWATER (EFW)

reference into the UFSAR, thus 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 Surveillance Requirements are being removed from the Technical Specifications.

LA07 *(Type 4 – Removal of LCO, SR, or other TS requirement to the TRM, UFSAR, ODCM, QAPM, IST Program, or IIP)* CTS 4.7.1.2.1.e provides the Surveillance Requirement for the auxiliary feed pump suction pressure interlocks and requires a CHANNEL FUNCTIONAL TEST every 31 days and a CHANNEL CALIBRATION every refueling interval (24 months). ITS 3.7.5 does not include these requirements. This changes the CTS by moving these requirements to the Technical Requirements Manual (TRM).

The removal of these Surveillance Requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The purpose of CTS 4.7.1.2.1.e is to ensure the AFW suction source can be swapped from the condensate storage tanks to the Service Water System on a low suction header pressure (i.e., on low level in the CSTs). However, LCO 3.7.6, "Condensate Storage Tanks (CSTs)," requires a sufficient water level be maintained in the CSTs to meet the safety analysis makeup water requirements. As stated in the ITS 3.7.6 Bases, this required water level (270,300 gallons) provides sufficient water inventory for 13 hours at MODE 3 steaming to atmosphere, followed by a cooldown to decay heat removal entry conditions at the design cooldown rate. Furthermore, the CSTs are the primary source of water for the AFW trains. Therefore, these requirements are not necessary to be included in the ITS to provide adequate protection of the public health and safety. Also this change is acceptable because the removed requirements will be adequately controlled in the TRM. The TRM is currently incorporated by reference into the UFSAR, thus 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 Surveillance Requirements are being removed from the Technical Specifications.

LA08 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.7.1.7.b.3 requires verifying each manual or power operated valve in the MDFP flow path is capable of being repositioned to the correct position when in MODE 1 $\leq$ 40% RTP and in MODES 2 and 3. It further clarifies that capable of being repositioned is demonstrated by verifying the presence of handwheels for all manual valves and the presence of either a handwheel or an available power supply for power operated valves. ITS SR 3.7.5.1 requires a similar Surveillance, however the manner in which the capability of repositioning the valves is demonstrated is not included. This changes the CTS by moving the details concerning how to demonstrate the capability to reposition the valves to the Bases.

The removal of these details for performing Surveillance Requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included to provide adequate protection of public health and safety. The ITS retains all necessary requirements to verify the valves are in their proper position or can be aligned to their proper position. Also, this change

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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.

LA09 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.7.1.7.c.1 requires verifying proper operation of each power operated and automatic valve in the MDFP train flow path to the AFW System. CTS 4.7.1.7.c.2 requires verifying the MDFP starts from the control room. ITS SR 3.7.5.3 requires operating the MDFP train. This changes the CTS by moving the details of how the Surveillance is conducted to the Bases.

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

LA10 *(Type 4 – Removal of LCO, SR, or other TS requirement to the TRM, UFSAR, ODCM, QAPM, IST Program, or IIP)* CTS 4.7.1.7.d.2 provides the Surveillance Requirement for the MDFP lube oil interlocks and requires verifying proper operation of the interlocks at least once each refueling interval (24 months). ITS 3.7.5 does not include this Surveillance Requirement. This changes the CTS by moving this requirement to the TRM.

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. The purpose of CTS 4.7.1.7.d.2 is to ensure the MDFP lube oil interlock is functioning properly. The MDFP lube oil is provided to ensure the MDFP is not started unless sufficient lube oil pressure is established for pump operation. ITS SR 3.7.5.3 requires operating the MDFP train every 92 days. In addition, the MDFP train is normally used to provide feedwater to the steam generators during a reactor startup until the reactor is at sufficient power to support the turbine driven main feedwater pumps. Therefore, operation of the MDFP train during this Surveillance and under these routine conditions would provide the opportunity to detect a problem with the MDFP lube oil interlocks that would inadvertently not allow the MDFP to be started. In addition, this interlock is for pump protection only. Therefore, this Surveillance Requirement is not necessary to be included in the ITS to provide adequate protection of the public health and safety. Also this change is acceptable because the removed requirements will be adequately controlled in the TRM. The TRM is currently incorporated by

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reference into the UFSAR, thus 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 Surveillance Requirement is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L01 *(Category 4 – Relaxation of Required Action)* CTS 3.7.1.2 Action a requires an inoperable train of auxiliary feedwater be restored to OPERABLE status within 72 hours for any condition of inoperability. ITS 3.7.5 ACTION A permits 7 days to restore the steam supply valve to an OPERABLE status when an AFW train is inoperable due to one inoperable steam supply valve or if an AFW train is inoperable in MODE 3 following refueling. This changes the CTS by extending the restoration time from 72 hours to 7 days for an inoperable AFW train due to these conditions.

The purpose of CTS 3.7.1.2 Action a is to provide a limit on the length of time the unit may remain in the MODES of Applicability with one AFW train inoperable. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified condition, considering the OPERABLE status of 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. One steam supply for the inoperable AFW train remains OPERABLE, which will provide the required steam flow for the train to produce the design flow rate and therefore, the capability to mitigate most analyzed accidents is preserved. An inoperable AFW train in MODE 3 following a refueling is acceptable because the remaining AFW train and the MDFP train remain OPERABLE and the decay heat in the Reactor Coolant System is low. The probability of an event occurring during the extended outage time that would require the inoperable steam supply or AFW train to function is low. The ITS ACTION provides adequate assurance that the AFW trains and MDFP trains will continue to meet the assumptions stated in the safety analyses for the EFW 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 3.7.1.2 Action c states that if steam generator inlet valve AF 599 or AF 608 is closed, to re-open the closed valve within 1 hour or be in HOT STANDBY (MODE 3) within 6 hours and HOT SHUTDOWN (MODE 4) within the following 6 hours. When either of these two valves is closed during normal operations, both AFW trains and the MDFP train are inoperable. However, no other conditions describing inoperability of the AFW trains are provided. Thus, if the two AFW trains are inoperable for other reasons, CTS 3.0.3, which requires a unit shutdown to commence within 1 hour, must be entered. ITS 3.7.5 ACTION E provides specific actions when all three EFW trains are inoperable, and requires action to be initiated immediately to restore one EFW train to OPERABLE status. In addition, the Note to ITS 3.7.5 Required

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ITS 3.7.5, EMERGENCY FEEDWATER (EFW)

Action E.1 states that LCO 3.0.3 and all other LCO Required Actions requiring MODE changes are suspended until one EFW train is restored to OPERABLE status. This changes the CTS by providing an Action to maintain the unit in the current MODE when both AFW trains and the MDFP train are inoperable, and require actions to be immediately initiated to restore one of the EFW trains to OPERABLE status, in lieu of requiring a unit shutdown within 1 hour.

The purpose of the CTS 3.7.1.2 Actions is to place the unit in a MODE in which the LCO is not applicable when both AFW trains are inoperable. However, if the MDFP train is also inoperable, no EFW is available. In this situation, 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 non-safety grade equipment. In such a condition, the unit should not be perturbed by any action, including a power change, which might result in a trip. Thus, Required Action E.1 is modified by a Note indicating that LCO 3.0.3 and all LCO Required Action requiring MODE changes are suspended until at least one EFW train is restored to OPERABLE status. Furthermore, the seriousness of this condition requires that action be started immediately to restore at least one EFW train to OPERABLE status. Therefore, the ITS 3.7.5 Required Action E.1 provides the appropriate compensatory measures when three EFW trains are inoperable and are 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.

L03 *(Category 7 – Relaxation Of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.7.1.2.1.a.1 states that each AFW train shall be demonstrated OPERABLE at least once every 92 days "on a STAGGERED TEST BASIS" by verifying the differential pressure of each AFW pump is greater than or equal to the required differential pressure at the specified recirculation flow rate. CTS 4.7.1.2.1.b.1 requires verifying each AFW train valve (power operated or automatic) in the flow path is in its correct position at least once per 31 days "on a STAGGERED TEST BASIS." ITS SR 3.7.5.2 and SR 3.7.5.1 require similar tests every 92 days and every 31 days, respectively, but do not include the "STAGGERED TEST BASIS" requirement. This changes the CTS by deleting the requirement to test on a STAGGERED TEST BASIS.

The purpose of CTS 4.7.1.2.1.a.1 and 4.7.1.2.1.b.1 is to demonstrate the OPERABILITY of the AFW trains. This change is acceptable because the new Surveillance Frequencies provide an acceptable level of equipment reliability. This change deletes the requirement to perform CTS 4.7.1.2.1.a.1 and 4.7.1.2.1.b.1 on a STAGGERED TEST BASIS. The intent of a requirement for staggered testing is to increase reliability of the component/system being tested. A number of studies have been performed that demonstrate that staggered testing has negligible impact on component reliability. These analytical and subjective analyses have determined that staggered testing 1) is operationally difficult, 2) has negligible impact on component reliability, 3) has no impact on failure frequency, 4) introduces additional stress on components potentially causing increased component failures rates and component wearout, 5) results in reduced redundancy during testing, and 6) increases likelihood of human error by increasing testing intervals. Therefore, the AFW trains staggered testing requirements have been deleted. This change is designated as less restrictive

DISCUSSION OF CHANGES
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because the intervals between performances of the Surveillances for the two AFW trains can be larger or smaller under the ITS than under the CTS.

L04 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* CTS 4.7.1.2.1.b.1 requires the verification that each power operated or automatic valve in the AFW flow path is in its correct position. CTS 4.7.1.2.1.b.2 requires the verification that all manual valves in the auxiliary feedwater pump suction and discharge lines that affect the system's capacity to deliver water to the steam generator are locked in their proper position. CTS 4.7.1.7.b.1 requires the verification that all manual valves in the Motor Driven Feedwater Pump suction and discharge lines that affect the system's capacity to deliver water to the steam generator are locked in their proper position. CTS 4.7.1.7.b.2 requires the verification that each power operated valve in the Motor Driven Feedwater Pump flow path is in its correct position when > 40% RTP. CTS 4.7.1.7.b.3 requires verifying each manual or power operated valve in the MDFP flow path is capable of being repositioned to the correct position when in MODE 1 ≤ 40% RTP and in MODES 2 and 3. ITS SR 3.7.5.1 requires verifying that each EFW manual, power operated, and automatic valve in each water flow path and in both steam supply flow paths to the AFW pumps, that is not locked, sealed, or otherwise secured in position, is in the correct position (or can be aligned as allowed by the Note to SR 3.7.5.1). This changes the CTS by only requiring the verification of EFW valves that are not locked, sealed or otherwise secured in position.

The purpose of CTS 4.7.1.2.1.b.1, 4.7.1.2.1.b.2, 4.7.1.7.b.1, 4.7.1.7.b.2, and 4.7.1.7.b.3 is to verify that the automatic, power operated, and manual valves in the AFW and MDFP flow paths are aligned to the correct position (or can be aligned under certain conditions). This change is acceptable because the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. The verification of valves that are aligned and secured into the required safety position is unnecessary. Valves secured in the safety position will satisfy the safety analyses assumptions for the mitigation of analyzed accidents. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L05 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* CTS 4.7.1.2.1.c.1 requires that each AFW automatic valve in the flow path actuate to the correct position on an SFRCS actuation signal. ITS SR 3.7.5.4 requires a similar Surveillance. However, it is modified by a Note that states the SR is not required to be performed until 24 hours after reaching 800 psig in the steam generators. This changes the CTS by providing an allowance to delay the performance of required testing without requiring the associated AFW train to be declared inoperable.

The purpose of CTS 4.7.1.2.1.c.1 is to ensure the AFW train is OPERABLE in MODES 1, 2, and 3. The allowance provides for entry into MODE 3 before requiring the testing of the automatic valves. This change is acceptable because the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. This change is necessary because the steam generator pressure may

DISCUSSION OF CHANGES
ITS 3.7.5, EMERGENCY FEEDWATER (EFW)

be insufficient in MODE 4 to properly test the AFW train. One manner of performing this SR would be to combine this test with the test required by CTS 4.7.1.2.1.c.2, which tests the automatic start of the AFW pump using the same signal as is required to test the automatic valves. The majority of SRs demonstrate equipment is, in fact, OPERABLE when the tests are performed. Inconsistent testing results may result if testing of the AFW train is required before establishing a sufficient steam generator pressure. The allowance will permit the establishment of stable unit conditions and sufficient steam generator pressure to test the AFW pump and valves and will allow an accurate and consistent method for the testing. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L06 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.7.1.2.1.c.1 and 4.7.1.2.1.c.2 require verification that each automatic valve in the AFW flow path actuates to its correct position and each AFW pump starts automatically, respectively, on an SFRCS actuation test signal. ITS SR 3.7.12.3, which performs a similar test, specifies that the signal may be from either an "actual" or simulated (i.e., test) signal. This changes the CTS by explicitly allowing the use of either an actual or simulated signal for the test.

The purpose of CTS 4.7.1.2.1.c.1 and 4.7.1.2.1.c.2 is to ensure the AFW trains actuate upon receipt of an actuation signal. This change is acceptable because the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. Equipment cannot discriminate between an "actual," "simulated," or "test" signal and, therefore, the results of the testing are unaffected by the type of signal used to initiate the test. This change allows taking credit for unplanned actuation if sufficient information is collected to satisfy the Surveillance test requirements. The change also allows a simulated signal to be used, if necessary. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L07 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.7.1.2.f and 4.7.1.7.e (including footnote *) describe tests that must be performed following modification or repairs to the AFW trains and MDFP trains, respectively. ITS 3.7.5 does not include these testing requirements. This changes the CTS by deleting these post-maintenance Surveillance Requirements.

The purpose of CTS 4.7.1.2.f and 4.7.1.7.e is to verify the OPERABILITY of the AFW trains and MDFP train following completion of modifications to the AFW or MDFP trains that may alter the flow characteristics. This change is acceptable because the deleted Surveillance Requirements are not needed to verify that the equipment used to meet the LCO can perform its required functions. Thus, appropriate equipment continues to be tested in a manner and at a frequency necessary to give confidence that the equipment can perform its assumed safety function. Any time the OPERABILITY of a system or component has been affected by repair, maintenance, modification, or replacement of a component, post-maintenance testing is required to demonstrate the OPERABILITY of the system or component. This is described in the Bases for ITS SR 3.0.1 and

DISCUSSION OF CHANGES
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required under ITS SR 3.0.1. The OPERABILITY requirements for the AFW System and MDFP train are described in the Bases for ITS 3.7.5. Post-maintenance testing will continue to be performed and an explicit requirement in the Technical Specifications is not necessary. This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

L08 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.7.1.7.d.3 requires verifying, at least once each refueling interval (i.e., 24 months), proper operation of manual valves by shifting the MDFP between the Main Feedwater System and the AFW System. ITS 3.7.5 does not include this specific Surveillance Requirement. This changes the CTS by deleting a Surveillance Requirement.

The purpose of CTS 4.7.1.7.d.3 is to demonstrate the capability of shifting the discharge flow path of the MDFP from the Main Feedwater System to the AFW System. The OPERABILITY of the MDFP train, as described in the ITS 3.7.5 Bases, requires it to be capable of providing flow to the AFW System flow path, since this is the flow path for the emergency feedwater mode. This change is acceptable because this capability is already demonstrated at least once every 24 months through routine operation of the MDFP train. The MDFP train is normally used to supply feedwater flow through the Main Feedwater System flow path during a reactor startup until reactor power is sufficient to support operation of the turbine driven Main Feedwater pumps. At that time, the MDFP is realigned to provide flow to the AFW System. ITS SR 3.7.5.1 requires the MDFP train valves to be in their correct position when in MODE 1 > 40% RTP. Prior to that point, the Note to the SR allows the valves to be in the non-correct position provided they are capable of being realigned to the correct position. Thus, following a reactor startup the valves will be required to be repositioned from the Main Feedwater System to the AFW System in order to meet ITS SR 3.7.5.1. Therefore, it is unnecessary to specify an additional Surveillance Requirement to prove this capability. This change is designated as less restrictive because a specific Surveillance Requirement in the CTS is not included in the ITS.

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

CTS

EFW System 1
3.7.5

3.7 PLANT SYSTEMS

3.7.5 Emergency Feedwater (EFW) System

a. Two Auxiliary Feedwater (AFW) trains; and
b. The Motor Driven Feedwater Pump (MDFP) train. 1

, consisting of:

3.7.1.2, 3.7.1.7 LCO 3.7.5 [Three] EFW trains shall be OPERABLE. 2 1

--NOTE--

DOC M04 the MDFP train Only ~~one EFW train, which includes a motor driven pump,~~ is required to be OPERABLE in MODE 4. 1

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

ACTIONS

--NOTE--

DOC A02 LCO 3.0.4.b is not applicable when entering MODE 1.

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

DOC L01 — 4, TSTF-412, 2, 5, 1, 1

CTS

EFW System 3.7.5 (1)

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
3.7.1.2 Action a, 3.7.1.7 Action	B. One EFW train inoperable [for reasons other than Condition A] in MODE 1, 2, or 3.	B.1 Restore EFW train to OPERABLE status.	72 hours	(2) INSERT 1 TSTF-412
3.7.1.2 Action a, 3.7.1.7 Action. DOC M02	C D. Required Action and associated Completion Time of Condition A , [or B] not met. , or C [OR Two EFW 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] 12 hours	(2) TSTF-412
DOC L02	D E. [Three] EFW 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 EFW train is restored to OPERABLE status. ------------------------------------ Initiate action to restore one EFW train to OPERABLE status.	Immediately	TSTF-412
DOC M04	E F. Required EFW MDFP train inoperable in MODE 4.	E F.1 Initiate action to restore EFW MDFP train to OPERABLE status.	Immediately	TSTF-412 (1)

3.7.5

CTS

TSTF-412 **INSERT 1**

DOC M02 C. One turbine ~~driven~~ EFW train inoperable due to one inoperable steam supply. AND Motor ~~driven~~ EFW train inoperable.	C.1 Restore the steam supply to the ~~turbine driven~~ train to OPERABLE status. OR C.2 Restore the ~~motor driven~~ EFW train to OPERABLE status.	[~~24~~ or 48] hours [~~24~~ or 48] hours	1 2 1 1 1 2

AFW MDFP AFW MDFP

Insert Page 3.7.5-2

CTS

EFW System 3.7.5 (1)

SURVEILLANCE REQUIREMENTS

CTS	SURVEILLANCE		FREQUENCY	
4.7.1.2.1.b.1, 4.7.1.7.b.2, 4.7.1.7.b.3	SR 3.7.5.1 INSERT 2	Verify each EFW manual, power operated, and automatic valve in each water flow path and in both steam supply flow paths to the ~~steam turbine driven~~ AFW pumps, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days	(6) (1)
4.7.1.2.1.a.1	SR 3.7.5.2	-----NOTE----- Not required to be performed ~~for the turbine driven EFW pumps,~~ until [24] hours after reaching [800] psig in the steam generators. ----- Verify the developed head of each ~~EFW~~ AFW pump at the flow test point is greater than or equal to the required developed head.	~~In accordance with the Inservice Testing Program~~ 92 days	(2) (7) (7) (8)
	INSERT 3			(7) (9) (2)
4.7.1.2.1.c.1	SR 3.7.5.~~3~~ 4	-----NOTE~~S~~----- ~~1.~~ Not required to be performed until [24] hours after reaching [800] psig in the steam generators. ~~2. Not required to be met in MODE 4.~~ ----- Verify each ~~EFW~~ AFW automatic valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	~~[18]~~ 24 months	(9) (9) (2)
4.7.1.2.1.c.2	SR 3.7.5.~~4~~ 5	-----NOTE~~S~~----- ~~1.~~ Not required to be performed until [24] hours after reaching [800] psig in the steam generators. ~~2. Not required to be met in MODE 4.~~ ----- Verify each ~~EFW~~ AFW pump starts automatically on an actual or simulated actuation signal.	~~[18]~~ 24 months	(7) (9) (2) (9) (9) (2)

CTS

6 **INSERT 2**

4.7.1.7.b.3

---------------------------NOTE------------------------
In MODE 1 ≤ 40% RTP and MODES 2, 3, and 4, the MDFP train valves are allowed to be in the non-correct position, provided the valves are capable of being locally realigned to the correct position.
----

7 **INSERT 3**

4.7.1.7.c	SR 3.7.5.3	---------------------------NOTE------------------------ Not required to be performed until 73 hours after MDFP train is aligned to the AFW System. --- Operate the MDFP train.	92 days

CTS

EFW System (1)
3.7.5

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY
4.7.1.2.1.c.3, 4.7.1.2.1.g.1	SR 3.7.5.5 6	Verify proper alignment of the required EFW AFW flow paths by verifying [valve alignment/flow] from the condensate storage tank s to each steam generator.	Prior to entering MODE 2 following refueling or whenever plant has been in MODE 5, MODE 6, or defueled for a cumulative period of > 30 days (7) (10) (2) (11) (10)
	SR 3.7.5.6	~~[Perform a CHANNEL FUNCTIONAL TEST for the EFW pump suction pressure interlocks.~~	~~31 days]~~ (3)
	SR 3.7.5.7	~~[Perform a CHANNEL CALIBRATION for the EFW pump suction pressure interlocks.~~	~~[18] months]~~

INSERT 4 (10)

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CTS

INSERT 4

10

4.7.1.7.d.1, 4.7.1.7.f.1	SR 3.7.5.7	Verfiy proper alignment of the required MDFP flow paths by verifying flow from the condensate storage tanks to each steam generator.	Prior to entering MODE 3 following refueling or whenever plant has been in MODE 5, MODE 6, or defueled for a cumulative period of > 30 days

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.5, EMERGENCY FEEDWATER (EFW)

1. The Davis-Besse design for Emergency Feedwater includes the Auxiliary Feedwater (AFW) System and the Motor Driven Feedwater Pump (MDFP); there is no "Emergency Feedwater System." The AFW System consists of two turbine driven pumps; the AFW System does not include any motor driven pumps. Therefore, the LCO title has been changed to delete the word "System" and the LCO has been modified to include both types of Emergency Feedwater trains, the AFW trains and the MDFP train. This is consistent with the current licensing basis. Furthermore, since the AFW System includes only turbine driven pumps, any reference to "turbine driven EFW," "turbine driven EFW pump," or "steam turbine driven" has been deleted and replaced with the term "AFW train" or "AFW," as applicable. Also, the term "motor driven EFW" has been replaced with "MDFP" consistent with the Davis-Besse terminology. Due to the above described change, the words in the LCO Note describing an EFW train have been modified to clearly state the described EFW train is the MDFP train and the term EFW train in ISTS ACTION F has been changed to MDFP train.

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

3. These bracketed Surveillances have not been included in the Davis-Besse ITS, as described in the Discussion of Changes for ITS 3.7.5.

4. The Davis-Besse design includes two turbine driven AFW pumps. Therefore, the number "One" has been added to the first Condition of ISTS 3.7.5 Condition A for clarity.

5. The term "affected equipment" in ISTS 3.7.5 Required Action A.1 has been changed to "AFW train" for clarity since the affected equipment in this ACTION is the AFW train.

6. ISTS SR 3.7.5.1 has been modified by the addition of a Note. The Note applies to the MDFP train, and is consistent with the current licensing basis. At Davis-Besse, the MDFP train is also used during a unit startup to supply feedwater until the turbine driven main feedwater pumps can be put in service. When operating in this mode, the MDFP is aligned to the Main Feedwater System, not the AFW System (the emergency feedwater alignment).

7. ISTS SR 3.7.5.2 provides the testing requirements for the EFW pumps. This Surveillance has been modified to only apply to the AFW pumps (the turbine driven pumps) and new SR 3.7.5.3 has been added to provide the Davis-Besse specific Surveillance for the MDFP. Due to this addition, the term "for the turbine driven EFW pumps," in the SR 3.7.5.2 Note is not needed and has been deleted. Subsequent SRs have been renumbered.

8. The proper Davis-Besse Surveillance Frequency has been provided.

9. The MDFP train is not an automatically actuated train; it is manually actuated. Therefore, ISTS SR 3.7.5.3 and SR 3.7.5.4 have been modified to only apply to the AFW trains (which are automatically actuated), consistent with current licensing basis. In addition, since the AFW trains are not required to be OPERABLE in MODE 4, the Notes to the two SRs exempting the SRs in MODE 4 (ITS SR 3.7.5.4

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.5, EMERGENCY FEEDWATER (EFW)

Note 2 and ITS SR 3.7.5.5 Note 2) are unnecessary and have been deleted. Due to these deletions, the Note number assigned to the remaining Note in each of the SRs has been deleted, consistent with the format of the ISTS.

10. The Frequency for performing ISTS SR 3.7.5.5 is different for the AFW trains and the MDFP trains. The MDFP train can be tested in MODE 4, thus the allowance to not test the MDFP until after entering MODE 3 is not needed. Therefore, the Surveillance has been modified to only apply to the AFW trains and new ITS SR 3.7.5.7 has been added to provide the Davis-Besse specific Surveillance Frequency for the MDFP. In addition, Davis-Besse is also required to perform these Surveillances every refueling interval (24 months). This Frequency has been maintained in the ITS (through the use of the term "following refueling") since the ISTS Frequency may not ensure a test is performed every 24 months. (The Frequency only requires performance if the unit has been in MODE 5 or 6 or defueled for a cumulative time period of greater than 30 days, and it is possible for Davis-Besse to complete a refueling outage in less time than 30 days.)

11. Changes made to be consistent with changes made to another Specification (i.e., Davis-Besse has two condensate storage tanks).

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 Emergency Feedwater (EFW) System 4

BASES

INSERT 1

BACKGROUND

INSERT 2

The EFW System automatically supplies feedwater to the steam generators to remove decay heat from the Reactor Coolant System (RCS) upon the loss of normal feedwater supply. The EFW pumps take suction through separate and independent suction lines from the condensate storage tank (CST) (LCO 3.7.6, "Condensate Storage Tank (CST)"), and pump to the steam generator secondary side through the EFW nozzles. 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, "Main Steam Safety Valves (MSSVs)"), or atmospheric vent valves (AVVs) (LCO 3.7.4, "Atmospheric Vent Valves (AVVs)"). If the main condenser is available, steam may be released via the Turbine Bypass System and recirculated to the CST. 2

AFW s AFW s

[The following system description is provided as an example. Actual system description should be provided by the specific unit.] The EFW System consists of two turbine driven EFW pumps, each of which provides a nominal 100% capacity, and one nonsafety grade motor driven EFW pump. The steam turbine driven EFW pumps receive steam from either of the two main steam headers, upstream of the main steam isolation valves (MSIVs). The EFW System supplies a common header capable of feeding either or both steam generators. The 100% capacity is sufficient to remove decay heat and cool the unit to decay heat removal (DHR) entry conditions. The EFW System normally receives a supply of water from the CST. A safety grade source of water is also supplied by the Service Water System (SWS). Automatic valves on the supply piping open on low pressure in the supply piping to transfer the water supply from the CST to the SWS. A third source of water can be supplied by manually aligning the fire protection header to the EFW pump suction.] Thus, the requirements for diversity in motive power sources for the EFW System are met. 3

AFW steam AFW AFW AFW water via two headers, each System AFW s s AFW

INSERT 3

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

The EFW System is designed to supply sufficient water to cool the unit to DHR entry conditions with steam being released through the ADVs or condenser.

System

MSSVs or atmospheric vent valves

1 **INSERT 1**

Emergency Feedwater (EFW) consists of two Auxiliary Feedwater (AFW) trains and the Motor Driven Feedwater Pump (MDFP) train.

1 **INSERT 2**

The AFW System provides a safety related source of feedwater to the secondary side of the steam generators in the event of a loss of normal feedwater flow to remove reactor decay heat.

1 **INSERT 3**

The MDFP train provides feedwater to the steam generators during normal plant startup and shutdown. The MDFP train is also designed to provide a backup supply of feedwater to the steam generators in the event of a total loss of both AFW and main feedwater (MFW). The MDFP train can be aligned to take suction from the condensate storage tanks, deaerator storage tanks, or the SWS. The MDFP discharge can be aligned to either the AFW System or the MFW System. During plant operation when reactor power is > 40% RTP, the MDFP train is aligned as an EFW train and is capable of delivering water to both steam generators. In addition, since the MDFP uses the AFW flowpaths to discharge to the steam generators, the position of the steam generator inlet valves affects the MDFP in addition to the AFW pumps.

The MDFP train is non-safety related and provides a diverse means of supplying emergency feedwater to the steam generators.

All changes are 1 unless otherwise noted

EFW System 4
B 3.7.5

BASES

BACKGROUND (continued)

AFW System

INSERT 4

The EFW actuates automatically on low steam generator level, low steam generator pressure, or loss of four reactor coolant pumps.

The EFW System is discussed in the FSAR, Sections [9.2.7] and [9.2.8] (Refs. 1 and 2, respectively). 3

U

APPLICABLE SAFETY ANALYSES

AFW

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

The design basis of the EFW 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 safety valve set pressure plus 3%.

main steam

In addition, the EFW System must supply enough makeup water to replace steam generator secondary inventory being lost as steam as the unit cools to MODE 4 conditions. Sufficient EFW flow must also be available to account for flow losses such as pump recirculation and line breaks. 6

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

Main steam

MSLB

a. Feedwater line break (FWLB) and ;

b. Loss of main feedwater.

In addition, the minimum available EFW flow and system characteristics are serious considerations in the analysis of a small break loss of coolant accident.

AFW

following

[The EFW System design is such that it can perform its function following a loss of the turbine driven main feedwater pumps or an FWLB, combined with a loss of normal or reserve electric power.] 3

offsite

INSERT 5

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

AFW

and the MDFP train satisfies Criterion 4 of 10 CFR 50.36(c)(2)(ii).

1 **INSERT 4**

a Steam and Feedwater Rupture Control System (SFRCS) actuation signal (i.e., Main Steam Line Pressure - Low, Feedwater/Steam Generator Differential Pressure - High, Steam Generator Level - Low, and Loss of RCPs).

1 **INSERT 5**

The MDFP train is not credited in any accident analysis; however in the event of a line break in the steam supply piping of one AFW pump turbine and a single failure in the redundant AFW train, the MDFP train is capable of providing emergency feedwater to the steam generators.

All changes are 1 unless otherwise noted

BASES

LCO

This LCO provides assurance that ~~the~~ EFW ~~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~~ EFW ~~pumps, in two diverse~~ trains (consisting of two AFW trains and the MDFP train) 3 are required to be OPERABLE to ensure the availability of ~~residual~~ decay heat removal capability for all events accompanied by a loss of offsite power and a single failure. ~~[~~This is accomplished by powering two AFW 3 pumps by steam driven turbines supplied with steam from a source not isolated by the closure of the MSIVs, and one motor driven pump from a power source that, in the event of loss of offsite power, ~~is~~ can be supplied by ~~the~~ an emergency diesel generator.~~]~~

~~The~~ EFW ~~System~~ is considered to be OPERABLE when the components and flow paths required to provide EFW flow to the steam generators are OPERABLE. This requires that each of the ~~[two]~~ ~~turbine driven EFW~~ AFW 3 pump~~[s]~~ be OPERABLE with redundant steam supplies from each of the main steam lines upstream of the MSIVs and each capable of supplying EFW flow to ~~either~~ both of the ~~two~~ steam generators (except when a steam generator is inoperable and isolated) 6. The ~~[nonsafety grade]~~ ~~motor driven EFW~~ MDFP ~~pump(s)~~ and ~~[the]~~ associated flow path~~[s]~~ to the ~~EFW~~ AFW System ~~[are]~~ also 3 required to be OPERABLE (and capable of supplying flow to both steam generators (except when a steam generator is inoperable and isolated)) 6. The piping, valves, instrumentation, and controls in the required flow paths shall also be OPERABLE. The primary and secondary sources of water to ~~the~~ EFW ~~System~~ are required to be OPERABLE. The associated flow paths from ~~the~~ EFW ~~System~~ primary and secondary sources of water to all EFW pumps also are required to be OPERABLE.

The LCO is modified by a Note indicating that ~~one EFW~~ the MDFP train~~, which includes a motor driven EFW pump,~~ 5 is required in MODE 4. This is because of reduced heat removal requirement, the short duration of MODE 4 in which feedwater is required, and the insufficient steam supply available in MODE 4 to power the ~~turbine driven EFW~~ AFW pump~~.~~ s.

APPLICABILITY

In MODES 1, 2, and 3, ~~the~~ EFW ~~System~~ is required to be OPERABLE and to function in the event that the main feedwater is lost. In addition, ~~the~~ EFW ~~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, ~~with RCS temperature above [212]°F, the~~ EFW ~~System~~ may 4 be used for heat removal via the steam generators. In MODE 4, the steam generators are used for heat removal until the DHR System is in operation.

In MODES 5 and 6, the steam generators are not used for ~~DHR~~ heat removal and ~~the~~ 6 EFW ~~System~~ is not required.

All changes are TSTF-412 unless otherwise noted

EFW ~~System~~ 4
B 3.7.5

BASES

ACTIONS

A Note prohibits the application of LCO 3.0.4.b to an inoperable EFW train when entering MODE 1. There is an increased risk associated with entering MODE 1 with EFW 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.

A.1 3

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

one AFW train · 4 · due to one inoperable steam supply · for any reason · an AFW train · AFW · an AFW train

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

due to one inoperable steam supply · AFW train · and the ~~turbine driven~~ train is still capable of performing its specified function for most postulated events

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

an · 4

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

5 · In addition, for either · or · due to one inoperable steam supply · an AFW train · AFW train · 4 · s · inoperable · AFW

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 ~~EFW~~ 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.

AFW · for an inoperable ~~turbine driven EFW~~ pump in MODE 3 · AFW · 4 · 3

All changes are TSTF-412 unless otherwise noted

EFW System 4
B 3.7.5

BASES

ACTIONS (continued)

B.1

in MODE 1, 2, or 3 for reasons other than Condition A 3

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

INSERT 6

D.1 and D.2

When ~~either~~ Required Action A.1, ~~or Required Action~~ B.1, C.1, or C.2 cannot be completed within the required Completion Time, or when two EFW trains are inoperable for reasons other than Condition C in MODE 1, 2, or 3, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours and in MODE 4 within 12 hours. 3 3 3

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

In MODE 4, with two AFW trains inoperable, operation is allowed to continue because only the MDFP ~~one motor driven EFW~~ train is required in accordance with the Note that modifies the LCO. Although not required, the unit may continue to cool down and initiate DHR. 1 4

E.1

Required Action E.1 is modified by a Note indicating that all required MODE changes ~~or power reductions~~ are suspended until at least one EFW train is restored to OPERABLE status.

With all EFW trains 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 grade 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 at least one EFW train to OPERABLE status. LCO 3.0.3 is not applicable, as it could force the units into a less safe condition. 3

All changes are TSTF-412 unless otherwise noted

B 3.7.5

INSERT 6

C.1 and C.2

MDFP

With the ~~required~~ ~~motor driven EFW~~ train (pump or flow path) inoperable and one of the ~~turbine driven EFW~~ trains inoperable due to one inoperable steam supply, action must be taken to restore the affected equipment to OPERABLE status within ~~[24]~~ [48] hours. 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 inoperable ~~turbine driven EFW~~ pump due to the faulted ~~SG~~. In this condition, the EFW ~~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 EFW pumps or due to the remaining EFW pump having to feed a faulted SG].~~ 5 4 4 3 1 1 3

AFW

AFW

steam generator

steam generators

~~-----------------------------------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% EFW 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 inoperable turbine driven EFW pump. The 48 hour Completion Time is applicable to plants that can still meet the safety analysis requirement of 100% EFW 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 EFW pump.~~
~~---~~ 7

~~[The 24 hour Completion Time is reasonable based on the remaining OPERABLE steam supply to the affected turbine driven EFW pump, the availability of the remaining OPERABLE turbine driven EFW pump, and the low probability of an event occurring that would require the inoperable steam supply to be available for the affected turbine driven EFW pump]~~ 3

AFW

[The 48 hour Completion Time is reasonable based on the fact that the remaining ~~turbine driven EFW~~ train is capable of providing 100 % of the EFW flow requirements, and the low probability of an event occurring that would challenge the EFW ~~system~~.] 3 1 1

BASES

ACTIONS (continued)

F ~~E~~.1 TSTF-412

In MODE 4, either the steam generator loops or the DHR loops can be used to provide heat removal, which is addressed in LCO 3.4.6, "RCS Loops - MODE 4." With ~~one EFW~~ the required MDFP train inoperable, action must be ~~taken~~ ~~to~~ initiated to immediately restore the inoperable train to OPERABLE status. 4 5

SURVEILLANCE REQUIREMENTS

SR 3.7.5.1

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

INSERT 7 4

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

SR 3.7.5.2

Verifying that each ~~EFW~~ AFW pump's developed head at the flow test point is greater than or equal to the required developed head ensures that ~~EFW~~ AFW pump performance has not degraded during the cycle. Flow and differential head are normal tests of pump performance required by the ASME Code (Ref. 3). Because it is undesirable to introduce cold ~~EFW~~ AFW into the steam generators while they are operating, this test is performed on recirculation flow. 4 4

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 in the ASME Code (Ref. 3), at 3 month intervals, satisfies this requirement.

4 **INSERT 7**

A Note has been added that allows the MDFP train valves to be in the non-correct position (aligned in the Main Feedwater mode) when in MODE 1 $\leq$ 40% RTP or in MODE 2, 3, or 4, provided the valves are capable of being locally realigned to the correct position (i.e., aligned in the AFW mode). The capability of the valves to be locally realigned to the correct position is met if a handwheel is present for each manual valve and either a handwheel is present or a power supply is available for each power operated valve. This Note is necessary because the MDFP train is normally aligned to the Main Feedwater System during a reactor startup. The allowance is acceptable since the MDFP train is a manually actuated train.

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BASES

SURVEILLANCE REQUIREMENTS (continued)

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.

INSERT 8 4

SR 3.7.5.8 4

AFW 4

This SR verifies that EFW can be delivered to the appropriate steam generator in the event of any accident or transient that generates a Steam and Feedwater Rupture Control System (SFRCS) signal by demonstrating that each automatic valve in the flow path actuates to its correct position on an actual or simulated actuation signal. This SR is not required for valves that are locked, sealed, or otherwise secured in 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 also acceptable based on operating experience and design reliability of the equipment. This SR is modified by a Note that states the SR is not required to be met in MODE 4. In MODE 4, the required AFW train is already aligned and operating. 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.] [The] Note [2] states that the SR is not required to be met in MODE 4. [In MODE 4, the required pump is already operating and the autostart function is not required.] [In MODE 4, the heat removal requirements would be less providing more time for operator action to manually start the required AFW pump.]

an 1 4 AFW 24 3 24 3 4 TSTF-412 EFW 3 4 indicating 4 TSTF-412 EFW

SR 3.7.5.9 5 4

AFW

This SR verifies that the turbine driven EFW pumps start in the event of any accident or transient that generates an SFRCS signal by demonstrating that each turbine driven EFW pump starts automatically on an actual or simulated actuation signal. These pumps are not required in MODE 4. 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. 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

4 AFW 4 24 3 indicating 3 4

4 **INSERT 8**

SR 3.7.5.3

This SR verifies the ability of the MDFP train to operate in the emergency feedwater mode. This SR verifies the proper operation of each power operated and automatic valve in the MDFP train flow path to the AFW System, and that the MDFP can be started and operated from the control room.

As noted, the SR is not required to be performed until 73 hours after the MDFP train is aligned to the AFW System. This Note is necessary because the MDFP train is normally aligned to the Main Feedwater System during a reactor startup. This allowance is acceptable since any inoperabilities with the MDFP train would likely be discovered during the reactor startup when it is being used in the main feedwater mode.

The 92 day Frequency is acceptable based on engineering judgment and corresponds to the testing requirements for pumps as contained in the ASME Code (Ref. 3).

All changes are 4 unless otherwise noted

EFW System
B 3.7.5

BASES

SURVEILLANCE REQUIREMENTS (continued)

pressure to perform the test.] [The] Note [2] states that the SR is not required to be met in MODE 4. [In MODE 4, the required pump is already operating and the autostart function is not required.] [In MODE 4, the heat removal requirements would be less providing more time for operator action to manually start the required AFW pump.]

TSTF-412 changes not shown

------------------------------------REVIEWER'S NOTE------------------------------------
Some plants may not routinely use the AFW for heat removal in MODE 4. The second justification is provided for plants that use a startup feedwater pump rather than AFW for startup and shutdown.
--- 7

SR 3.7.5.5 6 and SR 3.7.5.7

(for SR 3.7.5.6) and MODE 3 (for SR 3.7.5.7), following refueling or

This SR ensures that the EFW System is properly aligned by verifying the flow paths 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 EFW flow paths must be demonstrated before sufficient core heat is generated that would require the operation of the EFW System during a subsequent shutdown. The Frequency is reasonable, based on engineering judgment, in view of other administrative controls to ensure that the flow paths are OPERABLE. To further ensure EFW 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 generator is properly aligned. (This SR is not required by those units that use EFW for normal startup and shutdown.) 1

INSERT 9

s

common 1

[SR 3.7.5.6 and SR 3.7.5.7

For this facility, the CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION for the EFW pump suction pressure interlocks are as follows:

A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable CHANNEL FUNCTIONAL TEST of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions.]

1 **INSERT 9**

The flow paths shall be verified by either steam generator level change or AFW safety grade flow indication (e.g., the Post Accident Monitoring AFW Flow Rate indicators). Verification of actual AFW flow capacity is not required by this SR.

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4

BASES

REFERENCES

U

1. FSAR, Section 9.2.7. 1 2

2. FSAR, Section 9.2.8. 1 2

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

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.5 BASES, EMERGENCY FEEDWATER (EFW)

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

2. Changes are made to reflect changes made to another Specification (AVVs are not in the Davis-Besse ITS).

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

4. Changes made to reflect changes made to the Specification.

5. Changes are made to reflect the Specification.

6. Editorial change made for consistency.

7. 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.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.5, EMERGENCY FEEDWATER (EFW)

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 3.7.6

ITS

PLANT SYSTEMS

CONDENSATE STORAGE TANKS

LIMITING CONDITION FOR OPERATION

LCO 3.7.6 — 3.7.1.3 The condensate storage tanks shall be OPERABLE with a minimum
SR 3.7.6.1 — ~~contained~~ usable volume of ~~250,000~~ 270,300 gallons of water. A04

APPLICABILITY: MODES 1, 2 and 3. Add proposed second Applicability M01

ACTION:

With the condensate storage tanks inoperable, within 4 hours either: A02

ACTION A — a. Restore the condensate storage tanks to OPERABLE status or be in HOT
ACTION B — SHUTDOWN within ~~the next 12~~ 24 hours, or MODE 3 within 6 hours L01 without reliance on steam generator for heat removal M01

ACTION A — b. Verify by administrative means the OPERABILITY of the ~~service water system as a~~ backup supply ~~to the auxiliary feedwater system,~~ verify once per 12 hours thereafter, and restore the condensate storage tanks to OPERABLE status within 7 days or be in HOT SHUTDOWN within
ACTION B — ~~the following 12~~ 24 hours. LA01 M01 without reliance on steam generator for heat removal MODE 3 within 6 hours L01

SURVEILLANCE REQUIREMENTS

SR 3.7.6.1 4.7.1.3.1 The condensate storage tanks shall be demonstrated OPERABLE at least once per 12 hours by verifying the ~~contained~~ usable water volume to be within its limits ~~when the tanks are the supply source for the auxiliary feedwater pumps.~~ A04 A03

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

ADMINISTRATIVE CHANGES

A01 In the conversion of the Davis-Besse 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-1430, Rev. 3.1, "Standard Technical Specifications-Babcock and Wilcox 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 CTS 3.7.1.3 Actions provide two compensatory actions for when the CSTs are found to be inoperable. CTS 3.7.1.3 Action a allows four hours to restore the CSTs to OPERABLE status or be in MODE 4 within the next 12 hours. CTS 3.7.1.3 Action b alternatively allows 4 hours to demonstrate the OPERABILITY of the Service Water System as a backup supply to the Auxiliary Feedwater System and restore the CSTs to OPERABLE status within 7 days or be in MODE 4 within the next 12 hours. ITS 3.7.6 Required Action A.1 requires the verification by administrative means of an OPERABLE backup water supply at a Completion Time of 4 hours and once per 12 hours thereafter and Required Action A.2 requires the CSTs to be restored to OPERABLE status within 7 days. This changes the CTS by deleting the alternative requirement in CTS 3.7.1.3 Action a to restore the CSTs to OPERABLE status within 4 hours.

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

A03 CTS 4.7.1.3.1 states that the CSTs shall be demonstrated OPERABLE at least once per 12 hours by verifying the water level is within its limits when the tank is the supply source for the Auxiliary Feedwater System. ITS SR 3.7.6.1 states that the usable volume in the CSTs must be verified to be ≥ 270,300 gallons. This changes the CTS by deleting detail that the Surveillance must be performed when the CSTs are the supply source for the Auxiliary Feedwater System.

The purpose of CTS 4.7.1.3.1 is to ensure the CSTs are OPERABLE when they are the supply source for the Auxiliary Feedwater System. CTS 4.0.3 states, in part, "Surveillance requirements do not have to be performed on inoperable equipment." ITS SR 3.0.1 states "Surveillances do not have to be performed on inoperable equipment or variables outside specified limits." If the CSTs are not capable of supplying the Auxiliary Feedwater System, the CSTs are considered inoperable and the ITS 3.7.6 ACTION A must be entered. Since inoperable equipment does not have to be tested, the removal of the phrase "when the tanks are the supply source for the auxiliary feedwater pumps" is acceptable. This

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

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

A04 This change to CTS 3.7.1.3 is provided in the Davis-Besse ITS consistent with License Amendment Request No. 05-0007, submitted to the USNRC for approval in FENOC letter Serial Number 3198, from Mark B. Bezilla (FENOC) to USNRC, dated April 12, 2007. As such, this change is administrative.

MORE RESTRICTIVE CHANGES

M01 The CTS requirements on the CSTs are applicable in MODES 1, 2, and 3. ITS 3.7.6 is applicable in MODES 1, 2, and 3, and in addition, MODE 4 when a steam generator is relied upon for heat removal. Consistent with this change in Applicability, the requirement to be in MODE 4 "without reliance on steam generator for heat removal" is added as indicated in ITS 3.7.6 Required Action B.2. This changes the CTS requirements by requiring the 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 in MODE 4 if a decay heat removal (DHR) loop has not yet been placed in service. If offsite power were to be lost when the DHR loop is not yet in service, the steam generators, fed from an emergency feedwater pump with the CSTs providing the suction source, would be relied upon for decay heat removal. The 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.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.7.1.3 Action b requires the Service Water System to be demonstrated as a backup supply to the Auxiliary Feedwater System at least once per 12 hours by verifying that the Service Water System is OPERABLE whenever the Service Water System is the supply source for the Auxiliary Feedwater System. ITS 3.7.6 Required Action A.1 requires the verification of OPERABILITY of a backup water supply. This changes the CTS by moving the detail that the Service Water System provides the backup supply for the Auxiliary Feedwater System from the CTS to the Bases.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement to verify by administrative means OPERABILITY of a backup water supply when the CSTs are found to be inoperable. Also, this change is acceptable because the

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

removed information will be adequately controlled in ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L01 *(Category 3 – Relaxation of Completion Time)* With the CSTs inoperable, CTS 3.7.1.3 Action a requires restoration of the CSTs within 4 hours or be in MODE 4 within the next 12 hours, while CTS 3.7.1.3 Action b requires demonstration of OPERABILITY of the backup supply within 4 hours and restoration of the CSTs to OPERABLE status within 7 days or be in MODE 4 within the next 12 hours. ITS 3.7.6 Required Action A.1 requires the verification of OPERABILITY of the backup water supply within 4 hours and Required Action A.2 requires the CSTs to be restored to OPERABLE status within 7 days. If any of these Required Actions are not met within the associated Completion Time, ITS 3.7.6 ACTION B requires the unit to be in MODE 3 within 6 hours and in MODE 4 without reliance on steam generator for heat removal within 24 hours. This changes the time to be in MODE 4 without reliance on the steam generators for heat removal from 12 hours to 24 hours and adds an additional requirement to be in MODE 3 within 6 hours.

The purpose of CTS 3.7.13 Actions a and b 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 24 hours to be in MODE 4 without reliance on the steam generators for heat removal recognizes that additional time is required from the time MODE 4 is entered until the steam generators are not relied upon for heat removal. The new requirement that the unit be in MODE 3 within 6 hours ensures a unit shutdown is commenced within a reasonable period of time upon failure to restore the CSTs to OPERABLE status within the allowed Completion Time. This change is designated as less restrictive because additional time is allowed to restore parameters to within the LCO limits than was allowed in the CTS.

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

CTS

CST s
3.7.6 (1)

3.7 PLANT SYSTEMS (1)

3.7.6 Condensate Storage Tank s (CST)

3.7.1.3 LCO 3.7.6 The [two] CST[s] shall be OPERABLE. (2)

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

ACTIONS

CTS	CONDITION	REQUIRED ACTION	COMPLETION TIME	
Action a, Action b	A. The [two] 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	(2) (2)
Action a, Action b	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	(2)

SURVEILLANCE REQUIREMENTS

CTS	SURVEILLANCE	FREQUENCY	
4.7.1.3.1	SR 3.7.6.1 Verify usable volume in the CST s ~~level~~ is ≥ ~~[250,000]~~ 270,300 gal.	12 hours	(3) (1) (2)

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

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

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

3. This is an editorial change for clarity.

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

All changes are 1 unless otherwise noted

s

CST 3
B 3.7.6

B 3.7 PLANT SYSTEMS

B 3.7.6 Condensate Storage Tank (CST)

s

BASES

two s the primary

and the Motor Driven Feedwater Pump when aligned to the AFW mode 3

BACKGROUND

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 ~~Emergency~~ Feedwater (EFW) System (LCO 3.7.5, "Emergency Feedwater (EFW) ~~System~~"). The steam produced is released to the atmosphere by the main steam safety valves (MSSVs) or the atmospheric vent valves. 2

s Auxiliary A

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

INSERT 1

~~Because the CST is a principal component in removing residual heat from the RCS, it is designed to withstand earthquakes and other natural phenomena, as well as missiles that might be generated by natural phenomena. The CST is designed to Seismic Category I to ensure availability of the feedwater supply. Feedwater is also available from an alternate source(s).~~

s U

A description of the CST is found in the FSAR, Section [9.2.6] (Ref. 1). 2

APPLICABLE SAFETY ANALYSES

the preferred source of

s

for the AFW System

The CST provides ~~cooling~~ water to ~~remove decay heat and~~ cool down ~~the unit~~ following all events in the accident analysis, as discussed in the FSAR, Chapters [6] and [15] (Refs. 2 and 3, respectively). For anticipated operational occurrences and accidents that do not affect the OPERABILITY of the steam generators, the ~~analysis assumption is~~ ~~generally 30 minutes~~ at MODE 3, steaming ~~through the MSSVs~~, followed by a cooldown to decay heat removal (DHR) entry conditions at the design cooldown rate.

the RCS in the event of a loss of offsite power

13 hours

CSTs design provides sufficient water inventory for

to atmosphere

~~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 CSTs are the preferred choice for makeup water to the steam generators because they meet secondary water chemistry requirements. The CSTs are Seismic Class II. The Service Water System (SWS) is the Safety Grade source of water in the event of an earthquake. In the event of a reduction in the inventory of the CSTs (i.e., a low level in the CSTs as sensed by Auxiliary Feedwater pump low suction pressure), the Auxiliary Feedwater System supply will automatically switch from the CSTs to the Service Water System.

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All changes are 1 unless otherwise noted

s

CST 3

B 3.7.6

BASES

APPLICABLE SAFETY ANALYSES (continued)

> a. ~~Failure of the diesel generator powering the motor driven EFW pump to the unaffected steam generator (requiring additional steam to drive the remaining EFW pump turbine) and~~
>
> b. ~~Failure of the steam driven EFW pump (requiring a longer time for cooldown using only one motor driven EFW pump).~~
>
> ~~These are not usually the limiting failures in terms of consequences for these events.~~

y

s The CST satisfi~~es~~ Criteria 2 and 3 of 10 CFR 50.36(c)(2)(ii).

LCO

design considerations

with steam discharge to the atmosphere

To satisfy ~~accident analysis assumptions~~, the [two] CSTs must contain sufficient cooling water to remove decay heat for 13 hours following a reactor trip ~~from 102% RTP~~ and then to cool down the RCS to DHR System entry conditions~~, assuming a coincident loss of offsite power and most adverse single failure~~. While so doing, the CSTs must retain sufficient water to ensure adequate net positive suction head for the ~~EFW~~ AFW pump[s] during the cooldown, to account for any losses from the steam driven EFW pump turbine~~, as well as losses incurred before isolating EFW to a broken line~~. 2 2

A s

CSTs must contain

270,300

The ~~level required is equivalent to~~ a usable volume of ~~[250,000]~~ gallons, which is based on holding the unit in MODE 3 for 13 hours, followed by a cooldown to DHR System entry conditions. 3 2 3

usable s

The OPERABILITY of the CSTs is determined by maintaining the tank ~~level~~ volume at or above the minimum required ~~level~~ volume. 3

a

APPLICABILITY In MODES 1, 2, 3, and in MODE 4 when steam generator is being relied upon for heat removal, the CST~~is~~ s are required to be OPERABLE. 6

In MODES 5 and 6, the CST~~is~~ s are not required because the ~~EFW~~ AFW System is not required.

s

CST 3

B 3.7.6

BASES

ACTIONS

A.1 and A.2

(the Service Water System)

AFW

is not the preferred source of water (i.e., it is not preferred to add this backup source of water to the steam generators)

As an alternative to unit shutdown, the OPERABILITY of the backup water supply should be verified within 4 hours and once every 12 hours thereafter. The OPERABILITY of the backup feedwater supply must include verification, by administrative means, of the OPERABILITY of flow paths from the backup supply to the ~~EFW~~ pumps ~~and availability of the required volume of water in the backup supply~~. 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 use of the water from the CST[s].

1 4 5 3 s 1 2

B.1 and B.2

any Required Action and

is not met

If ~~the CST cannot be restored to OPERABLE status in the~~ associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply, with the DHR System in operation. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4, without reliance on steam generators for heat removal, within [24] hours. ~~This allows an additional 6 hours for the DHR System to be placed in service after entering MODE 4.~~

4 2 4

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 3.7.6.1

usable

This SR verifies that the CST[s] contain[s] the required volume of cooling water. 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. The 12 hour Frequency is considered adequate in view of other indications in the control room, including alarms, to alert the operator to abnormal deviations in CST levels.

2 3 s 1

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S

CST
B 3.7.6

3

BASES

REFERENCES	1. FSAR, Section [9.2.6].
	2. FSAR, Chapter [6].
	3. FSAR, Chapter [15].

U

1 2

1

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

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

4. Changes made to be consistent with the Specification.

5. The Service Water System is supplied by the Ultimate Heat Sink (UHS), which is required by ITS 3.7.9. A periodic verification of UHS is not needed.

6. Typographical/grammatical error corrected.

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 WATER (CCW) SYSTEM

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

A01

ITS 3.7.7

ITS

PLANT SYSTEMS

3/4.7.3 COMPONENT COOLING WATER SYSTEM

LIMITING CONDITION FOR OPERATION

LCO 3.7.7 3.7.3.1 Two ~~independent~~ component cooling water loops shall be OPERABLE. LA01

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION: Add proposed Required Action A.1 Notes M01

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

SURVEILLANCE REQUIREMENTS

4.7.3.1 Each component cooling water loop shall be demonstrated OPERABLE: A02

Add proposed SR 3.7.7.1 Note

SR 3.7.7.1 a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) in the flow path servicing safety related equipment that is not locked, sealed or otherwise secured in position, is in its correct position. A03

b. At least once each REFUELING INTERVAL, by:

SR 3.7.7.2 1. Verifying that each automatic valve in the flow path that is not locked, sealed, or otherwised secured in position, actuates to its correct position on an actual or ~~SFAS~~ actuation test signal. L01 LA02

SR 3.7.7.3 2. ~~Verifying that each component cooling water emergency pump~~ starts automatically on an actual or ~~SFAS~~ actuation test signal. L02 L01 LA02

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

ADMINISTRATIVE CHANGES

A01 In the conversion of the Davis-Besse 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-1430, Rev. 3.1, "Standard Technical Specifications-Babcock and Wilcox 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 4.7.3.1 does not contain an explicit reference to isolating CCW flow to individual components. ITS SR 3.7.7.1 contains a Note which states, "Isolation of CCW flow to individual components does not render CCW System inoperable." This changes CTS by adding an allowance that is not explicitly stated in the CTS.

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

A03 CTS 4.7.3.1.a requires verification that each CCW valve (manual, power operated, or automatic) servicing safety related equipment that is not locked, sealed, or otherwise secured in position, is in its correct position. ITS SR 3.7.7.1 requires verification that each CCW manual, power operated, and automatic valve in the flow path servicing safety related equipment that is not locked, sealed, or otherwise secured in position, is in the correct position. This changes the CTS by adding the words "in the flow path" to CTS 4.7.3.1.a.

The purpose of CTS 4.7.3.1.a is to ensure all valves in the CCW flow path are in the correct position. The addition of the words "in the flow path" does not change the intent of the Surveillance Requirement. Each manual, power operated, and automatic valve servicing safety related equipment that is not locked, sealed, or otherwise secured in position will continue to be verified to be in the correct position. Each CCW automatic valve in the flow path that is not locked, sealed or otherwise secured in position, will still be checked to ensure it actuates to the correct position on an actual or simulated actuation signal. This change is designated as administrative because it does not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

M01 The Action for CTS 3.7.3.1 allows 72 hours to restore an inoperable CCW loop to OPERABLE status. ITS 3.7.7 ACTION A has this same requirement, however two Notes have been included. The ITS 3.7.7 Required Action A.1 Note 1 requires entry into the applicable Conditions and Required Actions of LCO 3.8.1,

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

"AC Sources- Operating," for an emergency diesel generator made inoperable by CCW. The ITS 3.7.7 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 decay heat removal loop made inoperable by CCW. This changes the CTS by explicitly specifying the applicable Conditions and Required Actions of ITS LCO 3.4.6 must be entered.

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

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.7.3.1 states that two "independent" CCW loops shall be OPERABLE. ITS 3.7.7 requires two CCW loops to be OPERABLE, but does not contain the detail that the loops must be independent. This changes the CTS by moving the detail that the CCW loops are independent to the Bases.

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

LA02 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 4.7.3.1.b.1 and 4.7.3.1.b.2 require verification of the automatic actuation of CCW components on an "SFAS" test signal. ITS SR 3.7.7.2 and SR 3.7.7.3 do not state the specific type of signal, but only specify an actual or simulated "actuation" signal. This changes CTS by moving the type of actuation signal (i.e., SFAS) to the Bases.

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

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

protection of public health and safety. The ITS still retains the requirement to verify that appropriate equipment actuates upon receipt of 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 of the ITS. 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 Specification.

LESS RESTRICTIVE CHANGES

L01 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.7.3.1.b.1 and 4.7.3.1.b.2 require verification of the automatic actuation of component cooling water components on an SFAS "test" signal. ITS SR 3.7.7.2 and SR 3.7.7.3 specify that the signal may be from either an "actual" or simulated (i.e., test) signal. This changes the CTS by explicitly allowing the use of either an actual or simulated signal for the test.

The purpose of CTS 4.7.3.1.b.1 and 4.7.3.1.b.2 is to ensure the CCW components operate correctly upon receipt of an actuation signal. This change is acceptable because the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. Equipment cannot discriminate between an "actual," "simulated," or "test" signal and, therefore, the results of the testing are unaffected by the type of signal used to initiate the test. This change allows taking credit for unplanned actuation if sufficient information is collected to satisfy the Surveillance test requirements. The change also allows a simulated signal to be used, if necessary. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L02 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.7.3.1.b.1 requires verification that each CCW automatic valve in the flow path actuates to its correct position. ITS SR 3.7.7.2 requires verification that each CCW automatic valve in the flow path "that is not locked, sealed, or otherwise secured in position" actuates to the correct position. This changes the CTS by excluding those valves that are locked, sealed, or otherwise secured in position from the verification.

The purpose of CTS 4.7.3.1.b.1 is to provide assurance that if an event occurred requiring CCW valves to be in their correct position, then those requiring automatic actuation would actuate to their correct position. This change is acceptable because the deleted Surveillance is not necessary to verify that the equipment used to meet the LCO can perform its required functions. Thus, appropriate equipment continues to be tested to in a manner and at a Frequency necessary to provide confidence that the equipment can perform its assumed safety function. Those automatic valves that are locked, sealed, or otherwise secured in position are not required to actuate on a component cooling water actuation signal in order to perform their safety function because they are already

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

in the required position. Testing such valves would not provide any additional assurance of OPERABILITY. Valves that are required to actuate will continue to be tested. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

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

CTS

3.7 PLANT SYSTEMS

3.7.7 Component Cooling Water (CCW) System

3.7.3.1 LCO 3.7.7 Two CCW ~~trains~~ loops shall be OPERABLE. 1

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

ACTIONS

CTS	CONDITION	REQUIRED ACTION	COMPLETION TIME	
Action	A. One CCW ~~train~~ loop inoperable.	A.1 -------------NOTES-------------- 1. Enter applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources - Operating," for emergency diesel generator made inoperable by CCW. 2. Enter applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops - MODE 4," for decay heat removal loop made inoperable by CCW. ----------------------------------- Restore CCW ~~train~~ loop to OPERABLE status.	72 hours	1 2 1
Action	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	3

CTS

SURVEILLANCE REQUIREMENTS

CTS	SURVEILLANCE		FREQUENCY	
4.7.3.1.a	SR 3.7.7.1	-----NOTE----- Isolation of CCW flow to individual components does not render CCW System inoperable. ----- Verify each CCW manual, power operated, and automatic valve in the flow path servicing safety related equipment, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days	
4.7.3.1.b.1	SR 3.7.7.2	Verify each CCW automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	~~[18]~~ 24 months	4
4.7.3.1.b.2	SR 3.7.7.3	Verify each required CCW pump starts automatically on an actual or simulated actuation signal.	~~[18]~~ 24 months	5 4

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

1. Changes are made (additions, deletions, and/or changes) to the ISTS that reflect the plant specific nomenclature.

2. Editorial changes made for clarity and to be consistent with the terminology in ITS 3.4.6.

3. Since Condition B applies to all Conditions in the ACTIONS Table, the term "of Condition A" is not necessary. This is consistent with the Writer's Guide for the Improved Standard Technical Specifications, TSTF-GG-05-01, Section 4.1.6.i.5.ii.

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

5. The Davis-Besse design includes a spare CCW pump and heat exchanger that can be substituted for one of the normal CCW pumps and its associated heat exchanger. Therefore SR 3.7.7.3 has been modified to only require the "required" CCW pumps to be tested. This is consistent with the use of the word required in the ITS, as discussed the Writer's Guide for the Improved Standard Technical Specifications, TSTF-GG-05-01, Section 4.1.3.

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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 3.7.7 Component Cooling Water (CCW) System

BASES

BACKGROUND

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

The

INSERT 1

~~A typical~~ CCW System is arranged as two independent full capacity cooling loops, and has isolatable nonsafety related components. ~~Each safety related train includes a full capacity pump, surge tank, heat exchanger, piping, valves, and instrumentation. Each safety related train is powered from a separate bus.~~ A common surge tank in the system provides sufficient net positive suction head for each pump and isolation of nonessential components on a low tank level signal. The surge tank is divided internally into two separate compartments by a center baffle approximately half the height of the tank. Each compartment serves a separate loop. This ensures that if a leak on one loop occurs, water remains available to the other loop. The pump in each loop ~~train~~ is automatically started on receipt of a safety features actuation signal, and all nonessential components are isolated.

Additional information on the design and operation of the CCW System, along with a list of the components served, is presented in the UFSAR, Section [9.2.2] (Ref. 1). The principal safety related function of the CCW System is the removal of decay heat from the reactor via the [decay heat removal (DHR) cooler ~~heat exchanger~~]. This may utilize the DHR System during a normal or post accident cooldown and shutdown, or during the recirculation phase following a loss of coolant accident. 2

APPLICABLE SAFETY ANALYSES

The design basis of the CCW System is to provide cooling water to the Emergency Core Cooling System, components and ~~emergency diesel generators~~ [EDGs] during DBA conditions. The CCW System also supplies cooling water to EDGs during a loss of offsite power.

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

The CCW System also functions to cool the unit from [DHR] entry conditions MODE 4 (T_{cold} < ~~[350]~~ 280°F) to MODE 5 (T_{cold} < [200]°F) during normal and post accident operations. The time required to cool from ~~[350]~~ 280°F to [200]°F is a function of the number of CCW and [DHR] loops ~~trains~~ operating. 2 One CCW loop ~~train~~ is sufficient to remove decay heat during subsequent operations with T_{cold} < [200]°F.

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

1 **INSERT 1**

The CCW System consists of three pumps, three heat exchangers, a surge tank and two closed cooling loops. Each closed cooling loop is capable of serving one train of Emergency Core Cooling System (ECCS) components and the associated emergency diesel generator (EDG). Each closed cooling loop is supplied by one of the three pumps. Three pumps and heat exchangers are provided so any one of the pump-heat exchanger units can be removed from service for maintenance or repair without reducing the capability or redundancy of the CCW System. Two of the CCW pumps are powered from the associated essential bus. The third CCW pump can be powered from either essential bus through interlocked supply breakers and can manually be aligned to supply either CCW loop.

All changes are 1 unless otherwise noted

BASES

LCO

loops

loop

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

loops

loop

loop

A CCW train is considered OPERABLE when:

portion of the

a. It has an OPERABLE pump and associated surge tank and ; 3

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

INSERT 2

individual

The isolation of CCW from other components or systems not required for safety may render these components or systems inoperable, but does not affect the OPERABILITY of the CCW System. 5

APPLICABILITY

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

cooler

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

ACTIONS

<u>A.1</u>

Required Action A.1 is modified by a Note indicating that the applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources - Operating," and LCO 3.4.6, "RCS Loops - MODE 4," should be entered if an inoperable CCW train results in an inoperable EDG or DHR loop. This is an exception to LCO 3.0.6 and ensures the proper actions are taken for these components.

loop

loop

loop

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. 4

loop

1 **INSERT 2**

Furthermore, the spare CCW pump and associated heat exchanger can be substituted for a normal CCW pump and heat exchanger, provided the power supply for the pump is aligned to the same essential bus as the pump it is replacing.

All changes are 1 unless otherwise noted

BASES

ACTIONS (continued)

B.1 and B.2

loop

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

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

SURVEILLANCE REQUIREMENTS

SR 3.7.7.1

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

Verifying the correct alignment for manual, power operated, and automatic valves in the CCW flow path provides assurance that the proper flow paths exist for CCW operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since they are verified to be in the correct position prior to locking, sealing, or securing. This SR also does not apply to valves which 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 potentially being mispositioned are in their 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

(i.e., SFAS)

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 SR is not required for valves that are locked, sealed, or otherwise secured in position under administrative

BASES

SURVEILLANCE REQUIREMENTS (continued)

24

controls. The [1/8] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant 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 [1/8] month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint. 2 2

SR 3.7.7.3

(i.e., SFAS)

24

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 [1/8] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant 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 [1/8] month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint. 1 2 2

REFERENCES U 1. FSAR, Section [9.2.2]. 1 2

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

1. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.
2. The brackets have been removed and the proper plant specific information/value has been provided.
3. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, TSTF-GG-05-01, Section 5.1.3.
4. Typographical error corrected.
5. Grammatical error corrected.

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Specific No Significant Hazards Considerations (NSHCs)

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

There are no specific NSHC discussions for this Specification.

ATTACHMENT 8

ITS 3.7.8, SERVICE WATER SYSTEM (SWS)

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

ITS 3.7.8

ITS

A01

PLANT SYSTEMS

3/4.7.4 SERVICE WATER SYSTEM

LIMITING CONDITION FOR OPERATION

LCO 3.7.8 3.7.4.1 Two independent service water loops shall be OPERABLE. LA01

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

Add proposed Required Action A.1 Notes M01

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

SURVEILLANCE REQUIREMENTS

4.7.4.1 Each service water loop shall be demonstrated OPERABLE:

Add proposed SR 3.7.8.1 Note A02

SR 3.7.8.1 a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) servicing safety related equipment that is not locked, sealed or otherwise secured in position, is in its correct position. in the flow path A03

b. At least once each REFUELING INTERVAL, by:

SR 3.7.8.2 1. Verifying that each automatic valve in the flow path actuates to its correct position on an SFAS test signal. actual or L01 actuation LA02

that is not locked, sealed, or otherwised secured in position. L02

SR 3.7.8.3 2. Verifying that each service water emergency pump starts automatically on an SFAS test signal.

actual or L01

actuation LA02

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

ADMINISTRATIVE CHANGES

A01 In the conversion of the Davis-Besse 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-1430, Rev. 3.1, "Standard Technical Specifications-Babcock and Wilcox 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 4.7.4.1 does not contain an explicit reference to isolating SWS flow to individual components. ITS SR 3.7.8.1 contains a Note which states, "Isolation of SWS flow to individual components does not render the SWS inoperable." This changes CTS by adding an allowance that is not explicitly stated in the CTS.

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

A03 CTS 4.7.4.1.a requires verification that each SWS valve (manual, power operated, or automatic) servicing safety related equipment that is not locked, sealed, or otherwise secured in position, is in its correct position. ITS SR 3.7.8.1 requires verification that 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. This changes the CTS by adding the words "in the flow path" to CTS 4.7.4.1.a.

The purpose of CTS 4.7.4.1.a is to ensure all valves in the SWS flow path are in the correct position. The addition of the words "in the flow path" does not change the intent of the Surveillance Requirement. Each manual, power operated, and automatic valve servicing safety related equipment that is not locked, sealed, or otherwise secured in position will continue to be verified to be in the correct position. Each SWS automatic valve in the flow path that is not locked, sealed or otherwise secured in position, will still be checked to ensure it actuates to the correct position on an actual or simulated actuation signal. This change is designated as administrative because it does not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

M01 The Action for CTS 3.7.4.1 allows 72 hours to restore an inoperable SWS loop 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 into the applicable Conditions and Required Actions of LCO 3.8.1,

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

"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 decay heat removal loop made inoperable by SWS. This changes the CTS by explicitly specifying the applicable Conditions and Required Actions of ITS LCO 3.4.6 must be entered.

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

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.7.4.1 states that two "independent" SWS loops shall be OPERABLE. ITS 3.7.8 requires two SWS loops to be OPERABLE, but does not contain the detail that the loops must be independent. This changes the CTS by moving the detail that the SWS loops are independent to the Bases.

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

LA02 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 4.7.4.1.b.1 and 4.7.4.1.b.2 require verification of the automatic actuation of SWS components on an "SFAS" test signal. ITS SR 3.7.8.2 and SR 3.7.8.3 do not state the specific type of signal, but only specify an actual or simulated "actuation" signal. This changes CTS by moving the type of actuation signal (i.e., SFAS) to the Bases.

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

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

protection of public health and safety. The ITS still retains the requirement to verify that appropriate equipment actuates upon receipt of 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 of the ITS. 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 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.7.4.1.b.1 and 4.7.4.1.b.2 require verification of the automatic actuation of SWS components on an SFAS "test" signal. ITS SR 3.7.8.2 and SR 3.7.8.3 specify that the signal may be from either an "actual" or simulated (i.e., test) signal. This changes the CTS by explicitly allowing the use of either an actual or simulated signal for the test.

The purpose of CTS 4.7.4.1.b.1 and 4.7.4.1.b.2 is to ensure the SWS components operate correctly upon receipt of an actuation signal. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. Equipment cannot discriminate between an "actual," "simulated," or "test" signal and, therefore, the results of the testing are unaffected by the type of signal used to initiate the test. This change allows taking credit for unplanned actuation if sufficient information is collected to satisfy the Surveillance test requirements. The change also allows a simulated signal to be used, if necessary. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L02 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.7.4.1.b.1 requires verification that each SWS automatic valve in the flow path actuates to its correct position. ITS SR 3.7.8.2 requires verification that each SWS automatic valve in the flow path "that is not locked, sealed, or otherwise secured in position" actuates to the correct position. This changes the CTS by excluding those SWS automatic valves that are locked, sealed, or otherwise secured in position from the verification.

The purpose of CTS 4.7.4.1.b.1 is to provide assurance that if an event occurred requiring the SWS valves to be in their correct position, then those requiring automatic actuation would actuate to their correct position. This change is acceptable because the deleted Surveillance Requirement is not necessary to verify that the equipment used to meet the LCO can perform its required functions. Thus, appropriate equipment continues to be tested to in a manner and at a Frequency necessary to provide confidence that the equipment can perform its assumed safety function. Those automatic valves that are locked, sealed, or otherwise secured in position are not required to actuate on an SWS actuation signal in order to perform their safety function because they are already

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

in the required position. Testing such valves would not provide any additional assurance of OPERABILITY. Valves that are required to actuate will continue to be tested. 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

SWS
3.7.8

3.7 PLANT SYSTEMS

3.7.8 Service Water System (SWS)

loops

3.7.4.1 LCO 3.7.8 Two SWS trains shall be OPERABLE. 1

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

ACTIONS

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

1 2 2 6 3 1 4

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CTS

SWS
3.7.8

SURVEILLANCE REQUIREMENTS

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

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

1. Changes are made (additions, deletions, and/or changes) to the ISTS that reflect the plant specific nomenclature.

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

3. Editorial changes made for clarity and to be consistent with the terminology in ITS 3.4.6.

4. Since Condition B applies to all Conditions in the ACTIONS Table, the term "of Condition A" is not necessary. This is consistent with the writer's guide for the Improved Standard Technical Specifications, TSTF-GG-05-01, Section 4.1.6.i.5.ii.

5. The Davis-Besse design includes a spare SWS pump that can be substituted for one of the normal SWS pumps. Therefore SR 3.7.8.3 has been modified to only require the "required" SWS pumps to be tested. This is consistent with the use of the word required in the ITS, as discussed the Improved Standard Technical Specifications, TSTF-GG-05-01, Section 4.1.3.

6. Typographical error corrected.

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 3.7.8 Service Water System (SWS)

BASES

BACKGROUND

The SWS provides a heat sink for the removal of process and operating heat from safety related components during a ~~transient or~~ Design Basis Accident (DBA) or transient. During normal operation and normal shutdown, the SWS also provides this function for various safety related and nonsafety related components. The safety related ~~position~~ portion is covered by this LCO. 5 5

INSERT 1 ~~An SWS consists of two separate, 100% capacity safety related cooling water trains. Each train consists of a 100% capacity pump, one component cooling water (CCW) heat exchanger, piping, valving, and instrumentation.~~ The pumps and valves are remote manually aligned, except in the unlikely event of a loss of coolant accident (LOCA). The s pumps are automatically started upon receipt of a safety features actuation signal, and all essential valves are aligned to their post accident positions and valves to the non-essential loads are isolated. The SWS ~~also~~ provides cooling ~~directly~~ to the Control Room Emergency Ventilation System water cooled condensing unit, the Emergency Core Cooling System (ECCS) pump room coolers, containment air coolers s, and Component Cooling Water System heat exchangers ~~turbine driven cooling water systems.~~ ~~The system provides cooling and is also a source of water to the ECCS pump and the emergency feedwater pumps, and can provide a source of makeup water to the cooling tower.~~ The SWS provides a backup source of water to the Auxiliary Feedwater System and the Motor Driven Feedwater Pump. 7

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

APPLICABLE SAFETY ANALYSES

The design basis of the SWS is for one SWS ~~train~~ loop, in conjunction with the CCW System and a 100% capacity containment cooling system, (containment spray, containment air coolers, or a combination) to remove core decay heat following a design basis LOCA, as discussed in the U FSAR, Section [6.2] (Ref. 2). This provides for a gradual reduction in the temperature of this fluid, as it is supplied to the Reactor Coolant System (RCS) by the ~~safety injection~~ ECCS pumps. 2

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

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1 **INSERT 1**

The SWS consists of three pumps and two independent essential load cooling loops. Each essential load cooling loop is supplied by one of three pumps. One pump normally supplies the essential loads for its associated loop, and the second pump supplies the essential loads for its associated loop and all the non-essential loads. Three pumps are provided so that any one of the pumps can be removed from service for maintenance or repair without reducing the capability or redundancy of the SWS. Two of the SWS pumps are powered from the associated essential bus. The third SWS pump can be powered from either essential bus through interlocked supply breakers and can manually be aligned to supply either SWS loop.

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All changes are 1 unless otherwise noted

BASES

APPLICABLE SAFETY ANALYSES (continued)

The SWS, in conjunction with the CCW System, also cools the unit from Decay Heat Removal (DHR) ~~System~~, as discussed in the U FSAR, Section [6.3], (Ref. 3) [entry conditions to MODE 5 during normal and post accident operation]. The time required for this evolution is a function of the number of CCW and DHR System ~~trains~~ loops that are operating. One SWS train is sufficient to remove decay heat during subsequent operations ~~in MODES 5 and 6~~ with T_{cold} < 200°F. This assumes ~~a maximum~~ an initial SWS temperature of ~~[85]~~ 90°F occurring simultaneously with maximum heat loads on the system. 2 5 8 2

The SWS is also required when needed to support CCW in the removal of heat from the emergency diesel generators (EDGs) or reactor auxiliaries.

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

LCO

Two SWS ~~trains~~ loops are required to be OPERABLE to provide the required redundancy to ensure that the system functions to remove post accident heat loads, assuming the worst case single active failure occurs coincident with the loss of offsite power.

An SWS ~~train~~ loop is considered OPERABLE when: 3

a. It has an OPERABLE pump; ~~and~~

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

INSERT 2

APPLICABILITY

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

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

ACTIONS

A.1

If one SWS ~~train~~ loop is inoperable, action must be taken to restore OPERABLE status within 72 hours. In this ~~C~~condition, the remaining OPERABLE SWS ~~train~~ loop is adequate to perform the heat removal function. However, the overall reliability is reduced because a single failure in the 4 5 4

1 **INSERT 2**

Furthermore, the spare SWS pump can be substituted for a normal SWS pump, provided the power supply for the pump is aligned to the same essential bus as the pump it is replacing.

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BASES

ACTIONS (continued)

loop

OPERABLE SWS train could result in loss of SWS function. Required Action A.1 is modified by two Notes. The first Note indicates that the applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources - Operating," should be entered if an inoperable SWS train results in an inoperable EDG. The second Note indicates that the applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops - MODE 4," should be entered if an inoperable SWS train results in an inoperable DHR train. 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 period. loop loop loop loop 4

B.1 and B.2

loop

If the SWS train cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. 4

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

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

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

BASES

SURVEILLANCE REQUIREMENTS (continued)

on an actual or simulated actuation (i.e., SFAS) signal

SR 3.7.8.2

The SR verifies proper automatic operation of the SWS valves. The SWS is a normally operating system that cannot be fully actuated as part of the normal testing. This SR is not required for valves that are locked, sealed, or otherwise secured in 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. 1 6 2 2

24

SR 3.7.8.3

(i.e., SFAS)

The 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 an [18] month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint. 1 2 2

24

REFERENCES

1. U FSAR, Section [9.2.1].
2. U FSAR, Section [6.2].
3. U FSAR, Section [6.3].

1 2

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.8 BASES, SERVICE WATER SYSTEM (SWS)

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

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

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

4. Changes made to reflect changes made to the Specification.

5. Typographical error corrected.

6. Changes made to be consistent with the Specification.

7. While the SWS does provide a source of water to the cooling tower, it is not required for OPERABILITY of the SWS. Therefore, the description has been deleted.

8. Change made to be consistent with the CCW System Bases.

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Specific No Significant Hazards Considerations (NSHCs)

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

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 9

ITS 3.7.9, ULTIMATE HEAT SINK (UHS)

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

ITS 3.7.9

A01

ITS

PLANT SYSTEMS

3/4.7.5 ULTIMATE HEAT SINK

LIMITING CONDITION FOR OPERATION

LCO 3.7.9 3.7.5.1 The ultimate heat sink shall be OPERABLE with:

SR 3.7.9.1 a. A minimum water level at or above elevation 562.0 feet International Great Lakes Datum, and

SR 3.7.9.2 b. An average water temperature of ≤ 90° F.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

ACTION A With the requirements of the above specification not satisfied, be in at least HOT STANDBY within ~~2.5~~ 6 hours and in COLD SHUTDOWN within ~~the following 30~~ 36 hours.

L01

SURVEILLANCE REQUIREMENTS

SR 3.7.9.1, SR 3.7.9.2 4.7.5.1 The ultimate heat sink shall be determined OPERABLE at least once per 24 hours by verifying the average water temperature and water level to be within their limits.

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

ADMINISTRATIVE CHANGES

A01 In the conversion of the Davis-Besse 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-1430, Rev. 3.1, "Standard Technical Specifications-Babcock and Wilcox 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

None

LESS RESTRICTIVE CHANGES

L01 *(Category 1 – Relaxation of LCO Requirements)* The CTS 3.7.5.1 Action states to be in HOT STANDBY in 2.5 hours and in COLD SHUTDOWN in the following 30 hours when the UHS is inoperable. ITS 3.7.9 ACTION A states to be in MODE 3 in 6 hours and in MODE 5 in 36 hours when the UHS is inoperable. This changes the CTS by providing an additional 3.5 hours to be in MODE 3 and in MODE 5.

The purpose of the CTS 3.7.5.1 Action time limit to reach MODE 3 and MODE 5 is to provide an appropriate amount of time for the unit to be cooled down to MODE 5 conditions, via MODE 3, in a controlled manner. This change is acceptable because the proposed time is still limited, and provides additional time to reach MODES 3 and 5 in an orderly manner and without challenging plant systems. Furthermore, the proposed time is consistent with the time normally provided to reach MODE 3 from MODE 1 and MODE 5 from MODE 4 in other CTS Specifications, such as CTS 3.0.3. This change is designated as less restrictive since more time is provided in the ITS to reach MODE 5 than is provided in the CTS.

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

CTS

UHS
3.7.9

3.7 PLANT SYSTEMS

3.7.9 Ultimate Heat Sink (UHS)

3.7.5.1 LCO 3.7.9 The UHS shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. [One or more cooling towers with one cooling tower fan inoperable.	A.1 Restore cooling tower fan(s) to OPERABLE status.	7 days]
-----REVIEWER'S NOTE----- The [ ]°F is the maximum allowed UHS temperature value and is based on temperature limitations of the equipment that is relied upon for accident mitigation and safe shutdown of the unit. ------------------------------ B. [Water temperature of the UHS > [90]°F and ≤ [ ]°F.	B.1 Verify water temperature of the UHS is ≤ [90]°F averaged over the previous 24 hour period.	Once per hour]
ACTION A C. [Required Action and associated Completion Time of Condition A or B not met. OR] UHS inoperable [for reasons other than Condition A or B].	A C.1 Be in MODE 3. AND A C.2 Be in MODE 5.	6 hours 36 hours

CTS

SURVEILLANCE REQUIREMENTS

CTS		SURVEILLANCE	FREQUENCY	
3.7.5.1.a, 4.7.5.1	SR 3.7.9.1	[Verify water level of UHS is ≥ [562] ft ~~[mean sea level]~~ International Great Lakes Datum.	24 hours [ ]	3
3.7.5.1.b, 4.7.5.1	SR 3.7.9.2	[Verify average water temperature of UHS is ≤ [90] °F.	24 hours [ ]	3
	~~SR 3.7.9.3~~	~~[Operate each cooling tower fan for > [15] minutes.~~	~~31 days]~~	1

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

1. The Davis-Besse cooling tower is not part of the Ultimate Heat Sink. Therefore, this ACTION and Surveillance Requirement are not included in the Davis-Besse 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.

2. 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 Davis-Besse 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 ≤ 90°F. Therefore the ACTION to verify UHS temperature averaged over 24 hours is not included in the Davis-Besse 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.

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

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

B 3.7 PLANT SYSTEMS

B 3.7.9 Ultimate Heat Sink (UHS)

BASES

BACKGROUND

The UHS provides a heat sink for process and operating heat from safety related components during a transient or accident as well as during normal operation. This is done utilizing the Service Water System (SWS).

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 U 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 a reactor shutdown, and dissipation of residual heat after an accident. 1 2 1

INSERT 1

~~A variety of complexes is used to meet the requirements for a UHS. A lake or an ocean may qualify as a single source. If the complex includes a water source contained by a structure, it is likely that a second source will be required.~~ 1

~~The basic performance requirements are that a 30 day supply of water be available, and that the design basis temperatures of safety related equipment not be exceeded. Basins of cooling towers generally include less than a 30 day supply of water, typically 7 days or less. A 30 day supply would be dependent on another source(s) and a 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.

1 **INSERT 1**

The ultimate heat sink is Lake Erie, and is the source of cooling water for the Service Water System. This is the single source for the ultimate heat sink, and the most severe natural phenomenon that can occur does not prevent a safe shutdown of the reactor. The Seismic Class I portion of the intake forebay provides adequate storage that is capable of providing sufficient cooling for at least 30 days. Procedures for ensuring a continued capability after this time are available. The ultimate heat sink provides adequate cooling for at least 30 days. An earthquake, which may result in loss of the source of lake water to the intake forebay, is the most severe event. This occurrence does not cause loss of the ultimate heat sink safety functions. The occurrence of extremely low lake level, which reduces the quantity of available water in the forebay, in conjunction with loss of the canal, was considered. The lowest level was assumed for the analysis, and this condition does not preclude the ultimate heat sink from performing its safety functions. The collapse of the intake pipe or complete closure of the canal was postulated for the analysis. It is demonstrated that additional sources of water are not required since the stored water in the forebay is adequate for safe shutdown. With regards to the amount of conservatism available for dissipating heat loads, the design of the ultimate heat sink is also consistent with the recommendations of Regulatory Guide 1.27, Revision 1 (Ref. 2).

BASES

APPLICABLE SAFETY ANALYSES

The UHS is the sink for heat removal from the reactor core following all accidents and anticipated operational occurrences in which the unit is cooled down and placed on [decay heat removal]. Its maximum post accident heat load occurs ~~approximately 20 minutes~~ at swapover to the containment emergency sump after a design basis loss of coolant accident (LOCA). ~~Near this time,~~ This is when the unit switches from injection to recirculation and the containment cooling systems are required to remove the core decay heat. 2 1

The operating limits are based on conservative heat transfer analyses for the worst case LOCA. Reference 1 provides the details of the assumptions used in the analysis. These assumptions include: worst expected meteorological conditions, conservative uncertainties when calculating decay heat, and the worst case failure (e.g., single failure of a manmade structure). The UHS is designed ~~in accordance~~ consistent with Regulatory Guide 1.27 (Ref. 2), which requires a 30 day supply of cooling water in the UHS. 1

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

LCO

The UHS is required to be OPERABLE and is considered OPERABLE if [it contains a sufficient volume of water at or below the maximum temperature] that would allow the SWS to operate for at least 30 days following the design basis LOCA without the loss of net positive suction head (NPSH), and without exceeding the maximum design temperature of the equipment served by the SWS. To meet this condition, the UHS temperature should not exceed [90]°F, and the level should not fall below [562] ft [~~mean sea level~~] International Great Lakes Datum during normal unit operation. 2 2 2

APPLICABILITY

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

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

ACTIONS

~~[A.1~~

~~If one or more cooling towers have one fan inoperable (i.e., up to one fan per cooling tower inoperable), action must be taken to restore the inoperable cooling tower fan(s) to OPERABLE status within 7 days.~~ 3

~~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 complete the Required Action.]~~

BASES

ACTIONS (continued)

[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 is 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.] 3

A

[C.1 and C.2 2 3

If ~~the Required Actions and Completion Time 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. 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 2

SURVEILLANCE REQUIREMENTS

[SR 3.7.9.1 2

This SR verifies that adequate long term (30 days) cooling can be maintained. The level specified also ensures NPSH is available for operating the SWS pumps. The 24 hour Frequency is based on operating experience related to the trending of the parameter variations during the applicable MODES. This SR verifies that the UHS water level is ≥ ~~[/]~~ 562 ft ~~[mean sea level]~~ International Great Lakes Datum.] 2

BASES

SURVEILLANCE REQUIREMENTS (continued)

[SR 3.7.9.2 (2)

This SR verifies that the SWS can cool the CCW System to at least its maximum design temperature within the maximum [accident or normal heat loads for 30 days following a Design Basis Accident. The 24 hour Frequency is based on operating experience related to the trending of the parameter variations during the applicable MODES. This SR verifies that the UHS average water temperature is ≤ [90]°F.] (2)

~~[SR 3.7.9.3~~ (3)

~~Operating each cooling tower fan for ≥ [15] minutes ensures that all fans are OPERABLE and that all associated controls are functioning properly. It also ensures that fan or motor failure, or excessive vibration, can be detected for corrective action. The 31 day Frequency is based on operating experience, 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.]~~

REFERENCES
1. U FSAR, Section [9.2.5]. (1) (2)
2. Regulatory Guide 1.27, Revision 1. (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. The brackets have been removed and the proper plant specific information/value has been provided.

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

Specific No Significant Hazards Considerations (NSHCs)

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

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 10

ITS 3.7.10, CONTROL ROOM EMERGENCY VENTILATION SYSTEM (CREVS)

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

PLANT SYSTEMS

3/4.7.6 CONTROL ROOM EMERGENCY VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

LA01

LCO 3.7.10 3.7.6.1 Two independent control room emergency ventilation systems shall be OPERABLE.

Add proposed LCO Note 1 — L01

APPLICABILITY: MODES 1, 2, 3 and 4.

Add proposed LCO Note 2 — M01

Add proposed second Applicability

ACTION:

for reasons other than Condition B — L01

ACTION A — a. With one control room emergency ventilation system inoperable, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY within the

ACTION C — next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Add proposed ACTION B — L01

b. With one channel of Station Vent Normal Range Radiation Monitoring instrumentation inoperable, restore the inoperable channel to OPERABLE status, or isolate the control room normal ventilation system and place at least one control room emergency ventilation system train in operation within 7 days.

c. With both channels of Station Vent Normal Range Radiation Monitoring instrumentation inoperable, within 1 hour, isolate the control room normal ventilation system and place at least one control room emergency ventilation system train in operation.

See ITS 3.3.16

M01

Add proposed ACTION D

Add proposed ACTION E — A02

SURVEILLANCE REQUIREMENTS

4.7.6.1 Each control room emergency ventilation system shall be demonstrated OPERABLE:

a. At least once per 12 hours by verifying that the control room air temperature is less than or equal to 110°F when the control room emergency ventilation system is operating.

See ITS 3.7.11

L02

LA02

SR 3.7.10.1 b. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 15 minutes.

SR 3.7.10.2 c. At least once each REFUELING INTERVAL and in accordance with the Ventilation Filter Testing Program (VFTP).

ITS

A01

ITS 3.7.10

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

1. [Deleted]

2. [Deleted]

3. [Deleted]

d. [Deleted]

e. At least once each REFUELING INTERVAL by:

actuation LA03

1. [Deleted]

actual or L03

SR 3.7.10.3 2. Verifying that the control room normal ventilation system is isolated by a SFAS test signal and a Station Vent Normal ~~Range~~ Radiation Monitoring test signal; and

actual or L03

actuation LA03

ITS

A01

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.7.10.5

3. Verifying that the makeup flow of the system is 300 cfm ± 10% when supplying the control room with outside air.

f. [Deleted]

g. [Deleted]

Add proposed SR 3.7.10.4

L01

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

ADMINISTRATIVE CHANGES

A01 In the conversion of the Davis-Besse 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-1430, Rev. 3.1, "Standard Technical Specifications-Babcock and Wilcox 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 3.7.6.1 does not provide an Action for two CREVS trains inoperable. Thus, CTS LCO 3.0.3 would be required to be entered. ITS 3.7.10 ACTION E requires immediate entry into ITS LCO 3.0.3 when two CREVS trains are inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B. Condition B covers the inoperability of one or more CREVS trains due to an inoperable control room envelope (CRE) boundary in MODE 1, 2, 3, or 4. This changes the CTS by providing a specific ACTION for two inoperable CREVS trains for reasons other than due to an inoperable CRE boundary. The change to allow one or more CREVS trains to be inoperable due to a CRE boundary is discussed in DOC L01.

The purpose of ITS 3.7.10 ACTION E is to require immediate entry into ITS LCO 3.0.3 when two CREVS trains are inoperable for reasons other than due to an inoperable CRE boundary. If two CREVS trains were inoperable in MODE 1, 2, 3, or 4, then CTS LCO 3.0.3 would be entered because there is no other Action in CTS 3.7.6.1 that fits this condition. This change is acceptable because this same action is required in the CTS (except for the change discussed in DOC L01). This change is designated as administrative because it does not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

M01 The CTS does not have any requirements for the Control Room Emergency Ventilation System during movement of irradiated fuel assemblies. ITS 3.7.10 Applicability includes "During movement of irradiated fuel assemblies." ITS 3.7.10 LCO Note 2 clarifies that only the CRE boundary is required to be OPERABLE during this new Applicability. ITS 3.7.10 ACTION D provides compensatory measures when the CRE boundary is inoperable during movement of irradiated fuel assemblies. This changes the CTS by adding additional Applicability criteria and an associated ACTION.

The purpose of ITS 3.7.10 is to provide assurance that the CREVS is OPERABLE when required to perform its function. Only the CRE boundary portion of the CREVS is required during movement of irradiated fuel assemblies. The fuel handling accident analyses assumes only the control room is isolated; the CREVS trains are not assumed. This change is acceptable because it provides this Applicability with an associated ACTION to provide additional assurance that the CRE boundary is available to perform its function when required. This change is designated as more restrictive because it adds a new Applicability for the CRE boundary with an associated ACTION.

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

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.7.6.1 states that two "independent" control room emergency ventilation systems shall be OPERABLE. ITS LCO 3.7.10 states that two CREVS trains shall be OPERABLE. This changes the CTS by moving the details that the CREVS trains are "independent" from the CTS to the Bases.

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

LA02 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.7.6.1.b states that each CREVS train shall be demonstrated OPERABLE by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the train operates for a least 15 minutes. ITS SR 3.7.10.1 states to operate each CREVS train for $\geq$ 15 minutes. This changes the CTS by moving the details of how the Surveillance is conducted to the Bases.

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

LA03 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 4.7.6.1.e.2 requires verification of the automatic isolation of the Control Room Normal Ventilation System on an "SFAS" test signal and a

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

"Station Vent Normal Range Radiation monitoring" test signal. ITS SR 3.7.10.3 does not state the specific type of signal, but only specifies an actual or simulated "actuation" signal. This changes CTS by moving the type of actuation signal (i.e., SFAS and Station Vent Normal Range Radiation Monitoring) to the Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement to verify that appropriate equipment isolates upon receipt of 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 of the ITS. 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 Specification.

LESS RESTRICTIVE CHANGES

L01 *(Category 4 – Relaxation of Required Action)* CTS 3.7.6.1 requires two CREVS trains to be OPERABLE. Included as part of the OPERABILITY of the CREVS trains is the control room envelope (CRE) boundary. CTS 3.7.6.1 Action a provides the actions for when one CREVS train is inoperable, however no actions are provided when both trains are inoperable, such as when the CRE boundary is inoperable. In this situation, CTS 3.0.3 must be entered, which requires a unit shutdown. In addition, CTS 3.7.6.1 does not address the CRE boundary being opened intermittently (such as for routine entry and exit) under administrative controls. ITS LCO 3.7.10 also requires the two CREVS trains to be OPERABLE, however Note 1 to the LCO is included that allows the control room envelope (CRE) boundary to be opened intermittently under administrative controls. ITS 3.7.10 ACTION B provides actions for when the CRE boundary is inoperable in MODE 1, 2, 3, or 4. The action allows up to 90 days to restore the CRE boundary before requiring a unit shutdown. Also, ITS SR 3.7.10.4 is added to verify the OPERABILITY of the CRE boundary by testing for unfiltered air inleakage past the CRE boundary and into the CRE, in accordance with the Control Room Envelope Habitability Program. The program details are discussed in the Discussion of Changes for ITS 5.5. This changes the CTS by allowing the CRE boundary to be opened intermittently under administrative controls and not consider both CREVS trains to be inoperable and provides time to restore an inoperable CRE boundary prior to requiring a unit shutdown.

The purpose of CTS 3.7.6.1 is to ensure the CREVS remains OPERABLE to support the safety analyses. Davis-Besse proposes to establish new ACTION requirements in ITS 3.7.10 for an inoperable CRE boundary. Currently, if one CREVS train is determined to be inoperable due to an inoperable CRE boundary, CTS 3.7.6.1 Action a would apply and require restoring the train (and the CRE boundary) to OPERABLE status in 7 days. If two trains are determined to be inoperable due to an inoperable CRE boundary, no CTS 3.7.6.1 Actions are

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

provided, thus immediate entry into the shutdown actions of CTS 3.0.3 is required. These existing Actions are more restrictive than would be appropriate in situations for which implementation of compensatory measures or mitigating actions would temporarily afford adequate CRE occupant protection from postulated airborne hazards. To account for such situations, Davis-Besse proposes to revise the action requirements to add ITS 3.7.10 ACTION B, whose entry condition is "One or more CREVS trains inoperable due to inoperable CRE boundary in MODE 1, 2, 3, or 4." ITS 3.7.10 Required Action B.3 would allow 90 days to restore the inoperable CRE boundary (and consequently, the affected CREVS trains) to OPERABLE status, provided that mitigating actions are immediately implemented (ITS 3.7.10 Required Action B.1) and within 24 hours are verified to ensure, that in the event of a DBA, CRE occupant radiological exposures will not exceed the calculated dose of the licensing basis analyses of DBA consequences, and that CRE occupants are protected from hazardous chemicals and smoke (ITS 3.7.10 Required Action B.2). The 24-hour Completion Time of ITS 3.7.10 Required Action B.2 is reasonable based on the low probability of a DBA occurring during this time period, and the use of mitigating actions. The 90-day Completion Time of ITS 3.7.10 Required Action B.3 is reasonable based on the determination that the mitigating actions will ensure protection of CRE occupants within analyzed limits while limiting the probability that CRE occupants will have to implement protective measures that may adversely affect their ability to control the reactor and maintain it in a safe shutdown condition in the event of a DBA. The 90-day Completion Time of ITS 3.7.10 Required Action B.3 is also a reasonable time to diagnose, plan and possibly repair, and test most anticipated problems with the CRE boundary. Therefore, the addition of ITS 3.7.10 ACTION B is acceptable.

To distinguish ITS 3.7.10 Condition B from the existing condition for one CREVS train inoperable, CTS 3.7.6.1 Action a is revised as shown in ITS 3.7.10 Condition A to state One CREVS train inoperable "for reasons other than Condition B." To distinguish ITS 3.7.10 Condition B from ITS 3.7.10 Condition E, which was added as described in DOC A02, ITS 3.7.10 Condition E states Two CREVS trains inoperable in MODE 1, 2, 3, or 4 "for reasons other than Condition B." The changes to CTS 3.7.6.1 Action a and CTS 3.0.3 (which is the action to enter when both CREVS trains are inoperable) are less restrictive because these Actions will no longer apply in the event one or two CREVS trains are inoperable due to an inoperable CRE boundary. This is acceptable because ITS 3.7.10 ACTION B establishes adequate remedial measures in this condition.

Davis-Besse also proposes to modify CTS 3.7.6.1 by adding a Note (ITS LCO 3.7.10 Note 1) allowing the CRE boundary to be opened intermittently under administrative controls. As stated in the ITS 3.7.10 LCO Bases, this Note "only applies to openings in the CRE boundary that can be rapidly restored to the design condition, such as doors, hatches, floor plugs, and access panels. 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 should be proceduralized and consist of stationing a dedicated individual at the opening who is in continuous communication with operators in the CRE. This individual will have a method to rapidly close the opening and to restore the CRE boundary to a condition equivalent to the design condition when a need for CRE isolation is indicated." The allowance of this Note is acceptable

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

because the administrative controls will ensure that the opening will be quickly sealed to maintain the validity of the licensing basis analyses of DBA consequences.

Furthermore, to support the above changes, a new Surveillance Requirement has been added. ITS SR 3.7.10.4 requires performance of required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program. ITS Section 5.5 includes the details for the program. This addition is acceptable because the proposed SR will ensure that the unfiltered air inleakage into the CRE is no greater than the flow rate assumed in the licensing basis analyses of DBA consequences.

These changes are consistent with NUREG-1430, Rev. 3, as modified by TSTF-448, Rev. 3, which has been approved by the NRC using the Consolidated Line Item Improvement Process and documented in the Federal Register notice dated January 17, 2007 (pages 2022 through 2033). 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 7 – Relaxation Of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.7.6.1.b states that each CREVS train shall be demonstrated OPERABLE at least once every 31 days "on a STAGGERED TEST BASIS" by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the train operates for a least 15 minutes. ITS SR 3.7.10.1 requires a similar test every 31 days, but does not include the "STAGGERED TEST BASIS" requirement. This changes the CTS by deleting the requirement to test on a STAGGERED TEST BASIS.

The purpose of CTS 4.7.6.1.b is to demonstrate the OPERABILITY of the CREVS trains. This change is acceptable because the new Surveillance Frequency provides an acceptable level of equipment reliability. This change deletes the requirement to perform CTS 4.7.6.1.b on a STAGGERED TEST BASIS. The intent of a requirement for staggered testing is to increase reliability of the component/system being tested. A number of studies have been performed that demonstrate that staggered testing has negligible impact on component reliability. These analytical and subjective analyses have determined that staggered testing 1) is operationally difficult, 2) has negligible impact on component reliability, 3) has no impact on failure frequency, 4) introduces additional stress on components potentially causing increased component failures rates and component wearout, 5) results in reduced redundancy during testing, and 6) increases likelihood of human error by increasing testing intervals. Therefore, the CREVS staggered testing requirements have been deleted. This change is designated as less restrictive because the intervals between performances of the Surveillances for the two CREVS trains can be larger or smaller under the ITS than under the CTS.

L03 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.7.6.1.e.2 requires verification of the automatic isolation of the Control Room Normal Ventilation System on an "SFAS" test signal and a "Station Vent Normal Range Radiation monitoring" test signal. ITS SR 3.7.12.3 specifies that the signal may be from either an "actual" or simulated (i.e., test) signal. This

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

changes the CTS by explicitly allowing the use of either an actual or simulated signal for the test.

The purpose of CTS 4.7.6.1.e.2 is to ensure the Control Room Normal Ventilation System isolates upon receipt of an actuation signal. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. Equipment cannot discriminate between an "actual," "simulated," or "test" signal and, therefore, the results of the testing are unaffected by the type of signal used to initiate the test. This change allows taking credit for unplanned actuation if sufficient information is collected to satisfy the Surveillance test requirements. The change also allows a simulated signal to be used, if necessary. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

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

CTS

All changes are TSTF-448 unless otherwise noted

CREVS
3.7.10

3.7 PLANT SYSTEMS

3.7.10 Control Room Emergency Ventilation System (CREVS)

3.7.6.1 LCO 3.7.10 Two CREVS trains shall be OPERABLE.

envelope (CRE) S

-----NOTE-----

DOC L01 1. The control room boundary may be opened intermittently under administrative control.

DOC M01

2. Only the CRE boundary is required to be OPERABLE during movement of irradiated fuel assemblies.

1

TSTF-448 and

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

1 2

ACTIONS

CTS	CONDITION	REQUIRED ACTION	COMPLETION TIME
Action a	A. One CREVS train inoperable for reasons other than Condition B.	A.1 Restore CREVS train to OPERABLE status.	7 days
DOC L01	B. ~~Two~~ One or more CREVS trains inoperable due to inoperable ~~control room~~ CRE boundary in MODE 1, 2, 3, or 4.	B.~~1~~ 3 Restore ~~control room~~ CRE boundary to OPERABLE status. INSERT 1	~~24 hours~~ 90 days
Action a	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

TSTF -448

INSERT 1

DOC L01	B.1	Initiate action to implement mitigating actions.	Immediately
	AND		
	B.2	Verify mitigating actions ensure CRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits.	24 hours
	AND		

CTS

CREVS
3.7.10

ACTIONS (continued)

	CONDITION	REQUIRED ACTION		COMPLETION TIME	
	D. [Required Action and associated Completion Time of Condition A not met during movement of [recently] irradiated fuel assemblies.	D.1	-------------NOTE-------------- Place in emergency mode if automatic transfer to emergency mode inoperable. ------------------------------------- Place OPERABLE CREVS train in emergency mode.	Immediately	TSTF-448 changes not shown 1
		OR			
		D.2	Suspend movement of [recently] irradiated fuel assemblies.	Immediately]	
DOC M01	~~E~~ D. ~~[~~ ~~Two CREVS trains~~ CRE boundary inoperable during movement of ~~[recently]~~ irradiated fuel assemblies.	~~E~~ D.1	Suspend movement of ~~[recently]~~ irradiated fuel assemblies.	Immediately ~~]~~	TSTF-448 changes not shown 1 2
DOC A02	~~F~~ E. Two CREVS trains inoperable ~~during~~ in MODE 1, 2, 3, or 4 for reasons other than Condition B.	~~F~~ E.1	Enter LCO 3.0.3.	Immediately	TSTF -448 1

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
4.7.6.1.b	SR 3.7.10.1	Operate each CREVS train for ~~[≥ 10 continuous hours with the heaters operating or (for systems without heaters)~~ ≥ 15 minutes ~~]~~. (TSTF -448)	31 days	2 2

CTS

CREVS
3.7.10

SURVEILLANCE REQUIREMENTS (continued)

CTS	SURVEILLANCE		FREQUENCY	
4.7.6.1.c	SR 3.7.10.2	Perform required CREVS filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)].	In accordance with the [VFTP]	2
4.7.6.1.e.2	SR 3.7.10.3	Verify [each CREVS train actuates] [or the control room isolates] on an actual or simulated actuation signal. Control Room Normal Ventilation System isolates	[18] months 24	2
DOC L01	SR 3.7.10.4 INSERT 2	~~Verify one CREVS train can maintain a positive pressure of ≥ [0.125] inches water gauge relative to the adjacent [area] during the [pressurization] mode of operation at a flow rate of ≤ [3300] cfm.~~	~~[18] months on a STAGGERED TEST BASIS~~	TSTF-448
4.7.6.1.e.3	SR 3.7.10.5	[Verify the system makeup flow rate is ≥ [270] and ≤ [330] cfm when supplying the ~~the~~ control room cfm with outside air.	[18] months 24]	2 3

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TSTF-448 **INSERT 2**

Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program.	In accordance with the Control Room Envelope Habitability Program

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.10, CONTROL ROOM EMERGENCY VENTILATION SYSTEM (CREVS)

1. The Davis-Besse fuel handling accident analyses (both inside and outside containment) and waste gas decay tank rupture analysis do not assume the CREVS operates to provide airborne radiological protection for the control room envelope (CRE) occupants. The above analyses only assume the CRE is isolated. However, further analysis of the waste gas decay tank rupture event demonstrates acceptable accident results without a CRE isolation. Therefore, the MODES 5 and 6 Applicabilities have not been included in ITS 3.7.10 and LCO Note 2 has been added to state that only the CRE boundary is required to be OPERABLE during movement of irradiated fuel assemblies. Due to this deletion, ISTS 3.7.10 ACTION D has been deleted and ISTS 3.7.10 Condition E has been modified to clearly identify the Condition (i.e., CRE boundary inoperable). Subsequent ACTIONS have been renumbered due to the deletion.

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

3. Typographical error corrected.

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

All changes are TSTF-448 unless otherwise noted

B 3.7 PLANT SYSTEMS

B 3.7.10 Control Room Emergency Ventilation System (CREVS)

BASES

BACKGROUND

The CREVS provides a protected environment from which ~~operators~~ occupants can control the unit following an uncontrolled release of radioactivity[,] ~~chemicals, or toxic gas~~ hazardous chemicals, or smoke.

INSERT 1

The CREVS consists of two independent, redundant ~~fan filter assemblies~~ CREVS. Each ~~filter~~ train consists of a roughing filter, a water condensing unit, a high efficiency particulate air (HEPA) filter, ~~and~~ a charcoal ~~filter~~ adsorber 1

INSERT 2

The CREVS is an emergency system. Upon receipt of the activating signal(s), the ~~normal~~ ~~control room~~ Control Room ventilation system is automatically ~~shut down~~ isolated, which isolates the CRE boundary, and the CREVS can be manually started. The roughing filters ~~and water condensing units~~ remove any large particles in the air ~~and any entrained water droplets present,~~ to prevent excessive loading of the HEPA and charcoal filters. 1

A single CREVS train operating at a flow rate of ≤ [3300] cfm (approximately 300 cfm of outside air and 3000 cfm of recirculation air) will pressurize the ~~control room with a 1.5 ft² LEAKAGE area~~ CRE to about 1/8 inch water gauge relative to external areas adjacent to the CRE boundary. The CREVS operation is discussed in the U FSAR, Section ~~[9.4]~~ 9.4.1 (Ref. 1). 1 1 2

The CREVS is designed to maintain a habitable environment in the ~~control room~~ CRE 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.] [5 rem total effective dose equivalent (TEDE)] 2

APPLICABLE SAFETY ANALYSES

The CREVS components are arranged in redundant, safety related ventilation trains. The location of components and the ducting within the ~~control room envelope~~ CRE ensures an adequate supply of filtered air to all areas requiring access. The CREVS provides airborne radiological protection for the ~~control room operators~~ CRE occupants as demonstrated by the ~~control room accident~~ CRE occupant dose analyses for the most limiting design basis loss of coolant accident fission product release presented in the U FSAR, ~~Chapter [15]~~ Section 15.4.6 (Ref. 2). 7 1 2

INSERT 3 1

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

~~[For this unit, there are no sources of toxic gases or chemicals that could be released to affect control room habitability.]~~

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

TSTF-448

INSERT 1

trains that recirculate and filter the air in the control room envelope (CRE) and a CRE boundary that limits the inleakage of unfiltered air

TSTF-448

INSERT 2

for removal of gaseous activity (principally iodines), and a fan. Ductwork, valves or dampers, doors, barriers, and instrumentation also form part of the system.

The CRE is the area within the confines of the CRE boundary that contains the spaces that control room occupants inhabit to control the unit during normal and accident conditions. This area encompasses the control room, and ~~may~~ encompass es also other non-critical areas to which frequent personnel access or continuous occupancy is not necessary in the event of an accident. The CRE is protected during normal operation, natural events, and accident conditions. The CRE boundary is the combination of walls, floor, roof, ducting, doors, penetrations and equipment that physically form the CRE. The OPERABILITY of the CRE boundary must be maintained to ensure that the inleakage of unfiltered air into the CRE will not exceed the inleakage assumed in the licensing basis analysis of design basis accident (DBA) consequences to CRE occupants. The CRE and its boundary are defined in the Control Room Envelope Habitability Program. 1

INSERT 3

The CREVS provides protection from smoke and hazardous chemicals to the CRE occupants. The analysis of hazardous chemical releases demonstrates that the toxicity limits are not exceeded in the CRE following a hazardous chemical release (Ref. 3). The evaluation of a smoke challenge demonstrates that it will not result in the inability of the CRE occupants to control the reactor either from the control room or from the remote shutdown panels (Ref. 4). TSTF-448 1

s 3 and

Furthermore, the fuel handling accident, both inside and outside containment, assumes the control room is isolated (Ref. 5). 1

All changes are TSTF-448 unless otherwise noted

CREVS
B 3.7.10

BASES

, such as from a loss of both ventilation trains or from an inoperable CRE boundary,

LCO

Two independent and redundant CREVS trains are required to be active OPERABLE to ensure that at least one is available if a single failure disables the other train. Total system failure could result in exceeding a dose of ~~5 rem~~ whole body or its equivalent to any part of the body [5 rem TEDE] to the ~~control room operators~~ CRE occupants in the event of a large radioactive release. 2

Each ~~The~~ CREVS train is considered OPERABLE when the individual components necessary to ~~control operator~~ limit CRE occupant exposure are OPERABLE ~~in both trains~~. A CREVS train is considered OPERABLE when the associated:

a. Fan is OPERABLE; 3

b. HEPA filter and charcoal absorber 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. 1

~~In addition, the control room boundary, including the integrity of the walls, floors, ceilings, ductwork, and access doors, must be maintained within the assumptions of the design analysis.~~ 1

INSERT 4 4

The LCO is modified by a Note (Note 1) allowing the ~~control room~~ CRE boundary to be opened intermittently under administrative controls. INSERT 5 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 should be proceduralized and consist of stationing a dedicated individual at the opening who is in continuous communication with the ~~control room~~ operators in the CRE. This individual will have a method to rapidly close the opening and to restore the CRE boundary to a condition equivalent to the design condition when a need for ~~control room~~ CRE isolation is indicated. INSERT 5A 4

APPLICABILITY

In MODES 1, 2, 3, ~~and~~ and 4, [5, and 6,] and during movement of [recently] irradiated fuel assemblies the CREVS must be OPERABLE to ensure that the CRE ~~control room~~ will remain habitable during and following a DBA. 4

~~In MODES [5, and 6,] the CREVS is required to cope with the release from a rupture of an outside waste gas tank.~~

~~During movement of [recently] irradiated fuel assemblies, the CREVS CRE boundary must be OPERABLE to cope with a release due to a fuel handling accident involving handling recently irradiated fuel. Due to radioactive decay, the CREVS is only required to mitigate fuel handling accidents involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [X] days).~~ 2 4

INSERT 4

In order for the CREVS trains to be considered OPERABLE, the CRE boundary must be maintained such that the CRE occupant dose from a large radioactive release does not exceed the calculated dose in the licensing basis consequence analyses for DBAs, and that CRE occupants are protected from hazardous chemicals and smoke. Maintaining the CRE boundary OPERABLE includes the capability to isolate the Control Room Normal Ventilation System. TSTF-448 1

TSTF-448

INSERT 5

This Note only applies to openings in the CRE boundary that can be rapidly restored to the design condition, such as doors, hatches, floor plugs, and access panels.

4

INSERT 5A

The LCO is modified by a second Note (Note 2) indicating that only the CRE boundary is required during movement of irradiated fuel assemblies. This is because the fuel handling accident analyses (Ref. 5) does not assume CREVS operation, only that the control room is isolated.

All changes are TSTF-448 unless otherwise noted

CREVS
B 3.7.10

BASES

ACTIONS

A.1

for reasons other than an inoperable CRE boundary,

With one CREVS train inoperable, action must be taken to restore the inoperable CREVS train to OPERABLE status within 7 days. In this ~~C~~condition, the remaining OPERABLE CREVS train is adequate to perform the ~~control room~~ CRE occupant ~~radiation~~ protection function. However, the overall reliability is reduced because a failure in the OPERABLE CREVS train could result in loss of CREVS function. The 7 day Completion Time is based on the low probability of a DBA occurring during this time period, and ability of the remaining train to provide the required capability. 9 5

B.1 , B.2, and B.3

~~-----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.~~
~~-----~~

INSERT 6

~~If the control room boundary is inoperable in MODE 1, 2, 3, or 4, the CREVS trains cannot perform their intended functions. Actions must be taken to restore an OPERABLE control room boundary within 24 hours. During the period that the control room boundary is inoperable, appropriate compensatory measures (consistent with the intent of GDC 19) should be utilized to protect control room operators from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature and relative humidity, and physical security. Preplanned measures should be available to address these concerns for intentional and unintentional entry into the condition. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of compensatory measures. The 24 hour Completion Time is a typically reasonable time to diagnose, plan and possibly repair, and test most problems with the control room boundary.~~

C.1 and C.2

the CRE

if any Required Action and associated Completion Time of Condition A or B cannot be met

In MODE 1, 2, 3, or 4, ~~if the inoperable CREVS train or control room boundary cannot be restored to OPERABLE status within the required Completion Time~~, the unit must be placed in a MODE ~~in which the LCO does not apply~~ 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. 6

in which the LCO does not apply 4

TSTF-448

INSERT 6

If the unfiltered inleakage of potentially contaminated air past the CRE boundary and into the CRE can result in CRE occupant radiological dose greater than the calculated dose of the licensing basis analyses of DBA consequences (allowed to be up to [5 rem whole body or its equivalent to any part of the body] [5 rem TEDE]), or inadequate protection of CRE occupants from hazardous chemicals or smoke, the CRE boundary is inoperable. Actions must be taken to restore an OPERABLE CRE boundary within 90 days. 4

immediately

During the period that the CRE boundary is considered inoperable, action must be initiated to implement mitigating actions to lessen the effect on CRE occupants from the potential hazards of a radiological or chemical event or a challenge from smoke. Actions must be taken within 24 hours to verify that in the event of a DBA, the mitigating actions will ensure that CRE occupant radiological exposures will not exceed the calculated dose of the licensing basis analyses of DBA consequences, and that CRE occupants are protected from hazardous chemicals and smoke. These mitigating actions (i.e., actions that are taken to offset the consequences of the inoperable CRE boundary) should be preplanned for implementation upon entry into the condition, regardless of whether entry is intentional or unintentional. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of mitigating actions. The 90 day Completion Time is reasonable based on the determination that the mitigating actions will ensure protection of CRE occupants within analyzed limits while limiting the probability that CRE occupants will have to implement protective measures that may adversely affect their ability to control the reactor and maintain it in a safe shutdown condition in the event of a DBA. In addition, the 90 day Completion Time is a reasonable time to diagnose, plan and possibly repair, and test most problems with the CRE boundary. 6 7 7

8 Insert from Insert Page B 3.7.10-5

of Required Action B.2

of Required Action B.3

CREVS
B 3.7.10

BASES

ACTIONS (continued)

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

~~In MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies, if the inoperable CREVS train cannot be restored to OPERABLE status within the required Completion Time, the OPERABLE CREVS train must immediately be placed 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 will be readily detected. Required Action D.1 is modified by a Note indicating to place the system in the emergency mode if automatic transfer to emergency mode is inoperable.~~

~~An alternative to Required Action D.1 is to immediately suspend activities that could release radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes the accident risk. This does not preclude the movement of fuel to a safe position.]~~

TSTF-448 changes not shown

4

D

~~[E~~.1

2 4 4 2

~~In MODE 5 or 6, or~~ during movement of ~~[recently]~~ irradiated fuel assemblies, ~~when two CREVS trains are inoperable~~, action must be taken immediately to suspend activities that could release radioactivity that might require isolation of the ~~control room~~. This places the unit in a condition that minimizes the accident risk. This does not preclude the movement of fuel to a safe position. ~~]~~

4 if the CRE boundary is inoperable

result in a

of

TSTF-448

CRE

2

TSTF-448 changes not shown

E ~~F~~.1

4

If both CREVS trains are inoperable in MODE 1, 2, 3, or 4 for reasons other than an inoperable ~~control room~~ boundary (i.e., Condition B), the CREVS may not be capable of performing the intended function and the unit is in a condition outside the accident analysis. Therefore, LCO 3.0.3 must be entered immediately.

CRE

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All changes are TSTF-448 unless otherwise noted

CREVS
B 3.7.10

BASES

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 severe, testing each train once every month adequately checks this system. Monthly heater operations dry out any moisture that has accumulated in the charcoal because 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 the equipment and the two train redundancy available.

Initiating each train from the control room, with flow through the HEPA filters and charcoal adsorbers, and operating

each train

s

4

SR 3.7.10.2

This SR verifies that the required CREVS testing is performed in accordance with the [Ventilation Filter Testing Program (VFTP)]. The [VFTP] includes testing HEPA filter performance, charcoal absorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal. Specific test frequencies and additional information are discussed in detail in the [VFTP].

2 2 5 5 2

SR 3.7.10.3

This SR verifies that [each CREVS train starts] [or] the control room isolates[and operates] on an actual or simulated actuation signal. The Frequency of [18] months is consistent with that specified in Reference 3.

Control Room Normal Ventilation System

CRE

(i.e., SFAS and Station Vent Normal Range Radiation Monitoring)

4 2 1 4

24

The Frequency of [18] months is based on industry operating experience and is consistent with the typical refueling cycle.

2 1

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 that the CREVS is functioning properly. During the emergency mode of operation, the CREVS is designed to pressurize the control room ≥ [0.125] inches water gauge positive pressure, with respect to adjacent areas, to prevent unfiltered inleakage. The CREVS is designed to maintain this positive pressure with one train at a flow rate of ≤ [3300] cfm. This value includes [300] cfm of outside air. The Frequency of [18] months on a STAGGERED TEST BASIS is consistent with industry practice and other filtration SRs.~~

INSERT 7

INSERT 8

TSTF-448

INSERT 7

This SR verifies the OPERABILITY of the CRE boundary by testing for unfiltered air inleakage past the CRE boundary and into the CRE. The details of the testing are specified in the Control Room Envelope Habitability Program.

The CRE is considered habitable when the radiological dose to CRE occupants calculated in the licensing basis analyses of DBA consequences is no more than [5 rem whole body or its equivalent to any part of the body] [5 rem TEDE] and the CRE occupants are protected from hazardous chemicals and smoke. This SR verifies that the unfiltered air inleakage into the CRE is no greater than the flow rate assumed in the licensing basis analyses of DBA consequences. When unfiltered air inleakage is greater than the assumed flow rate, Condition B must be entered. Required Action B.3 allows time to restore the CRE boundary to OPERABLE status provided mitigating actions can ensure that the CRE remains within the licensing basis habitability limits for the occupants following an accident. Compensatory measures are discussed in Regulatory Guide 1.196, Section C.2.7.3, (Ref. 5) which endorses, with exceptions, NEI 99-03, Section 8.4 and Appendix F (Ref. 6). These compensatory measures may also be used as mitigating actions as required by Required Action B.2. Temporary analytical methods may also be used as compensatory measures to restore OPERABILITY (Ref. 7). Options for restoring the CRE boundary to OPERABLE status include changing the licensing basis DBA consequence analysis, repairing the CRE boundary, or a combination of these actions. Depending upon the nature of the problem and the corrective action, a full scope inleakage test may not be necessary to establish that the CRE boundary has been restored to OPERABLE status. 2 8

Move to Insert Page B 3.7.10-3

1 6 7 8 ,

TSTF-448

INSERT 8

SR 3.7.10.5

This SR verifies the CREVS can supply the CRE with outside air to meet the design requirement. The Frequency of [18] months is consistent with industry practice and other filtration SRs. 2

24

All changes are TSTF-448 unless otherwise noted

CREVS
B 3.7.10

BASES

REFERENCES

1. FSAR, Section [9.4] 9.4.1 (1) (2)

U

2. FSAR, Chapter [15] Section 15.4.6 (1) (2)

3. FSAR, Section [6.4] U

4. FSAR, Section [9.5] U

6 3. Regulatory Guide [1.52, Rev. [2]] 1.196 (1) (2)

5. UFSAR, Section 15.4.7. (1)

(1) 7 6. NEI 99-03, "Control Room Habitability Assessment," June 2001.

8 7. Letter from Eric J. Leeds (NRC) to James W. Davis (NEI) dated January 30, 2004, "NEI Draft White Paper, Use of Generic Letter 91-18 Process and Alternative Source Terms in the Context of Control Room Habitability" (ADAMS Accession No. ML040300694).

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.10 BASES, CONTROL ROOM EMERGENCY VENTILATION SYSTEM (CREVS)

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

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

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

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

5. Typographical error corrected.

6. Changes made to be consistent with the Specification. The ACTIONS B.1, B.2 and B.3 discussion is an immediate action and the ACTIONS C.1 and C.2 discussion is not correct since not meeting restoration actions are not the only actions that could result in Condition C being entered (i.e., Required Action B.1 or B.2 could not be met).

7. Editorial change for clarity.

8. This information provided in the SR 3.7.10.4 Bases is discussing how to meet the requirements of ACTION B; not how to meet the SR requirements. Therefore, this information has been moved, as appropriate, to the ACTIONS B.1, B.2, and B.3 section of the Bases, where it properly belongs.

9. Changes are made to reflect the Specification.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.10, CONTROL ROOM EMERGENCY VENTILATION SYSTEM (CREVS)

There are no specific NSHC discussions for this Specification.

ATTACHMENT 11

ITS 3.7.11, CONTROL ROOM EMERGENCY AIR TEMPERATURE CONTROL SYSTEM (CREATCS)

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

ITS

A01

ITS 3.7.11

PLANT SYSTEMS

3/4.7.6 CONTROL ROOM EMERGENCY VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

LA01

LCO 3.7.11 3.7.6.1 Two ~~independent~~ control room emergency ~~ventilation~~ systems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

Air Temperature Control — A02

ACTION:

ACTION A — a. With one control room emergency ~~ventilation~~ system inoperable, restore the inoperable system to OPERABLE status within ~~7~~ days 30 or be in at least HOT STANDBY within the

ACTION B — next 6 hours and in COLD SHUTDOWN within the following 30 hours.

L01

b. With one channel of Station Vent Normal Range Radiation Monitoring instrumentation inoperable, restore the inoperable channel to OPERABLE status, or isolate the control room normal ventilation system and place at least one control room emergency ventilation system train in operation within 7 days.

c. With both channels of Station Vent Normal Range Radiation Monitoring instrumentation inoperable, within 1 hour, isolate the control room normal ventilation system and place at least one control room emergency ventilation system train in operation.

See ITS 3.3.16

SURVEILLANCE REQUIREMENTS

Air Temperature Control — A02

4.7.6.1 Each control room emergency ~~ventilation~~ system shall be demonstrated OPERABLE:

a. At least once per 12 ~~hours~~ by verifying that the control room air ~~temperature~~ is less than or equal to 110 ~~°F~~ when the control room emergency ~~ventilation~~ system is operating.

L02

b. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 15 minutes.

c. At least once each REFUELING INTERVAL and in accordance with the Ventilation Filter Testing Program (VFTP).

See ITS 3.7.10

Add proposed SR 3.7.11.1 — L02

DISCUSSION OF CHANGES
ITS 3.7.11, CONTROL ROOM EMERGENCY AIR TEMPERATURE CONTROL SYSTEM (CREATCS)

ADMINISTRATIVE CHANGES

A01 In the conversion of the Davis-Besse 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-1430, Rev. 3.1, "Standard Technical Specifications-Babcock and Wilcox 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 3.7.6.1 states that two control room emergency ventilation systems shall be OPERABLE. CTS 4.7.6.1.a requires verification that the control room air temperature is ≤ 110°F every 12 hours when the CREVS is operating. Thus, the CTS 3.7.6.1 statement that two CREVS shall be OPERABLE and the CTS 4.7.6.1 statement that each CREVS train shall be demonstrated OPERABLE includes the air temperature control portion of the CREVS. In the ITS, the requirements have been split into separate Technical Specifications; ITS 3.7.10, "Control Room Emergency Ventilation System (CREVS)," for the filtration and control room envelope boundary requirements and ITS 3.7.11, "Control Room Emergency Air Temperature Control System (CREATCS)," for the control room envelope air conditioning requirements. Therefore, the ITS 3.7.11 LCO, ACTIONS, and Surveillance Requirement refers to the CREATCS. This changes the CTS by providing a separate Technical Specification for the CREATCS.

This change is designated as administrative and is acceptable because it does not result in any technical changes, except as justified by another Discussion of Change.

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.7.6.1 states that two "independent" control room emergency ventilation systems shall be OPERABLE. ITS LCO 3.7.10 states that two Control Room Emergency Air Temperature Control System (CREATCS) trains shall be OPERABLE. This changes the CTS by moving the details that the CREATCS trains are "independent" from the CTS to the Bases. The change from CREVS to CREATCS is discussed in DOC A02.

DISCUSSION OF CHANGES
ITS 3.7.11, CONTROL ROOM EMERGENCY AIR TEMPERATURE CONTROL SYSTEM (CREATCS)

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

LESS RESTRICTIVE CHANGES

L01 *(Category 3 – Relaxation of Completion Time)* CTS 3.7.6.1 Action a allows 7 days to restore an inoperable CREVS train to OPERABLE status. ITS 3.7.11 ACTION A allows 30 days to restore an inoperable CREATCS train to OPERABLE status. This changes the CTS by increasing the time allowed to restore the inoperable components from 7 days to 30 days. The change from CREVS to CREATCS is discussed in DOC A02.

The purpose of CTS 3.7.6.1, in part, is to provide a degree of assurance that the CREATCS can provide cooling when required. This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the allowed Completion Time. The CREATCS is still required to be restored to OPERABLE status, and can perform its function without one air conditioning train. Furthermore, alternate non-safety related cooling means are available. This change is designated as less restrictive because additional time is allowed in the ITS to restore parameters to within the LCO limits than was allowed in the CTS.

L02 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.7.6.1.a requires verification every 12 hours that the control room air temperature is $\leq$ 110°F when the CREVS is operating. ITS 3.7.11 does not include this requirement. However, ITS SR 3.7.11.1 requires verification that each CREATCS train has the capability to remove the assumed heat load every 24 months. This changes the CTS by eliminating the Surveillance Requirement to verify control room air temperature every 12 hours and adding a Surveillance Requirement to verify each CREATCS train has the capability to remove the assumed heat load every 24 months.

The purpose of CTS 4.6.7.1.a is to ensure the continuous duty rating for the instrumentation and equipment cooled by this system is not exceeded. This change is acceptable because the deleted Surveillance Requirement is not

DISCUSSION OF CHANGES
ITS 3.7.11, CONTROL ROOM EMERGENCY AIR TEMPERATURE CONTROL SYSTEM (CREATCS)

necessary to ensure the CREATCS can perform its safety function and ITS SR 3.7.11.1 has been added to verify each control room ventilation subsystem has the capability to remove the assumed heat load. This new SR will ensure the CREATCS can perform its safety function. Temperature is not always the appropriate method to verify the system capability to remove its design basis heat load because the conditions in the control room envelope boundary do not always reflect the assumptions of the accident (e.g., personnel assumed to be in the control room envelope boundary during an accident, the system does not normally operate in the pressurization mode of operation). ITS SR 3.7.11.1 will ensure each CREATCS train has sufficient cooling capability to meet the safety analyses assumptions. This change is designated as less restrictive because a Surveillance that is required in the CTS will not be required in the ITS.

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

CTS

CREATCS
3.7.11

3.7 PLANT SYSTEMS

3.7.11 Control Room Emergency Air Temperature Control System (CREATCS)

3.7.6.1 LCO 3.7.11 Two CREATCS trains shall be OPERABLE.

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

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
Action a	A. One CREATCS train inoperable.	A.1 Restore CREATCS train to OPERABLE status.	30 days	
Action b	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	1
	~~C. [Required Action and associated Completion Time of Condition A not met during movement of [recently] irradiated fuel assemblies.~~	~~C.1 Place OPERABLE CREATCS train in operation.~~ ~~OR~~ ~~C.2 Suspend movement of [recently] irradiated fuel assemblies.~~	~~Immediately~~ ~~Immediately]~~	1
	~~D. [Two CREATCS trains inoperable during movement of [recently] irradiated fuel assemblies.~~	~~D.1 Suspend movement of [recently] irradiated fuel assemblies.~~	~~Immediately]~~	

CTS

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Two CREATCS trains inoperable during MODE 1, 2, 3, or 4.	E.1 Enter LCO 3.0.3.	Immediately

1

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY
DOC L02	SR 3.7.11.1	Verify each CREATCS train has the capability to remove the assumed heat load.	~~[18]~~ 24 months

2

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.11, CONTROL ROOM EMERGENCY AIR TEMPERATURE CONTROL SYSTEM (CREATCS)

1. The Davis-Besse fuel handling accident analyses (both inside and outside containment) and waste gas decay tank rupture analysis do not assume the CREATCS operates to provide air conditioning for the control room envelope (CRE). Due to this deletion, the reference to MODES 1, 2, 3, and 4 in ISTS 3.7.11 Condition B and ISTS 3.7.10 ACTIONS C and D have been deleted. Since ISTS 3.7.11 ACTIONS C and D have been deleted, there is no need for ISTS 3.7.11 ACTION E, which requires entry in LCO 3.0.3 when two CREATCS trains are inoperable in MODE 1, 2, 3, or 4. This ACTION was included only because of ISTS 3.7.11 ACTION D. Subsequent ACTIONS have been renumbered due to these deletions.

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

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

All changes are 1 unless otherwise noted

CREATCS
B 3.7.11

B 3.7 PLANT SYSTEMS

B 3.7.11 Control Room Emergency Air Temperature Control System (CREATCS)

BASES

BACKGROUND

The CREATCS provides temperature control for the control room following isolation of the control room.

The CREATCS consists of two independent and redundant trains that provide cooling of recirculated control room air. A cooling coil and a water cooled condensing unit are provided for each system to provide suitable temperature conditions in the control room for operating personnel and safety related control equipment. Ductwork, valves or dampers, and instrumentation also form part of the system. Two redundant air cooled condensing units are provided as a backup to the water cooled condensing unit. Both the water cooled and air cooled condensing units must be OPERABLE for the CREATCS to be OPERABLE. During emergency operation, the CREATCS maintains the temperature ≤ 110°F in the control room ~~between 70°F and 85°F~~. The CREATCS is a subsystem providing air temperature control for the control room.

The CREATCS is an emergency system. On a Safety Features Actuation System (SFAS) signal or a high radiation signal from one of the Station Vent Normal Range Radiation Monitors ~~detection of high containment building pressure or radiation, low Reactor Coolant System pressure, or high noble gas radioactivity in the station vent~~, the Normal ~~normal control room ventilation system~~ is automatically shut down, and the Control Room Emergency Ventilation System (CREVS) can be manually started. Operation of the CREVS is required for CREATCS to be in operation. A single train will provide the required temperature control. The CREATCS operation to maintain control room temperature is discussed in the UFSAR, Section 9.4.1 ~~[9.4]~~ (Ref. 1). 2

APPLICABLE SAFETY ANALYSES

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

The CREATCS components are arranged in redundant, safety related trains. During emergency operation, the CREATCS maintains the temperature ≤ 110°F in the control room ~~between [70]°F and [95]°F~~. A single active failure of a CREATCS component does not impair the ability of the system to perform as designed. The CREATCS is designed in accordance with Seismic Category I requirements. The CREATCS is capable of removing sensible and latent heat loads from the control room, including consideration of equipment heat loads and personnel occupancy requirements, to ensure equipment OPERABILITY. 2

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

BASES

LCO

Two independent and redundant trains of the CREATCS are required to be OPERABLE to ensure that at least one is available, assuming a single failure disables the other train. Total system failure could result in the equipment operating temperature exceeding limits in the event of an accident.

A ~~The~~ CREATCS train is considered OPERABLE when the individual components that are necessary to maintain control room temperature are OPERABLE ~~in both trains~~. These components include the cooling coils, water cooled and air cooled condensing units, and associated temperature control instrumentation. In addition, ~~the~~ each CREATCS train must be OPERABLE to the extent that air circulation can be maintained. 7 7 1 7

APPLICABILITY

~~In MODES 1, 2, 3,~~ and 4, ~~[5, and 6,] and during movement of [recently] irradiated fuel assemblies [i.e., fuel that has occupied part of a critical reactor core within the previous [X] days)],~~ the CREATCS must be OPERABLE to ensure that the control room temperature will not exceed equipment OPERABILITY requirements following isolation of the control room. 1 2

ACTIONS

A.1

With one CREATCS train inoperable, action must be taken to restore the inoperable CREATCS train to OPERABLE status within 30 days. In this condition, the remaining OPERABLE CREATCS train is adequate to maintain the control room temperature within limits. However, the overall reliability is reduced because a failure in the OPERABLE CREATCS train could result in a loss of CREATCS function. The 30 day Completion Time is based on the low probability of an event occurring requiring control room isolation, the consideration that the remaining train can provide the required capabilities, and the alternate ~~safety or~~ nonsafety related cooling means that are available. 3 4 1

~~Concurrent failure of two CREATCS trains would result in the loss of function capability; therefore, LCO 3.0.3 must be entered immediately.~~ 5

B.1 and B.2

~~In MODE 1, 2, 3, or 4,~~ If the inoperable CREATCS train cannot be restored to OPERABLE status within the required Completion Time, the unit must be placed in a MODE 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 without challenging unit systems. 6

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 any active failure will be readily detected.

An alternative to Required Action C.1 is to immediately suspend activities that could release radioactivity that might require the 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.] 6

[D.1

[In MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies, with two CREATCS trains inoperable, action must be taken to immediately suspend activities that could release 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.]

E.1

If both CREATCS trains are inoperable in MODE 1, 2, 3, or 4, the CREATCS 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 3.7.11.1

This SR verifies that the heat removal capability of the system is sufficient to remove the heat load assumed in the [safety analyses]. This SR consists of a combination of testing and calculations. An [18] month Frequency is appropriate, as significant degradation of the CREATCS is slow and is not expected over this time period. 2 24 2

REFERENCES U 1. FSAR, Section [9.4]. 9.4.1 1 2

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.11 BASES, CONTROL ROOM EMERGENCY AIR TEMPERATURE CONTROL SYSTEM (CREATCS)

1. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.
2. The brackets have been removed and the proper plant specific information/value has been provided.
3. Changes are made to reflect the Specification.
4. Typographical error corrected.
5. Editorial change to be consistent with similar discussions in other Bases. This discussion concerns one inoperable CREATCS, not both.
6. Changes are made to reflect changes made to the Specification.
7. Editorial changes for consistency with similar discussions in other Bases.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.11, CONTROL ROOM EMERGENCY AIR TEMPERATURE CONTROL SYSTEM (CREATCS)

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 12

ITS 3.7.12, STATION EMERGENCY VENTILATION SYSTEM (EVS)

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

ITS

A01

ITS 3.7.12

CONTAINMENT SYSTEMS

3/4.6.5 SHIELD BUILDING

EMERGENCY VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

LA01

LCO 3.7.12 3.6.5.1 Two ~~independent~~ emergency ventilation systems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

ACTION A — With one emergency ventilation system inoperable, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD
ACTION C — SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.5.1 Each emergency ventilation system shall be demonstrated OPERABLE:

L01

SR 3.7.12.1 a. At least once per 31 days on a ~~STAGGERED TEST BASIS~~ by ~~initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and~~ verifying that the system operates for at least 15 minutes.

LA02

SR 3.7.12.2 b. At least once each REFUELING INTERVAL and in accordance with the Ventilation Filter Testing Program (VFTP).

A01

ITS

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

1. [Deleted]

2. [Deleted]

3. [Deleted]

c. [Deleted]

d. At least once each REFUELING INTERVAL by:

LA03

1. [Deleted]

actuation

SR 3.7.12.3 2. Verifying that the system starts automatically on any ~~containment isolation~~ test signal; and

actual or

L02

SR 3.7.12.5 3. Verifying that the filter cooling bypass valves can be manually opened.

ITS | A01 | ITS 3.7.12

CONTAINMENT SYSTEMS

SHIELD BUILDING INTEGRITY

LIMITING CONDITION FOR OPERATION

LCO 3.7.12 — 3.6.5.2 Shield building integrity shall be maintained. LA01

APPLICABILITY: MODES 1, 2, 3 and 4

ACTION:

ACTION B — Without shield building integrity, restore shield building integrity within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD
ACTION C — SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.5.2.1 Shield building integrity shall be demonstrated at least once per 31 days by verifying that airtight doors and the blowout panels listed in Table 4.6-1 are closed except when the airtight doors are being used for normal transit entry and exit. L03 L04

LCO NOTE

SR 3.7.12.4 — 4.6.5.2.2 Shield building integrity shall be demonstrated at least once per REFUELING INTERVAL by verifying that each Emergency Ventilation System train produces a negative pressure of greater than or equal to 0.25 inches Water Gauge in the annulus within 4 seconds after the fan attains a flow rate of 8000 cfm ± 10%. This test is to be performed with the flow path established prior to starting the EVS fan, and the other dampers associated with the negative pressure boundary closed. L05 LA02

A01

ITS 3.7.12

TABLE 4.6-1
ACCESS OPENINGS REQUIRED TO BE CLOSED
TO ENSURE SHIELD BUILDING INTEGRITY

LA04

I. AIR TIGHT DOORS

DOOR NO.	DESCRIPTION	ELEVATION
100	Access Door from the No. 1 ECCS Pump Room (Room 105) to Pipe Tunnel 101	545'
104A	Access Door from Stair AB-3 to the No. 1 ECCS Pump Room (Room 105)	555'
105	Access Door from Passage 110A to the area above the Decay Heat Coolers	555'
107	Access Door from the No. 2 ECCS Pump Room (Room 115) to the Miscellaneous Waste Monitor Tank and Pump Room (Room 114)	555'
108	Access Door from the No. 2 ECCS Pump Room (Room 115) to the Detergent Waste Drain Tank and Pump Room (Room 125)	555'
201-A	Access Door from Corridor 209 to the No. 1 Mechanical Penetration Room (Room 208)	565'
204	Access Door from Passage 227 to the Makeup Pump Room (Room 225)	565'
205	Access Door from Passage 227 to the No. 2 Mechanical Penetration Room (Room 236)	565'
307	Access Door from Corridor 304 to the No. 3 Mechanical Penetration Room (Room 303)	585'
308	Access Door from Corridor 304 to the No. 4 Mechanical Penetration Room (Room 314)	585'

II. BLOWOUT PANELS

TOTAL NO.	LOCATION	ELEVATION
1	No. 2 Mechanical Penetration Room (Room 236)	565'
6	No. 3 Mechanical Penetration Room (Room 303)	585'
6	No. 4 Mechanical Penetration Room (Room 314)	585'

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DISCUSSION OF CHANGES
ITS 3.7.12, STATION EMERGENCY VENTILATION SYSTEM (EVS)

ADMINISTRATIVE CHANGES

A01 In the conversion of the Davis-Besse 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-1430, Rev. 3.1, "Standard Technical Specifications-Babcock and Wilcox 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 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.6.5.1 states that two "independent" emergency ventilation systems shall be OPERABLE. CTS 3.6.5.2 states that the shield building integrity shall be maintained. ITS LCO 3.7.12 states that two Station EVS trains shall be OPERABLE. This changes the CTS by moving the details that the Station EVS trains are "independent" and that the "shield building integrity" must be maintained from the CTS to the Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement that two Station EVS trains be OPERABLE. The details concerning the independence of the trains do not need to appear in the Specification in order for the requirement to apply. The details concerning the shield building integrity are considered part of the OPERABILITY requirements for the Station EVS trains. ITS SR 3.7.12.4 ensures that each Station EVS train can drawdown the shield building area negative pressure boundary, and ITS 3.7.12 ACTION B provides actions for when both Station EVS trains are inoperable due to an inoperable shield building area negative pressure boundary. 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.

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DISCUSSION OF CHANGES
ITS 3.7.12, STATION EMERGENCY VENTILATION SYSTEM (EVS)

LA02 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.6.5.1.a states that each EVS train shall be demonstrated OPERABLE by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the train operates for a least 15 minutes. CTS 4.6.5.2.2 requires the shield building area negative pressure boundary drawdown test to be "performed with the flow path established prior to starting the EVS fan, and the other dampers associated with the shield building area negative pressure boundary closed." ITS SR 3.7.12.1 states to operate the each Station EVS train for ≥ 15 minutes. ITS SR 3.7.12.4 performs the shield building area negative pressure boundary drawdown test, but does not include the prerequisites (described above) of CTS 4.6.5.2.2. This changes the CTS by moving the details of how the Surveillances are conducted to the Bases.

The removal of these details for performing Surveillance Requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement to periodically operate the Station EVS trains and perform a drawdown test of the shield building area negative pressure boundary. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LA03 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 4.6.5.1.d.2 requires verification of the automatic actuation of the Station EVS trains on a "containment isolation" test signal. ITS SR 3.7.12.3 does not state the specific type of signal, but only specifies an actual or simulated "actuation" signal. This changes CTS by moving the type of actuation signal (i.e., containment isolation) to the Bases.

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

LA04 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS Table 4.6-1 contains a list of the shield building area negative pressure boundary airtight doors and blowout panels. ITS 3.7.12 does

DISCUSSION OF CHANGES
ITS 3.7.12, STATION EMERGENCY VENTILATION SYSTEM (EVS)

not contain this list. This changes the CTS by relocating the list of the shield building area negative pressure boundary airtight doors and blowout panels to the Technical Requirements Manual (TRM).

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. ITS 3.7.12 still requires the shield building area negative pressure boundary to be intact, and ITS SR 3.7.12.4 requires periodic Surveillances to verify the integrity of the boundary. It is not necessary for the list of the shield building area negative pressure boundary airtight doors and blowout panels to be in the Technical Specifications in order to ensure that the shield building area negative pressure boundary is intact. Other lists of components, such as containment isolation valves and equipment response times, have been relocated from the Technical Specification to licensee-controlled documents while retaining the requirements on these components in Technical Specifications. Also, this change is acceptable because the removed information will be adequately controlled in the TRM. The TRM is currently incorporated by reference into the UFSAR, thus any changes to the TRM are made under 10 CFR 50.59, which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L01 *(Category 7 – Relaxation Of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.6.5.1.a states that each Station EVS train shall be demonstrated OPERABLE at least once every 31 days "on a STAGGERED TEST BASIS" by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the train operates for a least 15 minutes. ITS SR 3.7.12.1 requires a similar test every 31 days, but does not include the "STAGGERED TEST BASIS" requirement. This changes the CTS by deleting the requirement to test on a STAGGERED TEST BASIS.

The purpose of CTS 4.6.5.1.a is to demonstrate the OPERABILITY of the EVS trains. This change is acceptable because the new Surveillance Frequency provides an acceptable level of equipment reliability. This change deletes the requirement to perform CTS 4.6.5.1.a on a STAGGERED TEST BASIS. The intent of a requirement for staggered testing is to increase reliability of the component/system being tested. A number of studies have been performed that demonstrate that staggered testing has negligible impact on component reliability. These analytical and subjective analyses have determined that staggered testing 1) is operationally difficult, 2) has negligible impact on component reliability, 3) has no impact on failure frequency, 4) introduces additional stress on components potentially causing increased component failures rates and component wearout, 5) results in reduced redundancy testing, and 6) increases likelihood of human error by increasing testing intervals. Therefore, the EVS staggered testing requirements have been deleted. This change is designated as less restrictive because the intervals between

DISCUSSION OF CHANGES
ITS 3.7.12, STATION EMERGENCY VENTILATION SYSTEM (EVS)

performances of the Surveillances for the two EVS trains can be larger or smaller under the ITS than under the CTS.

L02 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.6.5.1.d.2 requires verification of the automatic actuation of the Station EVS trains on a containment isolation "test" signal. ITS SR 3.7.12.3 specifies that the signal may be from either an "actual" or simulated (i.e., test) signal. This changes the CTS by explicitly allowing the use of either an actual or simulated signal for the test.

The purpose of CTS 4.6.5.1.d.2 is to ensure the Station EVS trains operate correctly upon receipt of an actuation signal. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. Equipment cannot discriminate between an "actual," "simulated," or "test" signal and, therefore, the results of the testing are unaffected by the type of signal used to initiate the test. This change allows taking credit for unplanned actuation if sufficient information is collected to satisfy the Surveillance test requirements. The change also allows a simulated signal to be used, if necessary. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L03 *(Category 5 – Deletion Of Surveillance Requirement)* CTS 4.6.5.2.1 requires the shield building area negative pressure boundary airtight doors and blowout panel to be verified closed once per 31 days. ITS 3.7.12 does not include this Surveillance. This changes the CTS by deleting this specific Surveillance.

The purpose of CTS 4.6.5.2.1 is to help ensure the shield building area negative pressure boundary is intact. This change is acceptable since this specific Surveillance is not required to ensure the shield building area negative pressure boundary is intact. The airtight doors are routinely accessed by station personnel for entry and exit into the shield building area negative pressure boundary. Station practices and procedures require these doors to be closed immediately after use. Therefore, a specific Surveillance verifying the doors are closed is not needed: they are checked closed after use by the individuals using the doors. Furthermore, if a door was left open by an individual, it would be found by the next individual who used the door and properly closed. Also, some of the doors will provide a security alarm if the door is left open for an extended time. The blowout panels are part of the building walls. They are not access points for entry or exit into the shield building area negative pressure boundary. Any problem with the blowout panels that affects the shield building area negative pressure boundary integrity would be identified during the drawdown test (ITS SR 3.7.12.4), similar to other problems with the boundary (e.g., a penetration leaking excessively such that it impacted the drawdown test). Furthermore, any positive pressure event that could negatively impact the blowout panels would be readily obvious to plant personnel. Thus, if the overpressure event negatively affected the blowout panels, it would not go undetected. This change is designated as less restrictive because a Surveillance Requirement required by the CTS is not required in the ITS.

DISCUSSION OF CHANGES
ITS 3.7.12, STATION EMERGENCY VENTILATION SYSTEM (EVS)

L04 *(Category 1 – Relaxation of LCO Requirements)* CTS 4.6.5.2.1, in part, specifies that doors in the shield building area negative pressure boundary may be opened during normal transit entry and exit. ITS 3.7.12 includes this allowance in an LCO Note, which states that the shield building area negative pressure boundary may be opened intermittently under administrative control. This changes the CTS by allowing the shield building area negative pressure boundary to be opened for more reasons than is specified in the CTS.

The purpose of the CTS 4.6.5.2.1 allowance is to allow the shield building area negative pressure boundary to be opened under administrative control. This change is acceptable because the LCO requirements continue to ensure that the structures, systems, and components are maintained consistent with the safety analyses and licensing basis. The CTS allows doors in the shield building area *negative pressure boundary to be opened during normal transit entry and exit.* The ITS allows these doors to be opened, but in addition will allow other portions of the boundary to be opened. This change is acceptable since administrative controls must be in place in order to open the boundary. The administrative controls required are described in the Bases. For entry and exit through doors the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for shield building area negative pressure boundary isolation is indicated. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

L05 *(Category 7 – Relaxation Of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.6.5.2.2 requires verification that each EVS train can drawdown the shield building area to a negative pressure of $\geq$ 0.25 inches water gauge in the annulus within 4 seconds after the fan attains a flow rate $\geq$ 7200 cfm and $\leq$ 8800 cfm at least once per Refueling Interval (i.e., 24 months). ITS SR 3.7.12.4 requires this same test, however it is required to be performed using one Station EVS train every 24 months "on a STAGGERED TEST BASIS." This changes the CTS by requiring the test to be performed using each Station EVS train at least once per 48 months.

The purpose of the CTS 4.6.5.2.2 is to ensure the integrity of the shield building area negative pressure boundary. This change is acceptable because the new Surveillance Frequency provides an acceptable level of equipment reliability. The change is acceptable since the proposed Surveillance Frequency will continue to require performance of the test every 24 months. This will ensure the shield building area negative pressure boundary integrity is maintained. The status of the integrity of the shield building area negative pressure boundary can be determined with either Station EVS train. ITS SR 3.7.12.3 requires the performance of a test to ensure each Station EVS 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 shield building area negative pressure boundary can be maintained at the proper negative pressure will only be required with one train in operation. This change is designated as less restrictive because the

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DISCUSSION OF CHANGES
ITS 3.7.12, STATION EMERGENCY VENTILATION SYSTEM (EVS)

Surveillance will only be required to be performed on one Station EVS train each Surveillance interval instead of on both Station EVS trains.

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

CTS

All changes are 1 unless otherwise noted

Station EVS
3.7.12

3.7 PLANT SYSTEMS

3.7.12 Station Emergency Ventilation System (EVS)

3.6.5.1, 3.6.5.2 LCO 3.7.12 Two Station EVS trains shall be OPERABLE.

4.6.5.2.1

---------------------------------------NOTE---------------------------------------

The shield ~~auxiliary~~ building negative pressure ~~area~~ boundary may be opened intermittently under administrative control.

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

ACTIONS

CTS	CONDITION	REQUIRED ACTION	COMPLETION TIME
3.6.5.1 Action	A. One Station EVS train inoperable.	A.1 Restore Station EVS train to OPERABLE status.	7 days
3.6.5.2 Action	B. Two Station EVS trains inoperable due to inoperable shield ~~auxiliary~~ building negative pressure ~~area~~ boundary.	B.1 Restore shield ~~auxiliary~~ building negative pressure ~~area~~ boundary to OPERABLE status.	24 hours
3.6.5.1 Action, 3.6.5.2 Action	C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours

CTS

Station EVS (1)
3.7.12

SURVEILLANCE REQUIREMENTS

		SURVEILLANCE	FREQUENCY	
4.6.5.1.a	SR 3.7.12.1	Operate each Station EVS train for ~~[≥ 10 continuous hours with the heaters operating or (for systems without heaters)~~ ≥ 15 minutes].	31 days	(1) (2)
4.6.5.1.b	SR 3.7.12.2	Perform required Station EVS filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)].	In accordance with the [VFTP]	(1) (2)
4.6.5.1.d.2	SR 3.7.12.3	Verify each Station EVS train actuates on an actual or simulated actuation signal.	~~[18]~~ 24 months	(1) (2)
4.6.5.2.2	SR 3.7.12.4	Verify one Station EVS train can ~~maintain~~ attain a negative pressure ≥ 0.25 ~~≤ [ ]~~ inches water gauge in the annulus ≤ 4 seconds after the ~~relative to atmospheric pressure during the [post accident] mode of operation at a~~ flow rate ~~of~~ is ≥ 7200 cfm and ≤ ~~[3000]~~ 8800 cfm.	~~[18]~~ 24 months on a STAGGERED TEST BASIS	(1) (3) (2)
4.6.5.1.d.3	SR 3.7.12.5	[Verify each Station EVS filter cooling bypass damper can be opened.	~~[18]~~ 24 months]	(1) (2)

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JUSTIFICATION FOR DEVIATIONS
ITS 3.7.12, STATION EMERGENCY VENTILATION SYSTEM (EVS)

1. Changes are made to the ISTS Specification which reflect plant specific nomenclature.

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

3. ISTS SR 3.7.12.4 has been modified consistent with the Davis-Besse current licensing basis and design basis. The Station EVS trains are assumed to drawdown the shield building area boundary to a negative pressure in the annulus within 4 seconds after the flow rate is $\geq$ 7200 cfm and $\leq$ 8800 cfm.

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

All changes are 1 unless otherwise noted

Station EVS
B 3.7.12

B 3.7 PLANT SYSTEMS

Station

B 3.7.12 Emergency Ventilation System (EVS)

BASES

BACKGROUND

INSERT 1

~~The EVS filters air from the area of the active Emergency Core Cooling System (ECCS) components during the recirculation phase of a loss of coolant accident (LOCA).~~

Station

The EVS consists of two independent, redundant trains. Each train consists of a prefilter, 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. ~~The system initiates filtered ventilation of the Auxiliary Building negative pressure area following receipt of a safety features actuation signal (SFAS).~~

INSERT 2

~~The EVS is a standby system. During emergency operations, the EVS dampers are realigned, and fans are started to begin filtration. Upon receipt of the SFAS signal(s), normal air discharges from the negative pressure area are isolated, 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.~~

INSERT 3

Station U

The EVS is discussed in the FSAR, Sections ~~6.2.3~~, ~~9.4.2~~, and 15.4.6 (Refs. 1, 2, and 3, respectively). .2 2

APPLICABLE SAFETY ANALYSES

Station

The design basis of the EVS is established by the large break LOCA. The system evaluation assumes a passive failure of the ECCS outside containment, such as an ECCS pump seal failure during the recirculation mode. In such a case, the system limits radioactive release to within 10 CFR 100 (Ref. 4) requirements. The analysis of the effects and consequences of a large break LOCA is presented in Reference 3. ~~The EVS also actuates following a small break LOCA, in those cases where the unit goes into the recirculation mode of long term cooling, and to cleanup releases of smaller leaks, such as from valve stem packing.~~

1 INSERT 1

The function of the Station Emergency Ventilation System (EVS) is to collect and process potential leakage from the containment vessel to minimize environmental activity levels resulting from all sources of containment leakage following a loss of coolant accident (LOCA).

The Station EVS is required to:

a. Maintain a negative pressure (minimum of ¼ inch water gauge), with respect to outside atmosphere, within the annular space between the shield building and the containment vessel and in the penetration rooms following a LOCA; and

b. Provide a filtered exhaust path from the shield building annulus and the penetration and pump rooms following a LOCA.

1 INSERT 2

Normally, the Station EVS is idle during normal plant operations. Following a LOCA, an Incident Level 1 Safety Features Actuation System (SFAS) signal (Containment Pressure - High or Reactor Coolant System Pressure - Low) will start both fans and then the Station EVS suction dampers and the discharge dampers to the station vent stack will open. The recirculating dampers remain closed until the annulus differential pressure reaches the setpoint. Interconnecting dampers CV5024 and CV5025 will be automatically closed (if they are open) by the SFAS signal in the event of a LOCA. The Level 1 SFAS signal will also isolate the area being serviced by the Station EVS by closing the Containment Purge and Exhaust System valves and the ECCS pump room isolation valves to ensure that the Station EVS can draw down the shield building area to the required negative pressure.

1 INSERT 3

Prefilters are provided to remove coarse airborne particles to prolong HEPA filter life. HEPA filters are provided to remove fine airborne particulates that penetrate the prefilter. The activated charcoal adsorbers are impregnated to remove methyl iodide as well as elemental iodine contaminants resulting from a LOCA.

All changes are 1 unless otherwise noted

Station EVS
B 3.7.12

BASES

APPLICABLE SAFETY ANALYSES (continued)

affected assumptions

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 of any gaseous and particulate activity released to the ECCS pump rooms following a LOCA. 7

Station

Following a LOCA, an ESFAS signal starts the EVS fans and opens the ~~dampers located in the penetration room outlet ductwork~~. The ESFAS signal closes all containment isolation valves ~~and purge system valves~~. The purge system fans, if running, are shut down automatically.

INSERT 4 INSERT 4A

Station

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

LCO

Station

Two independent and redundant trains of the EVS 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 atmospheric release from the negative pressure area boundary exceeding Reference 4 limits in the event of a Design Basis Accident (DBA).

Station

The EVS is considered OPERABLE when the individual components necessary to maintain the negative pressure area boundary filtration are OPERABLE in both trains.

An EVS train is considered OPERABLE when its associated:

a. Fan is OPERABLE; 3

b. HEPA filter and charcoal adsorber are not excessively restricting flow, and are capable of performing their filtration functions; and 3

D

c. ~~[Heater, demister,]~~ Ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained. 2

INSERT 4B

shield area

The LCO is modified by a Note allowing the ~~Auxiliary~~ Building negative pressure ~~area~~ 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 ~~Auxiliary~~ Building negative pressure ~~area~~ isolation is indicated. 4

shield

1 **INSERT 4**

Station EVS suction dampers and the discharge dampers to the station vent stack

1 **INSERT 4A**

, mechanical penetration room dampers, Purge and Exhaust System valves, and the connection between the Emergency Ventilation System and the spent fuel pool area

1 **INSERT 4B**

Furthermore, the list of access openings required to be closed to ensure the shield building area negative pressure boundary is intact is provided in Reference 5.

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All changes are 1 unless otherwise noted

Station EVS
B 3.7.12

BASES

APPLICABILITY	In MODES 1, 2, 3, and 4, the EVS is required to be OPERABLE consistent with the OPERABILITY requirements of the ECCS. In MODES 5 and 6, the EVS is not required to be OPERABLE since the ECCS is not required to be OPERABLE.

ACTIONS

A.1

With one EVS 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 EVS safety function. However, the overall reliability is reduced because a single failure in the OPERABLE EVS train could result in loss of EVS function.

The 7 day Completion Time is appropriate because the risk contribution 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 time period, and ability of the remaining train to provide the required capability.

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.

If the ~~Auxiliary~~ Building negative pressure ~~area~~ boundary is inoperable, the EVS trains cannot perform their intended functions. Actions must be taken to restore ~~an~~ ~~OPERABLE~~ ~~Auxiliary~~ Building negative pressure ~~area~~ boundary within 24 hours. During the period that the ~~Auxiliary~~ Building negative pressure ~~area~~ boundary is inoperable, appropriate compensatory measures ~~[consistent with the intent, as applicable, of GDC 19, 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 ~~Auxiliary~~ Building negative pressure ~~area~~ boundary.

All changes are 1 unless otherwise noted

Station

EVS
B 3.7.12

BASES

ACTIONS (continued)

C.1 and C.2

Station shield

If the EVS train or the ~~Auxiliary~~ Building negative pressure ~~area~~ 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.

SURVEILLANCE REQUIREMENTS

SR 3.7.12.1

Standby systems should be checked periodically to ensure that they function properly. Since 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~~.] 4

Initiating each train from the control room, with flow through the HEPA filters and charcoal adsorbers, and operating

each train

s

The 31 day Frequency is based on known reliability of equipment and the two train redundancy available.

SR 3.7.12.2

Station

This SR verifies that the required EVS 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]. 2 7 2

SR 3.7.12.3

Station

(i.e., containment isolation)

This SR verifies that each EVS train starts and operates on an actual or simulated actuation signal. ~~The [18] month Frequency is consistent with that specified in Reference 5.~~ 4 2

Operating experience has shown that these components usually pass the Surveillance when performed at the 24 month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.

All changes are 1 unless otherwise noted

Station

EVS
B 3.7.12

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.12.4

shield building area

attain

in the annulus

Station

This SR verifies the integrity of the negative pressure boundary ~~area~~. The ability of the EVS to ~~maintain~~ a negative pressure~~, with respect to potentially uncontaminated adjacent areas,~~ is periodically tested to verify proper functioning of the EVS. During the [post accident] mode of operation, the EVS is designed to maintain a slight negative pressure in the negative pressure boundary ~~area~~ with respect to adjacent areas to prevent unfiltered ~~LEAKAGE~~. The EVS is designed to ~~maintain~~ this negative pressure at a flow rate of ~~[3000]~~ cfm from the negative pressure boundary ~~area~~. The Frequency of ~~[18]~~ months on a STAGGERED TEST BASIS is consistent with industry practice ~~and other filtration SRs~~.

4

2

shield building area

4

7

Station

attain

leakage

2

2

The Surveillance is performed with the flow path established prior to starting the Station EVS fan, and the other dampers associated with the shield building area negative pressure boundary closed.

24

≥ 7200 cfm and ≤ 8800

shield building area

4

[SR 3.7.12.5

each Station

cooling

(i.e., EVS fans cross tie dampers, CV5056 and CV5057)

Operating ~~the~~ EVS filter bypass damper is necessary to ensure that the system functions properly. The OPERABILITY of the EVS filter bypass damper is verified if it can be ~~closed~~. ~~An [18] month Frequency is consistent with that specified in Reference 5.]~~

Station

6

cooling

opened

REFERENCES

1. FSAR, Section [6.2.3].
2. FSAR, Section [9.4.2].
3. FSAR, Section [15.4.6].
4. 10 CFR 100.11.
5. ~~Regulatory Guide 1.52, Rev. [2]~~.

U

.2

Operating experience has shown that these components usually pass the Surveillance when performed at the 24 month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.

2

Technical Requirements Manual

1

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.12 BASES, STATION EMERGENCY VENTILATION SYSTEM (EVS)

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

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

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

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

5. 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 ISTS ACTION described in these Bases is currently allowed by the Davis-Besse CTS.

6. Changes are made to reflect the Specification.

7. Typographical error corrected.

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.12, STATION EMERGENCY VENTILATION SYSTEM (EVS)

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 13

ITS 3.7.13, SPENT FUEL POOL AREA EMERGENCY VENTILATION SYSTEM (EVS)

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

ITS

A01

ITS 3.7.13

REFUELING OPERATIONS

STORAGE POOL VENTILATION

LIMITING CONDITION FOR OPERATION

LA01

A02

LCO 3.7.13 3.9.12 Two ~~independent~~ emergency ventilation systems servicing the storage pool area shall be OPERABLE. When an emergency ventilation system servicing the storage pool is incapable of meeting the acceptance criteria of Surveillance Requirement 4.9.12.1 solely because ~~the containment equipment hatch is open and~~ both doors of the containment personnel air lock are open, it may be considered

LA03

LCO 3.7.13 Note OPERABLE ~~provided that at least one personnel air lock door is capable of being closed and a designated individual is available immediately outside the personnel air lock to close the door.~~

L01

APPLICABILITY: ~~Whenever irradiated fuel is in the spent fuel pool~~ or ~~during CORE ALTERATIONS~~ or movement of irradiated fuel within ~~the containment with the containment equipment hatch open.~~

L02

L03

ACTION: Add proposed ACTION A

L04

ACTION B a. With one emergency ventilation system servicing the storage pool area inoperable, ~~fuel movement within the spent fuel pool or crane operation with loads over the spent fuel pool~~ may proceed provided the OPERABLE emergency ventilation system servicing the storage pool area is in operation ~~and discharging through at least one train of HEPA filters and charcoal adsorbers~~.

L05

LA02

~~b. With one emergency ventilation system servicing the storage pool area inoperable, CORE ALTERATIONS and fuel movement within containment may proceed provided either the OPERABLE emergency ventilation system servicing the storage pool area is in operation and discharging through at least one train of HEPA filters and charcoal adsorbers or the containment equipment hatch cover is closed and held in place by a minimum of four bolts.~~

L03

ACTION C c. With no emergency ventilation system servicing the storage pool area OPERABLE, suspend ~~CORE ALTERATIONS and~~ all operations involving movement of ~~fuel within the containment or~~ spent fuel pool, ~~or crane operation with loads over the spent fuel pool,~~ until at least one system is restored to OPERABLE status. ~~CORE ALTERATONS and fuel movement within containment may proceed provided the containment equipment hatch cover is closed and held in place by a minimum of four bolts.~~

L03

L05

L03

ACTIONS NOTE d. The provisions of Specifications 3.0.3 ~~and 3.0.4~~ are not applicable.

A02

SURVEILLANCE REQUIREMENTS

SR 3.7.13.4 4.9.12.1 The above required emergency ventilation system servicing the storage pool area shall be demonstrated OPERABLE per the applicable Surveillance Requirements of 4.6.5.1, and at least once each REFUELING INTERVAL on a STAGGERED TEST BASIS by verifying that the emergency ventilation system servicing the storage pool area maintains the storage pool area at a negative pressure of ≥ 1/8 inches Water Gauge relative to the outside atmosphere during system operation.

L06

SR 3.7.13.3 4.9.12.2 The normal storage pool ventilation system shall be demonstrated OPERABLE at least once each REFUELING INTERVAL by verifying that the system ~~fans stop automatically and that dampers automatically divert flow into the emergency ventilation system~~ actuates on a actual or ~~fuel storage area high radiation~~ actuation test signal.

L07

LA04

ITS

A01

ITS 3.7.13

CONTAINMENT SYSTEMS

3/4.6.5 SHIELD BUILDING

EMERGENCY VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.5.1 Two independent emergency ventilation systems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With one emergency ventilation system inoperable, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

See ITS 3.7.12

SURVEILLANCE REQUIREMENTS

4.6.5.1 Each emergency ventilation system shall be demonstrated OPERABLE:

L08

SR 3.7.13.1 a. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 15 minutes.

LA05

SR 3.7.13.2 b. At least once each REFUELING INTERVAL and in accordance with the Ventilation Filter Testing Program (VFTP).

A01

ITS 3.7.13

ITS

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

1. [Deleted]

2. [Deleted]

See ITS 3.7.12

3. [Deleted]

c. [Deleted]

d. At least once each REFUELING INTERVAL by:

1. [Deleted]

2. Verifying that the system starts automatically on any containment isolation test signal; and

SR 3.7.13.5

3. Verifying that the filter cooling bypass valves can be manually opened.

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DISCUSSION OF CHANGES
ITS 3.7.13, SPENT FUEL POOL AREA EMERGENCY VENTILATION SYSTEM (EVS)

ADMINISTRATIVE CHANGES

A01 In the conversion of the Davis-Besse 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-1430, Rev. 3.1, "Standard Technical Specifications-Babcock and Wilcox 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 3.9.12 Action d states, in part, that the provisions of Specification 3.0.4 are not applicable. ITS 3.7.13 does not include this exception. This changes the CTS by deleting the specific exception to Specification 3.0.4.

This change is acceptable because it results in no technical change to the Technical Specifications. CTS 3.0.4 provides requirements to preclude changing MODES with inoperable equipment. However, ITS LCO 3.0.4 has been modified to allow MODE changes under certain circumstances. This is justified in the Discussion of Changes for ITS Section 3.0. Therefore, this specific exception to CTS 3.0.4 is not needed in the ITS. This change is designated as administrative because it does not result in a technical change to the CTS.

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.9.12 states that two "independent" emergency ventilation systems servicing the storage pool area shall be OPERABLE. ITS LCO 3.7.13 states that two Spent Fuel Pool Area EVS trains shall be OPERABLE. This changes the CTS by moving the details that the Spent Fuel Pool Area EVS trains are "independent" from the CTS to the Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement that two Spent Fuel Pool Area EVS trains be OPERABLE. The details concerning the independence of the trains do not need to appear in the Specification in order for the requirement to apply. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the

DISCUSSION OF CHANGES
ITS 3.7.13, SPENT FUEL POOL AREA EMERGENCY VENTILATION SYSTEM (EVS)

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 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 3.9.12 Actions a and b, under certain conditions, requires the OPERABLE Spent Fuel Pool Area EVS train to be in operation and "discharging through at least one train of HEPA filters and charcoal adsorbers." Under similar conditions, ITS 3.7.13 Required Action B.1 requires the OPERABLE Spent Fuel Pool EVS train to be placed in operation. This changes the CTS by moving the details of what placing the train in operation entails to the Bases.

The removal of these details for meeting a Technical Specification requirement is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirements to place the OPERABLE Spent Fuel Pool Area EVS train in operation. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LA03 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 3.9.12, in part, allows CTS 4.9.12.1 not to be met due to both doors of the personnel air lock being open, provided at least one personnel air lock door is capable of being closed and a designated individual is available immediately outside the personnel air lock to close the door. The Note to ITS LCO 3.7.13 also allows the Spent Fuel Pool Area EVS trains to be inoperable due to opening of the boundary under administrative control, but does not include these specific provisions of the allowance. This changes the CTS by moving the details of controlling the open air lock doors (i.e., one is capable of being closed and a designated individual is available immediately outside the personnel air lock to close the door) to the Bases.

The removal of these details for meeting a Technical Specification requirement 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 LCO Note allowance to open the boundary under administrative control. Also, this change is acceptable because these types of details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because details for meeting Technical Specification requirements are being removed from the Technical Specifications.

DISCUSSION OF CHANGES
ITS 3.7.13, SPENT FUEL POOL AREA EMERGENCY VENTILATION SYSTEM (EVS)

LA04 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 4.9.12.2 requires verification that the system "fans stop automatically" and "that dampers automatically divert flow into the emergency ventilation system" on a "fuel storage area high radiation" test signal. ITS SR 3.7.13.3 does not state the specific automatic actions or the specific type of signal, but only specifies the Spent Fuel Pool Area EVS "actuates" on an actual or simulated "actuation" signal. This changes CTS by moving the actions when the system actuates and the type of actuation signal to the Bases. The change to replace "test" with "simulated" and allow both "actual or simulated" actuation signals to be used for these SRs is discussed in DOC L07.

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

LA05 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 4.6.5.1.a states that each EVS train shall be demonstrated OPERABLE by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the train operates for a least 15 minutes. ITS SR 3.7.13.1 states to operate each Spent Fuel Pool Area EVS train for $\geq$ 15 minutes. This changes the CTS by moving the details of how the Surveillance is conducted to the Bases.

The removal of these details for performing a Surveillance Requirement from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement to periodically operate the Spent Fuel Pool Area EVS trains. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

<u>LESS RESTRICTIVE CHANGES</u>

L01 *(Category 1 – Relaxation of LCO Requirements)* CTS 3.9.12, in part, specifies that both doors of the containment personnel air lock may be opened under administrative control (a designated individual who can close the door when

DISCUSSION OF CHANGES
ITS 3.7.13, SPENT FUEL POOL AREA EMERGENCY VENTILATION SYSTEM (EVS)

needed). ITS 3.7.13 includes this allowance in an LCO Note, which states that the spent fuel pool area negative pressure boundary may be opened under administrative control. This changes the CTS by allowing the spent fuel pool area negative pressure boundary to be opened for more reasons than is specified in the CTS.

The purpose of the CTS 3.9.12 allowance is to allow the boundary to be opened under administrative control. This change is acceptable because the LCO requirements continue to ensure that the structures, systems, and components are maintained consistent with the safety analyses and licensing basis. The CTS allows both doors of the personnel air lock to be opened under administrative control. The ITS allows these doors to be opened, but in addition will allow other portions of the boundary to be opened. This change is acceptable since administrative controls must be in place in order to open the boundary. The administrative controls required are described in the Bases. For entry and exit through doors the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for spent fuel pool area negative pressure boundary isolation is indicated. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

L02 *(Category 2 – Relaxation of Applicability)* CTS 3.9.12 states, in part, that the requirements for the Spent Fuel Pool Area EVS trains are applicable "Whenever irradiated fuel assemblies is in the spent fuel pool." ITS 3.7.13 is applicable "During movement of irradiated fuel assemblies in the spent fuel pool." This changes the CTS by restricting the Applicability to only when there is a potential for a fuel handling accident in the spent fuel pool, i.e., during the movement of irradiated fuel assemblies in the spent fuel pool.

The purpose of CTS 3.9.12 is to ensure that any releases of radioactivity from a fuel handling accident are within the limits of the fuel handling accident analysis. This change is acceptable because the requirements continue to ensure that the structures, systems, and components are maintained in the MODES and other specified conditions assumed in the safety analyses and licensing basis. The fuel handling accident analysis (outside containment) assumes that a single fuel assembly is damaged. A fuel handling accident is only assumed to occur when an irradiated fuel assembly is being moved. Therefore, the ITS imposes the controls on the Spent Fuel Pool Area EVS during the movement of irradiated fuel 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.

L03 *(Category 2 – Relaxation of Applicability)* CTS 3.9.12, in part, allows the acceptance criteria of CTS 4.9.12.1 to not be met solely due to the containment equipment hatch being open in combination with both doors of the personnel airlock being open. The Applicability of CTS 3.9.12 includes CORE ALTERATIONS or movement of irradiated fuel within the containment with the containment equipment hatch open. CTS 3.9.12 Action b provides the actions when one Spent Fuel Pool Area EVS train is inoperable during CORE

DISCUSSION OF CHANGES
ITS 3.7.13, SPENT FUEL POOL AREA EMERGENCY VENTILATION SYSTEM (EVS)

ALTERATIONS or movement of irradiated fuel within the containment with the containment equipment hatch open. CTS 3.9.12 Action c, in part, provides the actions when both Spent Fuel Pool Area EVS trains are inoperable during CORE ALTERATIONS or movement of irradiated fuel within the containment with the containment equipment hatch open. ITS 3.7.13 does not include Spent Fuel Pool EVS requirements during CORE ALTERATIONS or movement of irradiated fuel within the containment with the containment equipment hatch open. This changes the CTS by deleting the requirements for the Spent Fuel Pool EVS to be OPERABLE during CORE ALTERATIONS or movement of irradiated fuel within the containment with the containment equipment hatch open.

The purpose of the allowance in CTS 3.9.12 is to allow both doors of the personnel air lock to be open, as allowed in CTS 3.9.4 (ITS 3.9.3), and not require declaring both Spent Fuel Pool Area EVS trains inoperable due to the inability to meet CTS 4.9.12.1, the Surveillance that ensures the boundary is capable of maintaining a negative pressure. This allowance was added to the CTS by License Amendment 251, approved by the NRC on February 14, 2002. All of the above described CTS requirements were added as part of this amendment. However, the allowance can only be used after the reactor has been shutdown for 72 hours, since CTS 3.9.3 does not allow any irradiated fuel movement until the reactor has been shutdown for 72 hours. CTS 3.9.4 provides the requirements for containment penetrations during movement of irradiated fuel assemblies in the containment, and the equipment hatch and air lock doors are covered by CTS 3.9.4. However, as part of this ITS conversion, the Applicability of CTS 3.9.4 has been changed (as shown in ITS 3.9.3) to only include "recently" irradiated fuel assembly movement in the containment. As described in the ITS 3.9.3 Bases, the term "recently" means fuel that has occupied part of a critical reactor core within the previous 72 hours. Thus, after the reactor has been shutdown for $\geq$ 72 hours, ITS 3.9.3 is no longer applicable and the containment equipment hatch and air lock doors can be opened. The justification for the CTS 3.9.4 (ITS 3.9.3) Applicability change is described in ITS 3.9.3 DOC L01. If the containment equipment hatch or air lock doors are opened anytime after the reactor has been shutdown for $\geq$ 72 hours, the spent fuel pool area negative pressure boundary extends to include the inside of the containment pressure vessel. The Note to ITS LCO 3.7.13 provides adequate administrative controls to ensure that in this case (i.e., the containment equipment hatch and air lock doors opened), the negative pressure boundary can be properly restored. Therefore, this change is considered acceptable. This change is designated as less restrictive because the ITS LCO requirements are applicable in fewer operating conditions than in the CTS.

L04 *(Category 4 – Relaxation of Required Action)* When a Spent Fuel Pool Area EVS train is inoperable, CTS 3.9.12 Action a allows fuel movement in the spent fuel pool to continue, provided the OPERABLE Spent Fuel Pool Area EVS train is in operation. No time is provided to restore the inoperable train prior to requiring the OPERABLE train to be in operation. ITS 3.7.13 ACTION A allows 7 days to restore an inoperable Spent Fuel Pool Area EVS train prior to requiring the OPERABLE train to be placed in operation. This changes the CTS by allowing 7 days to restore an inoperable Spent Fuel Pool Area EVS train prior to placing the OPERABLE train in operation.

DISCUSSION OF CHANGES
ITS 3.7.13, SPENT FUEL POOL AREA EMERGENCY VENTILATION SYSTEM (EVS)

The purpose of CTS 3.9.12 Action a is to place the Spent Fuel Pool Area EVS in the condition assumed in the accident analysis. This change is acceptable because the requirements continue to ensure that the structures, systems, and components are maintained in the MODES and other specified conditions assumed in the safety analyses and licensing basis. During this additional 7 day period, one train of the Spent Fuel Pool Area EVS remains OPERABLE and capable of performing its assumed safety function. Furthermore, this 7 day time is consistent with the time allowed for other ventilation system Technical Specifications when one ventilation train is inoperable (e.g., CTS 3.6.5.1 and ITS 3.7.12). 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 4 – Relaxation of Required Action)* CTS 3.9.12 Actions a and c provide an option that when one or both Spent Fuel Pool Area EVS trains are inoperable, to immediately suspend fuel movement and crane operations with loads over the spent fuel pool. Under similar conditions, ITS 3.7.13 Required Actions B.2 and C.1 require immediate suspension of movement of irradiated fuel assemblies in the spent fuel pool. This changes the CTS by deleting the requirement to suspend non-irradiated fuel assembly movement and to suspend crane operations over the spent fuel pool.

The purpose of CTS 3.9.12 Actions a and c is to preclude a fuel handling accident from occurring when the initial conditions for that accident are not met. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The only initiator to a fuel handling accident assumed in the accident analysis is the damaging of a single irradiated fuel assembly. Damaging a fuel assembly which has not been irradiated has no significant radiological effects and is not assumed in the fuel handling accident analysis. Therefore, stopping the handling of fuel assemblies which have not been irradiated is not required. The dropping of loads onto fuel assemblies in the spent fuel pool is not an initiator that is assumed in the fuel handling accident analysis. The movement of heavy loads is addressed by the Davis-Besse response to NUREG 0612, "Control of Heavy Loads at Nuclear Power Plants," and Generic Letter 81-07. Therefore, these activities are not restricted in the Technical Specifications. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L06 *(Category 7 – Relaxation Of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.9.12.1 requires verification that each Spent Fuel Pool Area EVS train can maintain $\geq$ 0.125 inches vacuum water gauge relative to the outside atmosphere at least once per Refueling Interval (i.e., 24 months). ITS SR 3.7.13.4 requires this same test, however it is required to be performed every 24 months "on a STAGGERED TEST BASIS." This changes the CTS by requiring the test to be performed using each Spent Fuel Pool Area EVS train at least once per 48 months.

The purpose of the CTS 4.9.12.1 is to ensure the integrity of the spent fuel pool area boundary. This change is acceptable because the new Surveillance

DISCUSSION OF CHANGES
ITS 3.7.13, SPENT FUEL POOL AREA EMERGENCY VENTILATION SYSTEM (EVS)

Frequency provides an acceptable level of equipment reliability. The change is acceptable since the proposed Surveillance Frequency will continue to require performance of the test every 24 months. This will ensure the spent fuel pool area boundary integrity is maintained. The status of the integrity of the spent fuel pool area boundary can be determined with either Spent Fuel Pool Area EVS train. ITS SR 3.7.13.3 requires the performance of a test to ensure each Spent Fuel Pool Area EVS 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 Spent Fuel Pool Area can be maintained at the proper negative pressure will only be required with one train in operation. This change is designated as less restrictive because the Surveillance will only be required to be performed on one Spent Fuel Pool Area EVS train each Surveillance interval instead of on both Spent Fuel Pool Area EVS trains.

L07 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.9.12.2 requires verification of the automatic actuation of the Spent Fuel Pool Area EVS trains on a fuel storage area high radiation "test" signal. ITS SR 3.7.13.3 specify that the signal may be from either an actual or simulated (i.e., test) signal. This changes the CTS by explicitly allowing the use of either an actual or simulated signal for the test. The change to remove the specific type of actuation signal (i.e., fuel storage area high radiation) to be used for this SR is discussed in DOC LA04.

The purpose of CTS 4.9.12.2 is to ensure that the Spent Fuel Pool Area EVS trains operate correctly upon receipt of an actuation signal. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. Equipment cannot discriminate between an "actual," "simulated," or "test" signal and, therefore, the results of the testing are unaffected by the type of signal used to initiate the test. This change allows taking credit for unplanned actuation if sufficient information is collected to satisfy the Surveillance test requirements. The change also allows a simulated signal to be used, if necessary. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L08 *(Category 7 – Relaxation Of Surveillance Frequency, Non-24 Month Type Change)* CTS 4.6.5.1.a states that each EVS train shall be demonstrated OPERABLE at least once every 31 days "on a STAGGERED TEST BASIS" by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the train operates for a least 15 minutes. ITS SR 3.7.13.1 requires a similar test every 31 days, but does not include the "STAGGERED TEST BASIS" requirement. This changes the CTS by deleting the requirement to test on a STAGGERED TEST BASIS.

The purpose of CTS 4.6.5.1.a is to demonstrate the OPERABILITY of the EVS trains. This change is acceptable because the new Surveillance Frequency provides an acceptable level of equipment reliability. This change deletes the requirement to perform CTS 4.6.5.1.a on a STAGGERED TEST BASIS. The intent of a requirement for staggered testing is to increase reliability of the

DISCUSSION OF CHANGES
ITS 3.7.13, SPENT FUEL POOL AREA EMERGENCY VENTILATION SYSTEM (EVS)

component/system being tested. A number of studies have been performed that demonstrate that staggered testing has negligible impact on component reliability. These analytical and subjective analyses have determined that staggered testing 1) is operationally difficult, 2) has negligible impact on component reliability, 3) has no impact on failure frequency, 4) introduces additional stress on components potentially causing increased component failures rates and component wearout, 5) results in reduced redundancy testing, and 6) increases likelihood of human error by increasing testing intervals. Therefore, the EVS staggered testing requirements have been deleted. This change is designated as less restrictive because the intervals between performances of the Surveillances for the two EVS trains can be larger or smaller under the ITS than under the CTS.

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

CTS

Spent Fuel Pool Area EVS ~~FSPVS~~ 1
3.7.13

3.7 PLANT SYSTEMS

3.7.13 Spent Fuel ~~Storage~~ Pool Area Emergency Ventilation System (~~FSPVS~~ EVS) 1

3.9.12 LCO 3.7.13 ~~[Two]~~ Spent Fuel Pool Area EVS ~~FSPVS~~ trains shall be OPERABLE. 2 1

-----NOTE-----
The spent fuel pool area negative pressure ~~fuel building~~ boundary may be opened ~~intermittently~~ under administrative control. 1 4

APPLICABILITY: ~~[MODES 1, 2, 3, and 4,]~~ 3
During movement of ~~[recently]~~ irradiated fuel assemblies in the spent fuel pool ~~building~~. 2 1

ACTIONS

Action d

-----NOTE-----
LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Spent Fuel Pool Area EVS ~~FSPVS~~ train inoperable. (DOC L04)	A.1 Restore Spent Fuel Pool Area EVS ~~FSPVS~~ train to OPERABLE status.	7 days
~~B. Two FSPVS 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~~

Row A: 1. Row B: 3.

CTS

Spent Fuel Pool Area EVS FSPVS 1
3.7.13

ACTIONS (continued)

CTS	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 FSPVs trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours]	3
B Action a, Action b	B D. Required Action and associated Completion Time of Condition A not met ~~during movement of [recently] irradiated fuel assemblies in the fuel building~~.	B D.1 Place OPERABLE FSPVS Spent Fuel Pool Area EVS train in operation. OR B D.2 Suspend movement of ~~[recently]~~ irradiated fuel assemblies in the spent fuel ~~building~~ pool.	Immediately Immediately	3 1 2 3 2 1
Spent Fuel Pool Area EVS C Action c	C E. Two FSPVS Spent Fuel Pool Area EVS trains inoperable ~~during movement of [recently] irradiated fuel assemblies in the fuel building~~.	C E.1 Suspend movement of ~~[recently]~~ irradiated fuel assemblies in the spent fuel ~~building~~ pool.	Immediately	3 1 2 1

SURVEILLANCE REQUIREMENTS

CTS	SURVEILLANCE	FREQUENCY	
4.6.5.1.a	SR 3.7.13.1 [Operate each FSPVS Spent Fuel Pool Area EVS train for ~~[≥ 10 continuous hours with the heaters operating or (for systems without heaters)~~ ≥ 15 minutes].	31 days [	2 1

CTS

Spent Fuel Pool Area EVS FSPVS 3.7.13 (1)

SURVEILLANCE REQUIREMENTS (continued)

CTS	SURVEILLANCE		FREQUENCY	
4.6.5.1.b	SR 3.7.13.2	[Perform required ~~FSPVS~~ Spent Fuel Pool Area EVS filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)].	In accordance with the [VFTP]]	(2) (1)
4.9.12.2	SR 3.7.13.3	[Verify each ~~FSPVS~~ Spent Fuel Pool Area EVS train actuates on an actual or simulated actuation signal.	[~~18~~ 24] months]	(2) (1)
4.9.12.1	SR 3.7.13.4	Verify one ~~FSPVS~~ Spent Fuel Pool Area EVS train can maintain a negative pressure ~~≤ [ ]~~ ≥ 0.125 inches water gauge ~~with respect to atmospheric pressure during the [post accident] mode of operation at a flow rate ≤ [3000] cfm.~~ relative to outside atmosphere	[~~18~~ 24] months on a STAGGERED TEST BASIS	(1) (2) (1)
4.6.5.1.d.3	SR 3.7.13.5	[Verify each ~~FSPVS~~ Spent Fuel Pool Area EVS filter cooling bypass damper can be opened.	[~~18~~ 24] months]	(2) (1)

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.13, SPENT FUEL POOL AREA EMERGENCY VENTILATION SYSTEM (EVS)

1. Changes are made to the ISTS Specification which reflect plant specific nomenclature.

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

3. The Spent Fuel Pool Area Emergency Ventilation System (EVS) is not used to provide fission product removal associated with ECCS leaks due to a loss of coolant accident. The Station EVS is used for this function, as described in ITS 3.7.12. Therefore, the bracketed MODES 1, 2, 3, and 4 requirements have been deleted and subsequent ACTIONS renumbered. Furthermore, due to this deletion, the words in the Conditions concerning movement of fuel is not necessary and has been deleted.

4. ISTS LCO 3.7.13 Note allows the fuel building boundary to be opened "intermittently" under administrative control. This Note is described in the LCO Bases, and includes actions to be taken if the boundary is opened for reasons other than entry and exit through doors. When the boundary is opened for these reasons (i.e., for reasons other than entry and exit through doors), it is not necessarily being opened "intermittently." The reasons could include opening a penetration or creating a new penetration through a wall, and this might not be considered "intermittent." Furthermore, Davis-Besse current licensing basis allows the air lock doors to both be opened and maintained open, provided one of the doors is capable of being closed and a designated individual is assigned to close the door if necessary. When using this allowance, Davis-Besse might not meet the "intermittent" requirement since the doors could be opened for an extended time period. The ITS Bases clearly describes the conditions that must be met to use the Note allowance. Therefore, the term "intermittently" is unnecessary and has been deleted.

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

All changes are 1 unless otherwise noted

Spent Fuel Pool Area EVS

~~FSPVS~~ 2
B 3.7.13

B 3.7 PLANT SYSTEMS

Spent Fuel Pool Area Emergency Ventilation System (EVS) 2

B 3.7.13 ~~Fuel Storage Pool Ventilation System (FSPVS)~~

BASES

BACKGROUND

Spent Fuel Pool Area EVS

The ~~FSPVS~~ provides negative pressure in the ~~fuel storage~~ area, and filters airborne radioactive particulates from the area of the fuel pool following a fuel handling accident.

spent

spent fuel pool

With the containment equipment hatch open, the spent fuel pool area negative pressure boundary extends to include the inside of the containment pressure vessel.

The ~~FSPVS~~ consists of portions of the normal Fuel Handling Area Ventilation System (FHAVS), the ~~s~~tation Emergency Ventilation System (EVS), ductwork bypasses, and dampers. The portion of the normal FHAVS used by the ~~FSPVS~~ consists of ducting between the spent fuel pool and the normal FHAVS exhaust fans or dampers, and redundant radiation detectors installed close to the suction end of the FHAVS exhaust fan ducting. The portion of the Station EVS used by the ~~FSPVS~~ consists of two independent, redundant trains. Each train consists of a ~~heater,~~ prefilter, ~~or~~ high efficiency particulate air (HEPA) filter, activated charcoal adsorber section for removal of gaseous activity (principally iodines), and fan. Ductwork, valves or dampers, and instrumentation also form part of the system. Two dampers ~~isolation valves~~ are installed in series in the ductwork between the FHAVS and the Station EVS to provide isolation of the Station EVS from the FHAVS on an ~~Engineered~~ Safety Features ~~a~~ctuation ~~s~~ignal. These dampers ~~valves~~ are normally open ~~opened prior to fuel handling operations [involving handling recently irradiated fuel]~~. The Station EVS is the subject of LCO 3.7.12, "Emergency Ventilation System (EVS)," and is fully described in the Station UFSAR, Section ~~[~~6.2.3~~]~~ (Ref. 1) ~~Reference 12~~. A ductwork bypass with redundant dampers connects the FHAVS to the Station EVS. 2 3 5

During normal operation, the exhaust from the fuel handling area is passed through the FHAVS exhaust filter and is discharged through the station vent stack. In the event of a fuel handling accident, the radiation detectors (one per ~~EVS~~ train), located at the suction of the FHAVS exhaust fan ducting, send signals to isolate the FHAVS supply and exhaust fans and ductwork, open the redundant dampers in the bypass ductwork, and start the Station EVS fans. The Station EVS fans pull the air from the fuel handling area, creating a negative pressure, and discharge the filtered air to the station vent.

INSERT 1

~~The FHAVS is discussed in the FSAR, Sections [6.2.3], [9.4.2], and [15.4.7] (Refs. 1, 2, and 3, respectively), because it may be used for normal as well as post accident, atmospheric cleanup functions.~~

1 **INSERT 1**

Specifically, when the Fuel Handling Exhaust – High Radiation instrumentation detects a radiation level in excess of the high radiation setpoint, a signal from the applicable radiation monitor is sent to the logic for the FHAVS and the Spent Fuel Pool Area EVS. The FHAVS supply and exhaust fans will trip and their respective inlet and outlet dampers will isolate. The Fuel Handling Area to Emergency Ventilation dampers open and the Station EVS fans start. This will maintain a negative pressure in the Spent Fuel Pool Area and filter the exhaust through charcoal filters and HEPA filters. Filtration of the exhaust ensures the accident dose at the site boundary will be well below the 10 CFR 100 limits and the control room dose will be within the 10 CFR 50, GDC 19 limits.

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All changes are 1 unless otherwise noted

Spent Fuel Pool Area EVS ~~FSPVS~~
B 3.7.13 2

BASES

APPLICABLE SAFETY ANALYSES

Spent Fuel Pool Area EVS

(outside containment)

the Spent Fuel Pool Area EVS actuation aligns the ventilation flow path through the HEPA and charcoal filters prior to discharging to the station vent

The ~~FSPVS~~ design basis is established by the consequences of the limiting Design Basis Accident (DBA), which is a fuel handling accident ~~[involving handling recently irradiated fuel]~~. The analysis of the fuel handling accident, given in Reference ~~[3]~~ 2, assumes that a certain number of fuel rods in an assembly are damaged. The DBA analysis of the fuel handling accident ~~[involving handling recently irradiated fuel]~~ assumes that ~~only one train of the FSPVS is functional due to a single failure that disables the other train. The accident analysis accounts for the reduction in airborne radioactive material provided by the remaining one train of this filtration system~~. These assumptions and the analysis follow the guidance provided in Regulatory Guide 1.25 (Ref. ~~[4]~~ 3). 3 3

Spent Fuel Pool Area EVS

The ~~FSPVS~~ satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii). 3

Spent Fuel Pool Area EVS

LCO

~~[Two]~~ independent and redundant trains of the ~~FSPVS~~ are required to be OPERABLE to ensure that at least one 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 area exceeding 10 CFR 100 (Ref. ~~[5]~~ 4) limits in the event of a fuel handling accident ~~[involving handling recently irradiated fuel]~~. 3

Spent Fuel Pool Area EVS

ensure offsite and control room dose limits are not exceeded

The ~~FSPVS~~ is considered OPERABLE when the individual components necessary to ~~control operator exposure in the fuel handling building~~ are OPERABLE in both trains. An ~~FSPVS~~ train is considered OPERABLE when its associated:

Spent Fuel Pool Area EVS

a ~~1~~. Fan is OPERABLE~~,~~ ; 7 4

b ~~2~~. HEPA filter and charcoal adsorber are not excessively restricting flow, and are capable of performing their filtration functions~~, and~~ ; 7 4

c ~~3~~. ~~[Heater, demister,]~~ ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained. 7

spent fuel pool area negative pressure

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. 2 2 2

INSERT 1A

spent fuel pool area negative pressure boundary

1 **INSERT 1A**

In addition, when the spent fuel pool area negative pressure boundary includes the containment (i.e., when the containment equipment hatch is open - hatch not closed and held in place by four bolts) and the boundary is open due to both containment personnel air lock doors being open, then the administrative controls also include ensuring at least one of the air lock doors is capable of being closed and the above described dedicated individual must be immediately outside the personnel air lock.

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All changes are 1 unless otherwise noted

Spent Fuel Pool Area EVS ~~FSPVS~~
B 3.7.13 2

BASES

APPLICABILITY

~~[In [MODES 1, 2, 3, and 4,] the FSPVS is required to be OPERABLE to provide fission product removal associated with ECCS leaks due to a loss of coolant accident (refer to LCO 3.7.12) for units that use this system as part of their EVSs.~~ 2

During movement of ~~[recently]~~ irradiated fuel assemblies in the spent fuel pool ~~fuel handling area~~, the Spent Fuel Pool Area EVS ~~FSPVS~~ is always required to be OPERABLE to mitigate the consequences of a fuel handling accident. 3 2

~~In MODES 5 and 6, the FSPVS is not required to be OPERABLE since the ECCS is not required to be OPERABLE.]~~ 2

ACTIONS

LCO 3.0.3 is not applicable while in MODE 5 or 6. However, since irradiated fuel assembly movement can occur in MODE 1, 2, 3, or 4, the ACTIONS have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 5 or 6, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, 3, or 4, the fuel movement is independent of reactor operations. Entering LCO 3.0.3, while in MODE 1, 2, 3, or 4 would require the unit to be shutdown unnecessarily.

A.1

With one Spent Fuel Pool Area EVS ~~FSPVS~~ train inoperable, action must be taken to restore the inoperable Spent Fuel Pool Area EVS train to 6 OPERABLE status within 7 days. During this time period, the remaining OPERABLE train is adequate to perform the Spent Fuel Pool Area EVS ~~FSPVS~~ function. However, the overall reliability is reduced because a single failure in the OPERABLE Spent Fuel Pool Area EVS ~~FSPVS~~ train could result in a loss of Spent Fuel Pool Area EVS ~~FSPVS~~ function~~ing~~. The 7 day Completion Time is based on the risk from an event occurring requiring the inoperable Spent Fuel Pool Area EVS ~~FSPVS~~ train, and ability of the remaining Spent Fuel Pool Area EVS ~~FSPVS~~ train to provide the required protection. 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 even of an intentional or unintentional entry into Condition B.~~
~~-----~~ 2

All changes are 1 unless otherwise noted

~~FSRVS~~ Spent Fuel Pool Area EVS
B 3.7.13 2

BASES

ACTIONS (continued)

If the fuel building boundary is inoperable in MODE 1, 2, 3, or 4, the FSPVS trains cannot perform their intended functions. Actions must be taken to restore an OPERABLE fuel building boundary within 24 hours. During the period that the fuel building boundary is inoperable, appropriate compensatory measures [consistent with the intent, as applicable, of GDC 19, 60, 61, 63, 64 and 10 CFR 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. 2

[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 FSPVS 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 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.] 2

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

If the inoperable ~~FSRVS~~ Spent Fuel Pool Area EVS train cannot be restored to OPERABLE status within the required Completion Time, ~~during movement of [recently] irradiated fuel assemblies in the fuel building~~ the OPERABLE ~~FSRVS~~ 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 failures will be readily detected. 2 2 3 2 3

If the system is not placed in operation, this action requires suspension of ~~[recently]~~ irradiated fuel movement in the spent fuel pool, which precludes a fuel handling accident ~~[involving handling recently irradiated fuel]~~. This action does not preclude the movement of fuel assemblies to a safe position. 2 6 2

All changes are 1 unless otherwise noted

Spent Fuel Pool Area EVS ~~FSRVS~~
B 3.7.13 2

BASES

ACTIONS (continued)

C ~~E~~.1 2

When two trains of the ~~FSRVS~~ Spent Fuel Pool Area EVS are inoperable ~~during movement of [recently] irradiated fuel assemblies in the fuel building~~, the unit must be placed in a condition in which the LCO does not apply. This LCO involves immediately suspending movement of ~~[recently]~~ irradiated fuel assemblies in the spent fuel ~~building~~ pool. This does not preclude the movement of fuel to a safe position. 3 2 3 2

SURVEILLANCE REQUIREMENTS

~~[~~SR 3.7.13.1 3

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 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~~ INSERT 2 for ≥ 15 minutes ~~to~~ s demonstrate the function of ~~the system~~ each train.~~]~~ The 31 day Frequency is based on the known reliability of the equipment and the two train redundancy available.~~]~~ 2 2 3

~~[~~SR 3.7.13.2 3

This SR verifies that the required ~~FSRVS~~ Spent Fuel Pool Area EVS 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~~]~~. ~~]~~ 3 5 3

3

~~[~~SR 3.7.13.3

This SR verifies that each ~~FSRVS~~ Spent Fuel Pool Area EVS train ~~starts and operates~~ actuates on an actual or simulated actuation (i. e., Fuel Handling Exhaust – High Radiation) signal. ~~The 18 month Frequency is consistent with that specified in Reference 6.~~ INSERT 3 ~~]~~ 2 3

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1 **INSERT 2**

Initiating each train from the control room, with flow through the HEPA filters and charcoal adsorbers, and operating

1 **INSERT 3**

This test includes ensuring the FHAVS supply and exhaust fans trip and their respective inlet and outlet dampers close, the Fuel Handling Area to Emergency Ventilation dampers open, and the Station EVS fans start. Operating experience has shown that these components usually pass the Surveillance when performed at the 24 month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.

All changes are 1 unless otherwise noted

Spent Fuel Pool Area EVS ~~FSPVS~~ 2
B 3.7.13

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.13.4

spent fuel pool area negative pressure boundary

spent fuel pool area negative pressure boundary (which includes the containment if the containment equipment hatch is open)

outside atmosphere

Spent Fuel Pool Area EVS

spent fuel pool area negative pressure boundary

This SR verifies the integrity of the ~~fuel handling area~~. The ability of the ~~fuel handling area~~ to maintain a negative pressure, with respect to ~~potentially uncontaminated adjacent areas~~, is periodically tested to verify proper function of the ~~FSPVS~~. During the [post accident] mode of operation, the ~~FSPVS~~ is designed to maintain a slight negative pressure in the ~~fuel handling area~~ to prevent unfiltered LEAKAGE. ~~The FSPVS is designed to maintain this negative pressure at a flow rate of ≤ [3000] cfm to the fuel handling area.~~ The Frequency of ~~[18]~~ 24 months on a STAGGERED TEST BASIS is consistent with industry practice. 2 3

SR 3.7.13.5

2 cooling

(i.e., EVS fans cross tie dampers, CV5056 and CV5057)

each Spent Fuel Pool Area EVS

Spent Fuel Pool Area EVS

Operating ~~the FSPVS~~ filter bypass damper is necessary to ensure that the system functions properly. The OPERABILITY of the ~~FSPVS~~ filter 2 cooling bypass damper is verified if it can be opened. ~~A Frequency of [18] months is specified in Reference 6.~~ INSERT 4

REFERENCES

1. U FSAR, Section [6.2.3]. 3

~~2. FSAR, Section [9.4.2].~~ 3

2 ~~3~~. U FSAR, Section [15.4.7]. 3

3 ~~4~~. Regulatory Guide 1.25.

4 ~~5~~. 10 CFR 100.11.

~~6. Regulatory Guide 1.52, Rev. [2].~~

1 **INSERT 4**

Operating experience has shown that these components usually pass the Surveillance when performed at the 24 month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.13 BASES, SPENT FUEL POOL AREA EMERGENCY VENTILATION SYSTEM (EVS)

1. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.
2. Changes are made to reflect changes made to the Specification.
3. The brackets have been removed and the proper plant specific information/value has been provided.
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.
5. Typographical error corrected.
6. Changes made to reflect the Specification.
7. Changes made to be consistent with other Specifications.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.13, SPENT FUEL POOL AREA EMERGENCY VENTILATION SYSTEM (EVS)

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 14

ITS 3.7.14, SPENT FUEL POOL WATER LEVEL

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

A01

ITS 3.7.14

ITS

REFUELING OPERATIONS

STORAGE POOL WATER LEVEL

LIMITING CONDITION FOR OPERATION

LCO 3.7.14 3.9.11 As a minimum, 23 feet of water shall be maintained over the top of irradiated fuel assemblies seated in the storage racks in the spent fuel pool.

During movement of irradiated fuel assemblies in the fuel storage pool L01

APPLICABILITY: ~~Whenever irradiated fuel assemblies are in the spent fuel pool~~.

L02

ACTION:

irradiated

immediately A02

ACTION A With the requirement of the specification not satisfied, suspend all movement of ~~fuel and crane operations with loads in the fuel storage area~~ and ~~restore the water level to within its limit within 4 hours~~. The provisions of Specification 3.0.3 are not applicable.

L01

SURVEILLANCE REQUIREMENTS

SR 3.7.14.1 4.9.11 The water level in the spent fuel pool shall be determined to be at least its minimum required depth at least once per 7 days ~~when irradiated fuel assemblies are in the spent fuel pool~~.

L01

DISCUSSION OF CHANGES
ITS 3.7.14, SPENT FUEL POOL WATER LEVEL

ADMINISTRATIVE CHANGES

A01 In the conversion of the Davis-Besse 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-1430, Rev. 3.1, "Standard Technical Specifications-Babcock and Wilcox 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 3.9.11 Action states that with the requirement of the Specification not satisfied, suspend all movement of fuel. ITS 3.7.14 Required Action A.1 requires the immediate suspension of movement of irradiated fuel assemblies in the fuel storage pool. This changes the CTS by explicitly specifying that the compensatory action to suspend all movement of fuel assemblies requires an immediate response. Other changes to this CTS Action are discussed in DOCs L01 and L02.

The purpose of the CTS 3.9.11 Action to suspend all movement of fuel assemblies is to help ensure the assumptions of a fuel handling accident are met. The current action does not specify a time; however it implies that the action is immediate. This change is acceptable because it only provides clarification that the compensatory action requires an immediate response. This change is designated as administrative because it does not result in a technical change to the CTS.

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

None

LESS RESTRICTIVE CHANGES

L01 *(Category 2 – Relaxation of Applicability)* CTS 3.9.11 states that the requirements on storage pool water level are applicable "Whenever irradiated fuel assemblies are in the spent fuel pool." CTS 4.9.11 requires the water level in the spent fuel pool to be verified every 7 days "when irradiated fuel assemblies are in the spent fuel pool." ITS 3.7.14 is applicable "During movement of irradiated fuel assemblies in the spent fuel pool." ITS SR 3.7.14.1 requires

DISCUSSION OF CHANGES
ITS 3.7.14, SPENT FUEL POOL WATER LEVEL

verification of the spent fuel pool water level every 7 days. This changes the CTS by restricting the Applicability of the spent fuel pool water level Specification and performance of the Surveillance to only when there is a potential for a fuel handling accident, i.e., during the movement of irradiated fuel assemblies in the fuel storage pool. In addition, since the Applicability is now limited to when irradiated fuel is being moved, the CTS Action to restore water level to within its limit within 4 hours after movement of fuel has been suspended has also been deleted.

The purpose of CTS 3.9.11 is to ensure that the minimum fuel storage pool water level assumption in the fuel handling accident analysis is met. This change is acceptable because the requirements continue to ensure that the structures, systems, and components are maintained in the MODES and other specified conditions assumed in the safety analyses and licensing basis. The fuel handling accident analysis (outside containment) assumes that a single fuel assembly is damaged. A key assumption in the analysis is that there is ≥ 23 feet of water over the damaged assembly, as this depth is directly related to the clean up of the fission products before release to the spent fuel pool area atmosphere. A fuel handling accident is only assumed to occur when an irradiated fuel assembly is being moved. Therefore, the ITS imposes the controls on minimum spent fuel pool water level during the movement of irradiated fuel 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 4 – Relaxation of Required Action)* CTS 3.9.11 Action states that when the spent fuel pool water level is not met, suspend all movement of fuel and crane operations with loads in the spent fuel pool area. ITS 3.7.14 Required Action A.1 states that when spent fuel pool water level is not within limit, immediately suspend movement of irradiated fuel assemblies in the spent fuel pool. This changes the CTS by deleting the requirement to suspend non-irradiated fuel assembly movement and to suspend crane operations over the spent fuel pool.

The purpose of the CTS 3.9.11 Action is to preclude a fuel handling accident from occurring when the initial conditions for that accident are not met. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The only initiator to a fuel handling accident assumed in the accident analysis is the damaging of a single irradiated fuel assembly. Damaging a fuel assembly which has not been irradiated has no significant radiological effects and is not assumed in the fuel handling accident analysis. Therefore, stopping the handling of fuel assemblies which have not been irradiated when the spent fuel pool water level is less than the limit is not required. The dropping of loads onto fuel assemblies in the spent fuel pool is not an initiator that is assumed in the fuel handling accident analysis. The movement of heavy loads is addressed by the Davis-Besse response to NUREG 0612, "Control of Heavy Loads at Nuclear Power Plants," and Generic Letter 81-07. Therefore, these activities are not restricted in the Technical Specifications when the spent fuel pool water level is not within limit. This change is designated as

DISCUSSION OF CHANGES
ITS 3.7.14, SPENT FUEL POOL WATER LEVEL

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

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

CTS

All changes are 1 unless otherwise noted

3.7 PLANT SYSTEMS

3.7.14 Spent Fuel ~~Storage~~ Pool Water Level

3.9.11	LCO 3.7.14	The spent fuel ~~storage~~ pool water level shall be ≥ 23 ft over the top of irradiated fuel assemblies seated in the storage racks.
	APPLICABILITY:	*During movement of irradiated fuel assemblies in spent fuel ~~storage~~ pool.*

ACTIONS

	CONDITION	REQUIRED ACTION		COMPLETION TIME
Action	A. Spent 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 spent fuel ~~storage~~ pool.	 Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY
4.9.11	SR 3.7.14.1	Verify the spent fuel ~~storage~~ pool water level is ≥ 23 ft above the top of irradiated fuel assemblies seated in the storage racks.	7 days

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.14, SPENT FUEL POOL WATER LEVEL

1. Changes are made to the ISTS Specification which reflect plant specific nomenclature.

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

All changes are 1 unless otherwise noted

 5

B 3.7 PLANT SYSTEMS

B 3.7.14 Spent Fuel Storage Pool Water Level 5

BASES

BACKGROUND

The minimum water level in the spent fuel storage pool meets the assumption 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 U FSAR, Section [9.1.2], Reference 1. The Spent Fuel Pool Cooling and Cleanup System is given in the U FSAR, Section [9.1.3] (Ref. 2). The assumptions of the fuel handling accident are given in the U FSAR, Section [15.4.7] (Ref. 3). 2 2 2

APPLICABLE SAFETY ANALYSES

The minimum water level in the spent fuel storage pool meets the assumptions of the fuel handling accident described in Regulatory Guide 1.25 (Ref. 4). The resultant 2 hour thyroid dose to a person at the exclusion area boundary is below 10 CFR 100 (Ref. 5) guidelines.

According to Reference 4, there is 23 ft of water between the top of the damaged fuel bundle and the fuel pool surface for a fuel handling accident. With 23 ft, the assumptions of Reference 4 can be used directly. In practice, the 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 rack, however, there may be < 23 ft above the top of the fuel bundle and the surface, by the width of the bundle. ~~To offset this small nonconservatism, the analysis assumes that all fuel rods fail, although the analysis shows that only the first [few] rows fail from a hypothetical maximum drop.~~ INSERT 1

The spent fuel storage pool water level satisfies Criteria 2 and 3 of 10 CFR 50.36(c)(2)(ii). 5

LCO

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. 3

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.

1 **INSERT 1**

The fuel handling accident assumes the entire outer row of fuel rods in the assembly, 56 fuel rods out of 208 total fuel rods, suffer mechanical damage to the cladding.

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BASES

ACTIONS

A.1

Required Action A.1 is modified by a Note indicating that LCO 3.0.3 does not apply. 4

When the initial conditions for an accident cannot be met, immediate action must be taken to preclude the occurrence of an accident. With the spent fuel ~~storage~~ pool at less than the required level, the movement of irradiated fuel assemblies in the spent fuel ~~storage~~ pool is immediately suspended. This effectively precludes the occurrence of a fuel handling accident. In such a case, unit procedures control the movement of loads over the spent fuel. This does not preclude movement of a fuel assembly to a safe position. 1 3 1

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, in either case, inability to suspend movement of irradiated fuel assemblies is not sufficient reason to require a reactor shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.7.14.1

This SR verifies that 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 unit procedures and are acceptable, based on operating experience. 1 1

During refueling operations, the level in the spent fuel ~~storage~~ pool is at equilibrium with that in the refueling canal, and the level in the refueling canal is checked daily in accordance with SR 3.9.6.1. 1

REFERENCES

1. U FSAR, Section [9.1.2]
2. U FSAR, Section [9.1.3]
3. U FSAR, Section [15.4.7]
4. Regulatory Guide 1.25.
5. 10 CFR 100.11.

1 2

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.14 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 brackets have been removed and the proper plant specific information/value has been provided.

3. Changes made to be consistent with the Specification.

4. Editorial changes for clarity. The first paragraph, which describes the addition of the Note, has been combined with the paragraph describing the reason for the Note.

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

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.14, SPENT FUEL POOL WATER LEVEL

There are no specific NSHC discussions for this Specification.

ATTACHMENT 15

ITS 3.7.15, SPENT FUEL POOL BORON CONCENTRATION

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

ITS

Add proposed ITS 3.7.15

M01

DISCUSSION OF CHANGES
ITS 3.7.15, SPENT FUEL POOL BORON CONCENTRATION

ADMINISTRATIVE CHANGES

None

MORE RESTRICTIVE CHANGES

M01 The CTS does not have any requirements for the spent fuel pool boron concentration when fuel assemblies are stored in the spent fuel storage pool. ITS 3.7.15 requires the spent fuel pool boron concentration to be $\geq$ 630 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. An appropriate ACTION and Surveillance Requirement have also been added. This changes the CTS by incorporating the requirements of ITS 3.7.15.

The purpose of ITS 3.7.15 is to ensure the accident analysis assumptions concerning the boron concentration in the spent fuel pool are met. A fuel assembly could be inadvertently loaded into a spent fuel rack location not allowed by LCO 3.7.16 (e.g., an unirradiated fuel assembly or an insufficiently depleted fuel assembly). This accident is analyzed assuming the case of loading an unirradiated assembly of the highest permissible enrichment into one of the storage cells intended for burned fuel, or in an empty cell between other fresh assemblies in the checkerboard pattern. This change is acceptable since the minimum boron concentration required by this LCO will ensure that k_{eff} will not exceed 0.95 if a fuel assembly is misloaded as described above. 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

[Spent Fuel Pool Boron Concentration] 1
3.7.15

3.7 PLANT SYSTEMS

3.7.15 [Spent Fuel Pool Boron Concentration] 1

630

DOC M01 LCO 3.7.15 The spent fuel pool boron concentration shall be ≥ [~~500~~] ppm. 1

APPLICABILITY: 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.

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
DOC M01	A. Spent fuel 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 pool.	Immediately
		AND	
		A.2.1 Initiate action to restore spent fuel pool boron concentration to within limit.	Immediately
		OR	
		A.2.2 Initiate action to perform a fuel storage pool verification.	Immediately

CTS

 1

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY
DOC M01	SR 3.7.15.1	Verify the spent fuel pool boron concentration is within limit.	7 days

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.15, SPENT FUEL POOL BORON CONCENTRATION)

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

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

B 3.7 PLANT SYSTEMS

B 3.7.15 [Spent Fuel Pool Boron Concentration] (1)

BASES

BACKGROUND Mixed Zone Three Region, Checkerboard, or Homogenous Loading assembly INSERT 1	As described in ~~the following~~ LCO 3.7.16, "Spent Fuel ~~Assembly~~ Pool Storage," fuel assemblies are stored in the spent fuel pool racks [in a ~~"checkerboard"~~ pattern] in accordance with criteria based on [initial enrichment and ~~discharge~~ burnup]. ~~Although the water in the spent fuel pool is normally borated to ≥ [500] ppm, the criteria that limit the storage of a fuel assembly to specific rack locations are conservatively developed without taking credit for boron.~~ (2) (1) (2)
APPLICABLE SAFETY ANALYSES INSERT 2	~~A fuel assembly could be inadvertently loaded into a spent fuel rack location not allowed by LCO 3.7.16 (e.g., an unirradiated fuel assembly or an insufficiently depleted fuel assembly). This accident is analyzed assuming the extreme case of completely loading the spent fuel pool racks with unirradiated assemblies of maximum enrichment. Another type of postulated accident is associated with a fuel assembly that is dropped onto the fully loaded spent fuel pool storage rack. Either incident could have a positive reactivity effect, decreasing the margin to criticality. However, the negative reactivity effect of the soluble boron compensates for the increased reactivity caused by either one of the two postulated accident scenarios.~~ (2) The concentration of dissolved boron in the spent fuel ~~storage~~ pool satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii). (2)
LCO	The specified concentration ≥ 630 ~~[≤ [500]~~ ppm] of dissolved boron in the spent fuel ~~storage~~ pool preserves the assumption used in the analyses of the potential accident scenarios described above. This concentration of dissolved boron is the minimum required concentration for fuel assembly storage and movement within the spent fuel ~~storage~~ pool. (1) (2) (2)
APPLICABILITY	This LCO applies whenever fuel assemblies are stored in the spent fuel pool, until a ~~complete~~ spent fuel pool verification has been performed following the last movement of fuel assemblies in the spent fuel 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 movement in progress, there is no potential for a misloaded fuel assembly or a dropped fuel assembly. (4)

② **INSERT 1**

The high density spent fuel pool storage racks in the Spent Fuel Pool (SFP) are designed to assure that the effective neutron multiplication factor, k_{eff}, is ≤ 0.95 with the racks fully loaded with fuel of the highest anticipated reactivity and flooded with unborated water.

② **INSERT 2**

Reactivity effects of abnormal and accident conditions have been evaluated to assure that under credible abnormal and accident conditions, the reactivity will not exceed 0.95, with credit for soluble boron in the pool water. Assuring the presence of soluble poison during fuel handling operations precludes the possibility of the simultaneous occurrence of two independent accident conditions.

Three potential accident scenarios, misloaded fresh fuel assembly, mislocated fresh fuel assembly, and a dropped fuel assembly, were analyzed to determine the effect the accidents would have on the effective neutron multiplication factor, k_{eff}. The results of the analysis determined that a minimum boron concentration of 630 ppm in the SFP water is required to maintain k_{eff} at 0.945 for the worst-case accident scenario (i.e., a 5.05 weight percent enriched fresh fuel assembly misloaded in a Checkerboard pattern) (Ref. 1). The minimum boron concentration value of 630 ppm bounds all analyzed potential accident scenarios discussed below.

A misloaded fresh fuel assembly accident scenario analyzed misloading the assembly in the following five different locations: 1) misloading in the Mixed Zone Three Region (MZTR) inner rack 10x9; 2) misloading in the MZTR inner rack 10x9 (different location of a fresh assembly); 3) misloading in the MZTR side rack 10x8; 4) misloading in Homogeneous (45 BU) inner rack 10x9, and; 5) misloading in Checkerboard inner rack 10x9. The worst case scenario, misloading in Checkerboard inner rack 10x9, requires a minimum boron concentration of 627 ppm to assure that k_{eff} does not exceed 0.945.

The second potential accident scenario considers the mislocation of a fresh fuel assembly outside of a storage rack adjacent to other fuel assemblies. The worst case would be an assembly mislocated in a corner on the west side of the pool (next to MZTR outer rack 10x8 – 7x1). This scenario requires a minimum boron concentration of 448 ppm to assure that k_{eff} does not exceed 0.945.

The dropped fuel assembly accident considers three different scenarios: a dropped fuel assembly coming to rest horizontally on top of the rack; a dropped fuel assembly came to rest vertically into a location occupied by another assembly, and; dropping the fuel assembly into an unoccupied cell. In all cases, a minimum boron concentration of 53 ppm is adequate to assure that k_{eff} does not exceed 0.945.

BASES

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. 3

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 the fuel assemblies. This does not preclude movement of a fuel assembly to a safe position. The concentration of boron is restored simultaneously with suspending movement of the fuel assemblies. Alternatively, beginning a verification of the spent fuel pool 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. 2

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 operation. Therefore, inability to suspend movement of fuel assemblies is not a sufficient reason to require a reactor shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.7.15.1

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 incidents are fully addressed. The 7 day Frequency is appropriate because no major replenishment of pool water is expected to take place over a short period of time. 5 2

REFERENCES

~~None.~~ 1. UFSAR, Section 9.1.2.1. 2

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.15 BASES, SPENT FUEL POOL BORON CONCENTRATION

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

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

3. Editorial changes for clarity. The first paragraph, which describes the addition of the Note, has been combined with the paragraph describing the reason for the Note.

4. Changes made to be consistent with the Specification.

5. Change made to be consistent with the format of the ISTS Bases.

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.15, SPENT FUEL POOL BORON CONCENTRATION

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 16

ITS 3.7.16, SPENT FUEL POOL STORAGE

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

A01

ITS 3.7.16

ITS

REFUELING OPERATIONS

SPENT FUEL ASSEMBLY STORAGE

LIMITING CONDITION FOR OPERATION

LCO 3.7.16

3.9.13 Fuel assemblies stored in the spent fuel pool shall be placed in the spent fuel storage racks in accordance with the criteria shown in Figure 3.9-1.

APPLICABILITY: Whenever fuel assemblies are in the spent fuel pool.

ACTION:

ACTION A

With the requirements of the above specification not satisfied, suspend all ~~other~~ fuel movement within the spent fuel pool and move the non-complying fuel assemblies to allowable locations in accordance with Figure 3.9-1. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

A02

initiate immediate action to

A03

A04

SURVEILLANCE REQUIREMENTS

SR 3.7.16.1

4.9.13.1 Prior to storing a fuel assembly in the spent fuel pool, verify by administrative means that the initial enrichment and burnup of the fuel assembly are in accordance with Figure 3.9-1.

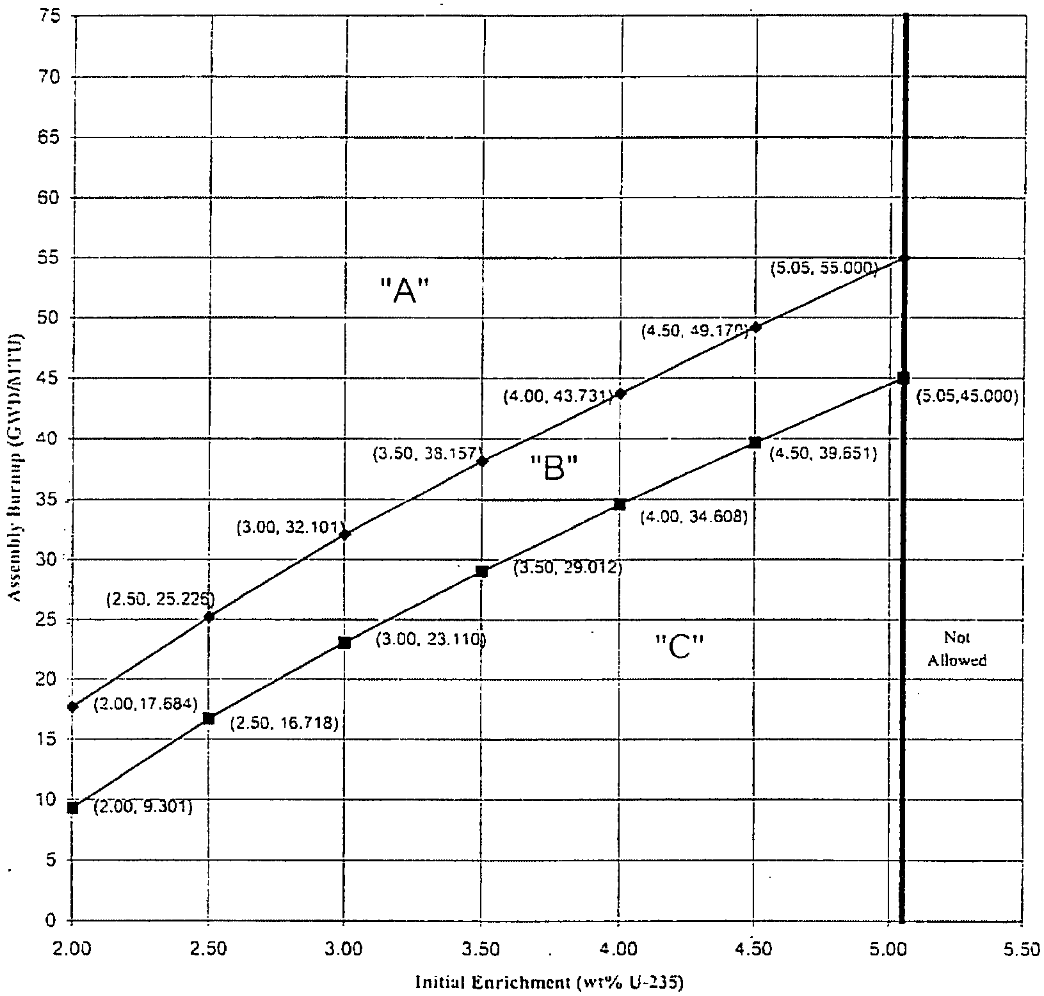
ITS

A01

ITS 3.7.16

Figure 3.9-1
Burnup vs Enrichment Curves
For the Davis-Besse High Density
Spent Fuel Pool Storage Racks

Figure 3.7.16-1



Notes: Fuel assemblies with initial enrichments less than 2 wt% U-235 will conservatively be required to meet the burnup requirements of 2.0 wt% U-235 assemblies. Loading pattern considerations applicable to Category "A", "B", and "C" assemblies are described in the Bases

DISCUSSION OF CHANGES
ITS 3.7.16, SPENT FUEL POOL STORAGE

ADMINISTRATIVE CHANGES

A01 In the conversion of the Davis-Besse 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-1430, Rev. 3.1, "Standard Technical Specifications-Babcock and Wilcox 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 CTS 3.9.13 Action, in part, states to suspend all other fuel movement within the spent fuel pool when the requirements of the Specification are not met. ITS 3.7.16 ACTION A does not require this action. This changes the CTS by deleting the action to suspend all other fuel movement within the spent fuel pool.

This change is acceptable because the ITS 3.7.16 ACTION A requirement to immediately initiate action to move the non-complying fuel assembly infers that no other fuel movement can be in progress. Only one fuel assembly is moved at a time in the spent fuel storage pool. Therefore this change is considered administrative since it does not result in any technical changes to the CTS.

A03 CTS 3.9.13 Action, in part, states that with the requirements of the Specification not satisfied, to move the non-complying fuel assemblies to allowable locations in accordance with Figure 3.9-1. ITS 3.7.16 Required Action A.1 requires action to be immediately initiated to move the noncomplying fuel assembly to an allowable location. This changes the CTS by explicitly specifying that the compensatory action to move non-complying fuel assemblies to allowable locations requires an immediate response.

The purpose of the CTS 3.9.13 Action to move non-complying fuel assemblies to allowable locations is to help ensure the assumptions of the spent fuel pool storage analysis is met. The current action does not specify a time; however it implies that the action is immediate. This change is acceptable because it only provides clarification that the compensatory action requires an immediate response. This change is designated as administrative because it does not result in a technical change to the CTS.

A04 The CTS 3.9.13 Action, in part, states that the provisions of Specification 3.0.4 are not applicable. ITS 3.7.16 ACTION A does not include a Note similar to the exception in the CTS 3.9.13 Action. This changes the CTS by deleting the explicit exception from Specification 3.0.4 in CTS 3.9.13 Action.

This change is acceptable because it results in no technical change to the Technical Specifications. CTS 3.0.4 provides requirements to preclude changing MODES with inoperable equipment. However, ITS LCO 3.0.4 has been modified to allow MODE changes under certain circumstances. This is justified in the Discussion of Changes for ITS Section 3.0. Therefore, this specific exception to CTS 3.0.4 is not needed in the ITS. This change is designated as administrative because it does not result in a technical change to the CTS.

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DISCUSSION OF CHANGES
ITS 3.7.16, SPENT FUEL POOL STORAGE

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

None

LESS RESTRICTIVE CHANGES

None

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

CTS

[Spent Fuel Pool Storage] (1)
3.7.16

3.7 PLANT SYSTEMS

3.7.16 [Spent Fuel Pool Storage] (1)

3.9.13 LCO 3.7.16 ~~The combination of initial enrichment and burnup of each fuel assembly stored in [Region 2] shall be within the acceptable [burnup domain] of Figure 3.7.16-1 or in accordance with Specification 4.3.1.1.~~ (2)

INSERT 1

APPLICABILITY: Whenever any fuel assembly is stored in [Region 2] of the spent fuel pool. (2)

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
Action	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 allowable location.	Immediately	(2)

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
4.9.13.1	SR 3.7.16.1	Verify by administrative means the initial enrichment and burnup of the fuel assembly is in accordance with Figure 3.7.16-1 or Specification 4.3.1.1.	Prior to storing the fuel assembly in [Region 2] the spent fuel pool	(2) (1)

CTS

2 **INSERT 1**

3.9.13 Fuel assemblies stored in the spent fuel pool shall be placed in the spent fuel pool storage racks in accordance with the criteria shown in Figure 3.7.16-1.

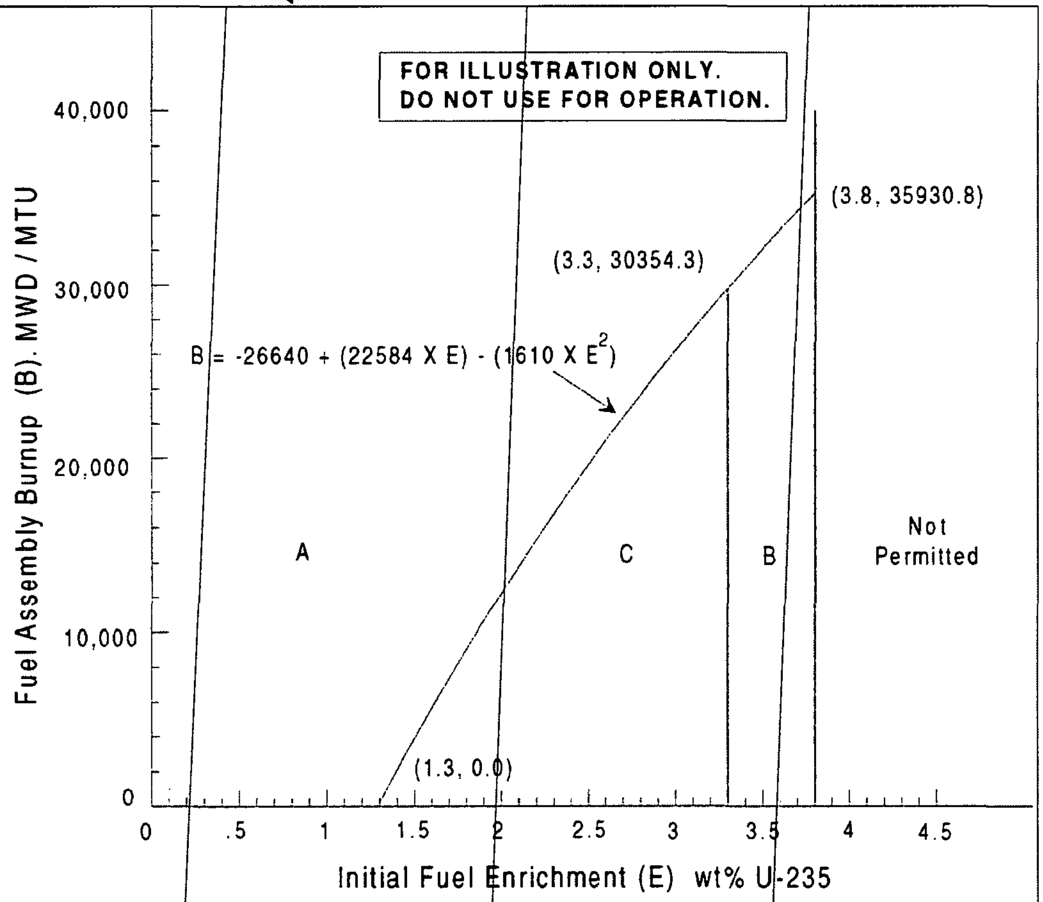
CTS

[Spent Fuel Pool Storage]
3.7.16

1

INSERT 2

Figure 3.9-1



2

Category "A" Fuel - May be located anywhere within the storage racks.
Category "B" Fuel - Shall only be located adjacent to Category "A" Fuel or water holes within the storage racks.
Category "C" Fuel - Shall not be located adjacent to Category "B" Fuel.

Figure 3.7.16-1 (page 1 of 1)
Burnup versus Enrichment Curve for
Spent Fuel Storage Racks

Pool

INSERT 3

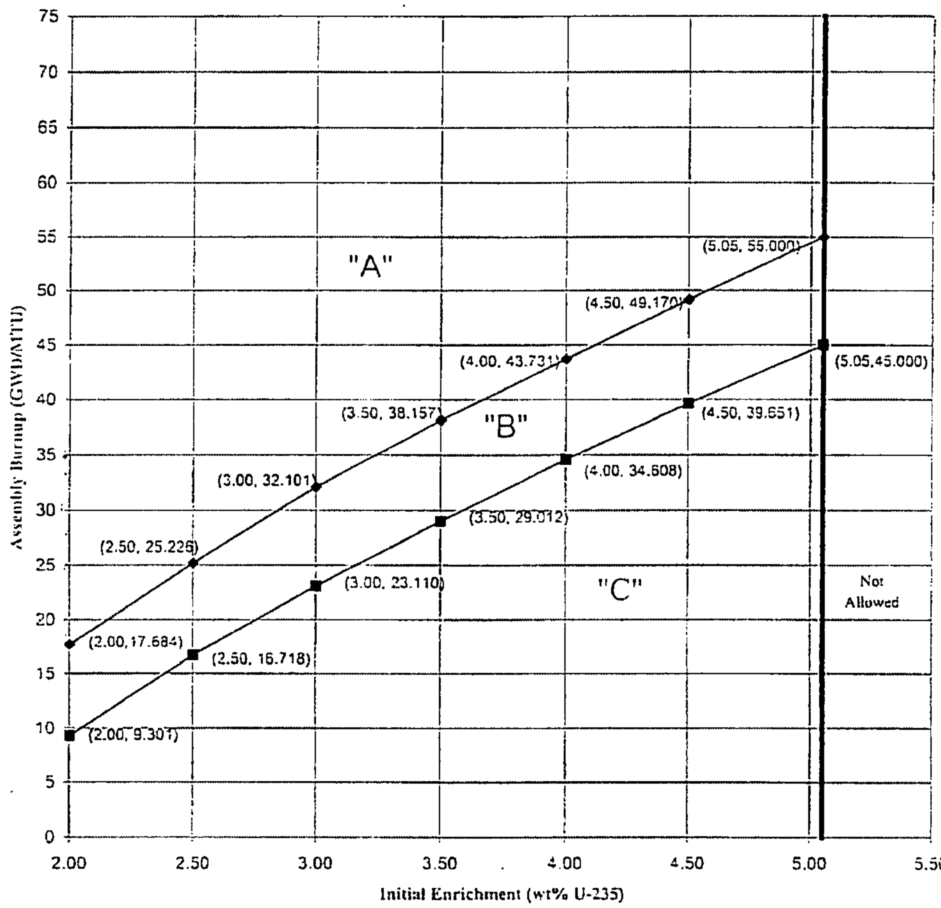
2

3.7.16

CTS

② **INSERT 2**

Figure 3.9-1



② **INSERT 3**

Figure 3.9-1

NOTE: Fuel assemblies with initial enrichments less than 2.0 wt% U-235 will conservatively be required to meet the burnup requirements of 2.0 wt% U-235 assemblies. Loading pattern considerations applicable to Category "A," "B," and "C" assemblies are described in the Bases.

Insert Page 3.7.16-2

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.16, SPENT FUEL POOL STORAGE

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

2. Changes are made to the ISTS Specification which reflect the plant specific nomenclature, system description, analysis, or licensing basis description.

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

B 3.7 PLANT SYSTEMS

B 3.7.16 [Spent Fuel Pool Storage] 1

BASES

BACKGROUND

The spent fuel storage facility is designed to store either new (nonirradiated) nuclear fuel assemblies, or burned (irradiated) fuel assemblies in a vertical configuration underwater. ~~The storage pool is sized to store [735] fuel assemblies, which includes storage for [15] failed fuel containers. The spent fuel storage cells are installed in parallel rows with center to center spacing of [12 31/32] inches in one direction, and [13 3/16] inches in the other orthogonal direction. This spacing and "flux trap" construction, whereby the fuel assemblies are inserted into neutron absorbing stainless steel cans, is sufficient to maintain a k_{eff} of ≤ 0.95 for spent fuel of original enrichment of up to [3.3]%. However, as higher initial enrichment fuel assemblies are stored in the spent fuel pool, they must be stored in a checkerboard pattern taking into account fuel burnup to maintain a k_{eff} of 0.95 or less.~~ INSERT 1 2

APPLICABLE SAFETY ANALYSES

The spent fuel storage facility is designed for noncriticality by use of adequate spacing~~, and "flux trap" construction whereby the fuel assemblies are inserted into neutron absorbing stainless steel cans~~. INSERT 2 2

The spent fuel pool storage 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, according to Figure [3.7.16-1] ~~in the accompanying LCO~~, ensure that the k_{eff} of the spent fuel pool will always remain < 0.95 assuming the pool to be flooded with unborated water. The restrictions are consistent with the criticality safety analysis performed for the spent fuel pool, according to Figure [3.7.16-1]. ~~Fuel assemblies not meeting the criteria of Figure [3.7.16-1] shall be stored in accordance with Specification 4.3.1.1.~~ INSERT 3 2 1 4 1 2

APPLICABILITY

This LCO applies whenever any fuel assembly is stored in ~~[Region 2] of~~ the spent fuel pool. 1

2 **INSERT 1**

The high density spent fuel pool storage racks are designed to maintain a k_{eff} equivalent to less than or equal to 0.95 when flooded with unborated water, which includes a conservative allowance for manufacturing tolerances and calculation uncertainty. The spent fuel pool facility is designed to assure the safe storage of irradiated fuel assemblies under normal and accident conditions. Each storage rack consists of a rectangular array of stainless steel cells with walls of 0.075 inches nominal thickness, spaced a nominal 9.22 inches on center in both directions. The neutron absorber material is utilized between each cell for criticality considerations. The 21 spent fuel pool racks store a maximum of 1624 fuel assemblies. The rack cells are arranged in parallel rows with a center-to-center spacing of 9.22 inches.

2 **INSERT 2**

A neutron absorber is attached to all four sides of each cell. In addition, there is a gap between individual racks and between the peripheral racks and the pool walls. These gaps form flux traps that reduces neutron movement between fuel assemblies in adjacent racks. Loading patterns maintain k_{eff} < 0.95 for fuel assemblies with initial nominal enrichments $\leq$ 5.05 weight percent Uranium-235, assuming the spent fuel pool water is unborated.

2 **INSERT 3**

The restrictions on the placement of fuel assemblies within the spent fuel pool as dictated by Figure 3.7.16-1 ensure that the k_{eff} of the spent fuel pool will always be < 0.95 assuming the spent fuel pool is flooded with non-borated water. The restrictions delineated in Figure 3.7.16-1 and the Required Actions are consistent with the criticality safety analysis performed for the spent fuel pool (Ref. 1).

The criticality analyses qualify the high density rack modules for storage of the fuel assemblies in one of three different loading patterns subject to certain restrictions: Mixed Zone Three Region (MZTR), Checkerboard (CB), and Homogeneous Loading (HL). Figure 3.7.16-1 provides the Category-specific burnup/enrichment limitations. Different loading patterns may be used in different rack modules, provided each rack module contains only one loading pattern. The loading pattern restrictions are maintained in fuel handling administrative procedures.

MZTR is a loading pattern where fresh or low burnup assemblies (identified as Region 1 assemblies) are separated from each other and from intermediate burnup fuel assemblies (identified as Region 3 assemblies) by barrier fuel assemblies with high burnup (identified as Region 2 assemblies). CB is a loading pattern of empty cells, or cells with non-fuel bearing components, and cells with fresh or low burnup assemblies (Region 1). HL is a loading pattern of intermediate burnup fuel assemblies (Region 3). Region 2 assemblies correspond to Category A in Figure 3.7.16-1, Region 3 assemblies correspond to Category B in Figure 3.7.16-1, and Region 1 assemblies correspond to Category C in Figure 3.7.16-1.

BASES

ACTIONS

A.1

Required Action A.1 is modified by a Note indicating that LCO 3.0.3 does not apply. 3

When the configuration of fuel assemblies stored in the spent fuel pool is not in accordance with Figure [3.7.16-1], immediate action must be taken to make the necessary fuel assembly movement(s) to bring the configuration into compliance with Figure [3.7.16-1]. 1 1

If moving fuel assemblies while in MODE 5 or 6, LCO 3.0.3 would not specify any action. If moving fuel assemblies while in MODE 1, 2, 3, or 4, the fuel movement is independent of reactor operation. Therefore, in either case, inability to move fuel assemblies is not sufficient reason to require a reactor shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.7.16.1

This SR verifies by administrative means that the initial enrichment and burnup of the fuel assembly is in accordance with Figure [3.7.16-1] ~~in the accompanying LCO~~. ~~For fuel assemblies in the unacceptable range of [Figure 3.7.16-1], performance of the SR will ensure compliance with Specification 4.3.1.1.~~ 1 1 2

REFERENCES

~~None.~~ 1. UFSAR, Section 9.1.2.1. 2

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.16 BASES, SPENT FUEL POOL STORAGE

1. Changes are made to reflect changes made to the Specification.
2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.
3. Editorial changes for clarity. The first paragraph, which describes the addition of the Note, has been combined with the paragraph describing the reason for the Note.
4. Changes are made to be consistent with similar phrases in other Bases.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.16, SPENT FUEL POOL STORAGE

There are no specific NSHC discussions for this Specification.

ATTACHMENT 17

ITS 3.7.17, SECONDARY SPECIFIC ACTIVITY

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

A01

ITS

PLANT SYSTEMS

ACTIVITY

LIMITING CONDITION FOR OPERATION

LCO 3.7.17

3.7.1.4 The specific activity of the secondary coolant system shall be $\leq$ 0.10 µCi/gram DOSE EQUIVALENT I-131.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

ACTION A

With the specific activity of the secondary coolant system > 0.10 µCi/gram DOSE EQUIVALENT I-131, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

SR 3.7.17.1

4.7.1.4 The specific activity of the secondary coolant system shall be determined to be within the limit ~~by performance of the sampling and analysis program of Table 4.7-2.~~ every 31 days

M01 L01

ITS A01 ITS 3.7.17

TABLE 4.7-2

SECONDARY COOLANT SYSTEM SPECIFIC ACTIVITY
SAMPLE AND ANALYSIS PROGRAM

	TYPE OF MEASUREMENT AND ANALYSIS	SAMPLE AND ANALYSIS FREQUENCY	
	1. Gross Activity Determination	At least once per 72 hours	L01
SR 3.7.17.1	2. Isotopic Analysis for DOSE EQUIVALENT I-131 Concentration	a) 1 per 31 days, whenever the gross activity determination indicates iodine concentrations greater than 10% of the allowable limit. b) 1 per 6 months, whenever the gross activity determination indicates iodine concentrations below 10% of the allowable limit.	LA01 M01

DISCUSSION OF CHANGES
ITS 3.7.17, SECONDARY SPECIFIC ACTIVITY

ADMINISTRATIVE CHANGES

A01 In the conversion of the Davis-Besse 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-1430, Rev. 3.1, "Standard Technical Specifications-Babcock and Wilcox 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 Table 4.7-2 Item 2.a requires the DOSE EQUIVALENT I-131 sampling frequency to be once per 31 days whenever the gross activity determination indicates iodine concentrations greater than 10% of the allowable limit. CTS Table 4.7-2 Item 2.b allows the sampling frequency for the DOSE EQUIVALENT I-131 to be extended to once per 6 months whenever the gross activity determination indicates iodine concentrations below 10% of the allowable limits. ITS SR 3.7.17.1 does not provide this extended 6 month time frame for determining the DOSE EQUIVALENT I-131 and requires verification of specific activity of the secondary coolant every 31 days. This changes the CTS by deleting CTS Table 4.7-2 Item 2.b and the CTS Table 4.7-2 Item 2.a qualifying statement of "whenever the gross activity determination indicates iodine concentrations greater than 10% of the allowable limit" in Item 2.a, and keeping the Frequency at 31 days all the time.

This change is acceptable because the 31 day Frequency is appropriate to detect trends in the secondary coolant level of DOSE EQUIVALENT I-131 and allows for appropriate action to be taken to maintain levels below the LCO limit. This change is designated as more restrictive because it requires the DOSE EQUIVALENT I-131 concentration to be determined every 31 days whenever the unit is in MODES 1, 2, 3, and 4 while not allowing a Frequency extension to once every 6 months based on the gross activity determination.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS Table 4.7-2 Item 2 requires an isotopic analysis to determine whether DOSE EQUIVALENT I-131 concentration is within limit. ITS SR 3.7.17.1 requires the verification that specific activity of the secondary coolant is within limit (≤ 0.10 μCi/gm DOSE EQUIVALENT I-131). This changes the CTS by moving the detail that an isotopic analysis must be performed to satisfy the requirements of the Surveillance to the Bases.

DISCUSSION OF CHANGES
ITS 3.7.17, SECONDARY SPECIFIC ACTIVITY

The removal of this detail for performing a Surveillance Requirement from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. ITS SR 3.7.17.1 still retains the requirement to verify secondary coolant DOSE EQUIVALENT I-131 is within limit. Also, this change is acceptable because this type of procedural detail will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L01 *(Category 5 – Deletion of Surveillance Requirement)* CTS Table 4.7-2 Item 1 requires that the gross activity determination be completed once per 72 hours. ITS 3.7.17 does not require any sampling to be performed to determine the gross activity of the secondary coolant. This changes the CTS by deleting the requirement for gross activity determination.

The purpose of CTS Table 4.7-2 Item 1 is to determine the gross activity in order to determine the sampling Frequency for secondary coolant DOSE EQUIVALENT I-131. Based on the gross activity, the sample Frequency for determining DOSE EQUIVALENT I-131 can be extended to once per 6 months from once per 31 days. This change is acceptable because the deleted Surveillance Requirement is not necessary to verify that the values used to meet the LCO are consistent with the safety analysis. Thus, appropriate values continue to be tested in a manner and at a Frequency necessary to give confidence that the assumptions in the safety analyses are protected. ITS SR 3.7.17.1 requires that the DOSE EQUIVALENT I-131 be determined every 31 days without any allowance for an extension of this Frequency. The secondary coolant DOSE EQUIVALENT I-131 is used in the accident analyses. The gross activity of the secondary coolant is not used in any accident analysis. This change is designated as less restrictive because a Surveillance that is required in the CTS will not be required in the ITS.

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

CTS

3.7 PLANT SYSTEMS

3.7.17 Secondary Specific Activity

3.7.1.4 LCO 3.7.17 The specific activity of the secondary coolant shall be ≤ [0.10] μCi/gm DOSE EQUIVALENT I-131. 1

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

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
Action	A. Specific activity not within limit.	A.1 Be in MODE 3. AND A.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
4.7.1.4	SR 3.7.17.1	Verify the specific activity of the secondary coolant is ≤ [0.10] μCi/gm DOSE EQUIVALENT I-131.	[31] days	1

JUSTIFICATION FOR DEVIATIONS
ITS 3.7.17, SECONDARY SPECIFIC ACTIVITY

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

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

B 3.7 PLANT SYSTEMS

B 3.7.17 Secondary Specific Activity

BASES

BACKGROUND

Activity in the secondary coolant results from steam generator tube out-LEAKAGE from the Reactor Coolant System (RCS). Under steady state conditions, the activity is primarily iodines with relatively short half lives and, thus, indicative of 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"). The steam line failure is assumed to result in the release of the noble gas and iodine activity contained in the steam generator inventory, the feedwater, and the reactor coolant leakage. Most of the iodine isotopes have short half lives (i.e., < 20 hours).

~~With the specified activity limit, the resultant 2 hour thyroid dose to a person at the exclusion area boundary (EAB) would be about 0.79 rem if the main steam safety valves (MSSVs) are open for the 2 hours following a trip from full power.~~ 4

exclusion area boundary 5

n

dose

Operating a unit at the allowable limits could result in a ~~2 hour~~ EAB ~~exposure~~ of a small fraction of the 10 CFR 100 (Ref. 1) limits, ~~or the limits established as~~ the NRC staff approved licensing basis. 1

consistent with

APPLICABLE SAFETY ANALYSES

Section 15.4

U

INSERT 1

The accident analysis of the main steam line break, as discussed in the FSAR, ~~Chapter [15]~~ (Ref. 2) assumes ~~the initial secondary coolant specific activity to have a radioactive isotope concentration of 0.1 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 established limits, (Ref. 1) for whole body and thyroid dose ~~rates~~. 1 2 1 1

1 **INSERT 1**

the reactor has been operating with 1% defective fuel and a 1 gpm steam generator tube leak. The steam line break occurs between containment and the main steam isolation valve. Reactor coolant leakage into the steam generator continues for 9 hours until the RCS is cooled down and the pressure differential is equalized.

BASES

APPLICABLE SAFETY ANALYSES (continued)

With a loss of offsite power, the remaining steam generator is available for core decay heat dissipation by venting steam to the atmosphere through the MSSVs and steam generator atmospheric dump valves (ADVs). The Auxiliary Emergency Feedwater System supplies the necessary makeup to the steam generator. Venting continues until the reactor coolant temperature and pressure has decreased sufficiently for the Decay Heat Removal Shutdown Cooling System to complete the cooldown. 1 1 1

In the evaluation of the radiological consequences of this accident, the activity released from the steam generator connected to the failed steam line is assumed to be released directly to the environment. The unaffected steam generator is assumed to discharge steam and any entrained activity through the MSSVs and ADVs during the event. Since no credit is taken in the analysis for activity plateout or retention, the resultant radiological consequences represent a conservative estimate of the potential integrated dose due to the postulated steam line failure. 1

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 limit in the secondary coolant system of ≤ [0.10] μ Ci/gm DOSE EQUIVALENT I-131 maintains the radiological consequences of a Design Basis Accident (DBA) to a small fraction of Reference 1 limits. 2

Monitoring the specific activity of the secondary coolant ensures that, when secondary specific activity limits are exceeded, appropriate actions are taken, in a timely manner, to place the unit in an operational MODE that would minimize the radiological consequences of a DBA.

APPLICABILITY

In MODES 1, 2, 3, and 4, the limits on secondary specific activity apply due to the potential for secondary steam releases to the atmosphere.

In MODES 5 and 6, the steam generators are not being used for heat removal. Both the RCS and steam generators are at low pressure and primary to secondary LEAKAGE is minimal. Therefore, monitoring of secondary specific activity is not required.

BASES

ACTIONS

A.1 and A.2

DOSE EQUIVALENT I-131 exceeding the allowable value in the secondary coolant contributes to increased post accident doses. If secondary specific activity ~~cannot be restored to within limits within the associated Completion Time~~ is not within limits, 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. 3

SURVEILLANCE REQUIREMENTS

SR 3.7.17.1

This SR verifies that the secondary specific activity is within the limits of the accident analysis. An ~~A gamma~~ isotopic analysis of the secondary coolant, which determines DOSE EQUIVALENT I-131, confirms the validity of the safety analysis assumptions for ~~as~~ 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. 1

REFERENCES

1. 10 CFR 100~~[.11]~~. 1
2. UFSAR, ~~Chapter [15]~~ Section 15.4. 1 2

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JUSTIFICATION FOR DEVIATIONS
ITS 3.7.17 BASES, SECONDARY SPECIFIC ACTIVITY

1. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.
2. The brackets have been removed and the proper plant specific information/value has been provided.
3. Changes made to be consistent with the Specification.
4. This information is not necessary to be in the Bases, since the next paragraph states that the 10 CFR 100 limits are not exceeded.
5. Editorial change for clarity.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.17, SECONDARY SPECIFIC ACTIVITY

There are no specific NSHC discussions for this Specification.

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ATTACHMENT 18

ITS 3.7.18, STEAM GENERATOR LEVEL

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

ITS

A01

ITS 3.7.18

3/4.7 PLANT SYSTEMS

3/4.7.9 STEAM GENERATOR LEVEL

LIMITING CONDITION FOR OPERATION

L01

LCO 3.7.18 3.7.9 Each Steam Generator shall have a minimum water level of 18 inches and the maximum specified below as applicable:

MODES 1 and 2:

a. The acceptable operating region of Figure 3.7-1.

MODE 3*:

b. 50 inches Startup Range with the SFRCS Low Pressure Trip bypassed and one or both Main Feedwater Pump(s) capable of supplying Feedwater to any Steam Generator.

c. 96 percent Operate Range with:

1. The SFRCS Low Pressure Trip active, or

2. The SFRCS Low Pressure Trip bypassed and both Main Feedwater Pumps incapable of supplying Feedwater to the Steam Generators.

MODE 4:

d. 625 inches Full Range Level

LA01

APPLICABILITY: MODES 1, 2, 3, and ~~4,~~ as above.

LA01

ACTION:

Add proposed ACTION A

L02

ACTION B With one or more steam generator's water level outside the limits, be in at least HOT STANDBY within 6 hours and in ~~COLD SHUTDOWN~~ MODE 4 within the next ~~30~~ 6 hours.

A02

SURVEILLANCE REQUIREMENTS

SR 3.7.18.1 4.7.9 The steam generator shall be demonstrated OPERABLE by verifying steam generator level to be within limits at least once per 12 hours.

ACTIONS Note *Establish adequate SHUTDOWN MARGIN to ensure the reactor will stay subcritical during a MODE 3 Main Steam Line Break.

ITS

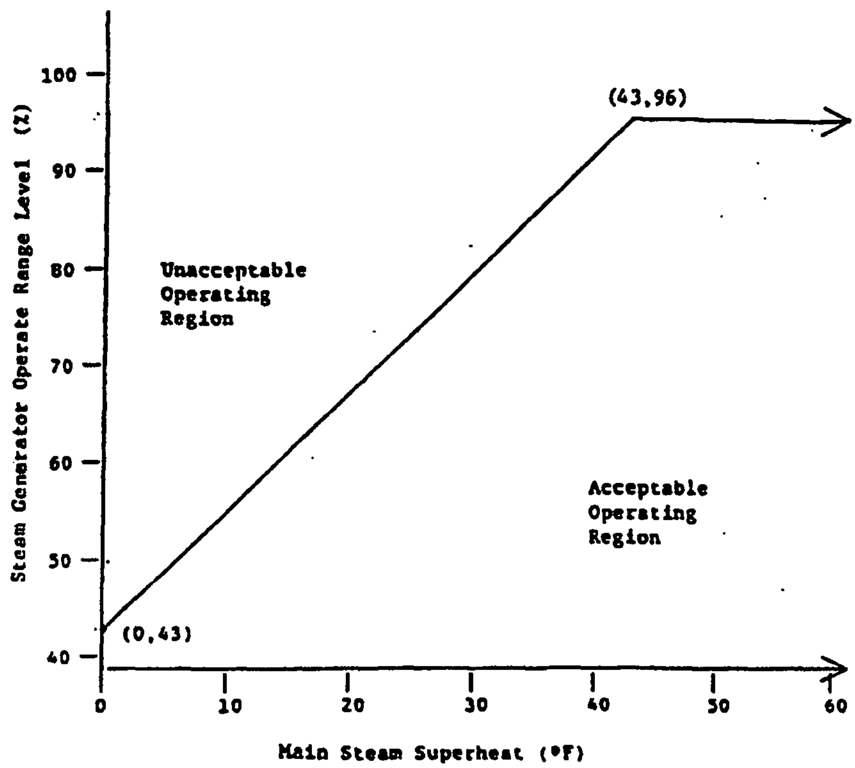
A01

ITS 3.7.18

Figure 3.7-1

Figure 3.7.18-1

Maximum Allowable Steam Generator Level in MODES 1 and 2



DISCUSSION OF CHANGES
ITS 3.7.18, STEAM GENERATOR LEVEL

ADMINISTRATIVE CHANGES

A01 In the conversion of the Davis-Besse 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-1430, Rev. 3.1, "Standard Technical Specifications-Babcock and Wilcox 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 CTS 3.7.9 Action requires the unit to be ultimately placed in COLD SHUTDOWN (MODE 5) when the steam generator water level is not within limits. ITS 3.7.18 ACTION B only requires placing the unit in MODE 4. This changes the CTS by only requiring the unit to be in MODE 4 in lieu of MODE 5 when outside the SG water level limits.

The purpose of the CTS 3.7.9 Action is to place the unit outside the Applicability of the LCO. CTS 3.7.9 includes MODE 4 SG water level requirements, thus placing the unit in MODE 5 was appropriate. ITS 3.7.18 only includes MODES 1, 2, and 3 SG water level requirements. The MODE 4 requirement has been removed as described in DOC LA01. Thus, the ITS 3.7.18 ACTION B requirement is consistent with placing the unit outside the Applicability of ITS 3.7.18. The proposed 12 hour Completion Time to reach MODE 4 is consistent with the time normally provided in other Specifications. Therefore, this change is acceptable. This change is designated as administrative and is acceptable because it does not result in any technical changes other than those justified in DOC LA01.

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 3 - Removing Procedural Details for Meeting TS Requirements or Reporting Requirements)* CTS 3.7.9.d states that the maximum SG water level in MODE 4 shall be less than or equal to 625 inches full range level. ITS 3.7.18 does not include the MODE 4 SG water level requirements. This changes the CTS by moving the maximum SG water level detail to the Bases (of ITS 3.4.5 and ITS 3.4.6).

The removal of this detail, which is related to SG OPERABILITY, from the Technical Specifications is acceptable because this type of information is not

DISCUSSION OF CHANGES
ITS 3.7.18, STEAM GENERATOR LEVEL

necessary to be in the Technical Specifications in order to provide adequate protection of the public health and safety. The ITS retains the requirement in ITS 3.4.5 that two RCS loops be OPERABLE and in ITS 3.4.6 that any combination of two DHR or RCS loops be OPERABLE. When the RCS loops are required OPERABLE, this will require the associated SGs to be OPERABLE and capable of removing decay heat (i.e., water level $\geq$ 18 inches above the lower tube sheet and $\leq$ 625 inches full range level), as stated in the ITS 3.4.5 and ITS 3.4.6 Bases. If the SG water level is not within the limit specified such that decay heat removal capability does not exist, the associated RCS loop would be inoperable and the appropriate ACTIONS of ITS 3.4.5 or ITS 3.4.6 would be entered. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L01 *(Category 1 – Relaxation of LCO Requirements)* CTS 3.7.9 requires a minimum of 18 inches in each steam generator (SG) in MODES 1, 2, 3, and 4. ITS 3.7.18 does not include any minimum SG level requirements. This changes the CTS by deleting the minimum SG level requirements from this Technical Specification.

The purpose of the minimum SG level requirement is to ensure adequate level in the SG so it can perform its heat removal function. This change is acceptable because the minimum level requirement is not necessary in this Specification to ensure the heat removal function. The Steam and Feedwater Rupture Control System (SFRCS) Instrumentation includes an actuation on low steam generator level. The Allowable Value for the Steam Generator Level - Low Function is $\geq$ 17.3 inches (ITS Table 3.3.11-1 Function 3), and it is required in MODES 1, 2, and 3. However, the actual trip setpoint for this Function is approximately 23 inches. When actuated, the SFRCS instrumentation initiates the Auxiliary Feedwater System (AFW) to restore SG water level, and send a signal to the Anticipatory Reactor Trip System (ARTS), which will then generate a reactor trip signal. This results in the unit being automatically placed in MODE 3. While the ARTS is not maintained in the ITS, it is being maintained in the Technical Requirements Manual. ITS 3.4.5, "RCS Loops - MODE 3," and ITS 3.4.6, "RCS Loops - MODE 4," provide the loop requirements to ensure decay heat can be removed when in these MODES. ITS 3.4.5 requires two RCS loops to be OPERABLE and ITS 3.4.6 requires two loops of any combination of RCS loops and decay heat removal (DHR) loops. The LCO section of the Bases for both of these Specifications states that an OPERABLE RCS loop includes an OPERBLE SG. The Bases further states that an OPERABLE SG requires at least $\geq$ 18 inches of secondary side water level above the lower tube sheet. Therefore, maintaining a specific minimum SG water level requirement in the Technical Specifications is not required, since other plant systems (ARTS) and other ITS requirements (ITS 3.3.11, ITS 3.4.5, and ITS 3.4.6) in combination with other plant design features (ARTS) will ensure adequate decay heat removal

DISCUSSION OF CHANGES
ITS 3.7.18, STEAM GENERATOR LEVEL

capability using an RCS loop is maintained. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

L02 *(Category 3 – Relaxation of Completion Time)* CTS 3.7.9 Action states that when SG water level for one or more SGs is outside the limits, be in HOT STANDBY (MODE 3) within 6 hours and COLD SHUTDOWN (MODE 5) within the next 30 hours. No time is provided to restore a SG water level prior to requiring a unit shutdown. Under similar conditions, ITS 3.7.18 ACTION A provides a 15 minute restoration time prior to requiring a unit shutdown. This changes the CTS by providing 15 minutes to restore the SG water level to within limits prior to requiring a unit shutdown. The change in the requirement to be in MODE 5 is discussed in DOC A02.

The purpose of CTS 3.7.9 Action is to restore the SDM to within its limit promptly. This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, considering the low probability of a DBA occurring during the allowed Completion Time, and provides a reasonable time for restoring the SG water level. The ITS 3.7.18 Required Action A.1 Completion Time of 15 minutes is considered a reasonable time for an operator to restore SG water level to within limits, and avoids an unnecessary unit shutdown if the problem can be promptly restored. This change is designated as less restrictive because additional time is allowed to restore parameters to within the LCO limits than was allowed in the CTS.

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

CTS

Steam Generator Level
3.7.18

3.7 PLANT SYSTEMS

3.7.18 Steam Generator Level

INSERT 1

3.7.9 LCO 3.7.18 ~~Water level of each steam generator shall be less than or equal to the maximum water level shown in Figure 3.7.18-1.~~ 1

, and 3

APPLICABILITY: MODES 1 ~~and~~ , 2~~.~~ 1

ACTIONS INSERT 2 1

CONDITION	REQUIRED ACTION	COMPLETION TIME
DOC L02 A. Water level in one or more steam generators ~~greater than maximum water level in Figure 3.7.18-1~~ not within limits.	A.1 Restore steam generator level to within limit.	15 minutes 1
Action B. Required Action and associated Completion Time ~~of Condition A~~ not met.	B.1 Be in MODE 3. INSERT 3	6 hours 1 2

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
4.7.9 SR 3.7.18.1 Verify steam generator water level to be within limits.	12 hours

CTS

1 **INSERT 1**

3.7.9 Water Level of each steam generator shall be:

a. Less than or equal to the maximum water level shown in Figure 3.7.18-1 when in MODE 1 or 2;

b. ≤ 96% Operate Range with LCO 3.3.11, "Steam and Feedwater Rupture Control System (SFRCS) Instrumentation," Function 1 (Main Steam Line Pressure – Low) not bypassed when in MODE 3;

c. ≤ 96% Operate Range with LCO 3.3.11, Function 1 bypassed and both main feedwater (MFW) pumps not capable of supplying feedwater to the steam generators when in MODE 3; and

d. ≤ 50 inches Startup Range with LCO 3.3.11, Function 1 bypassed and one or both MFW pumps capable of supplying feedwater to the steam generators when in MODE 3.

1 **INSERT 2**

---NOTE---

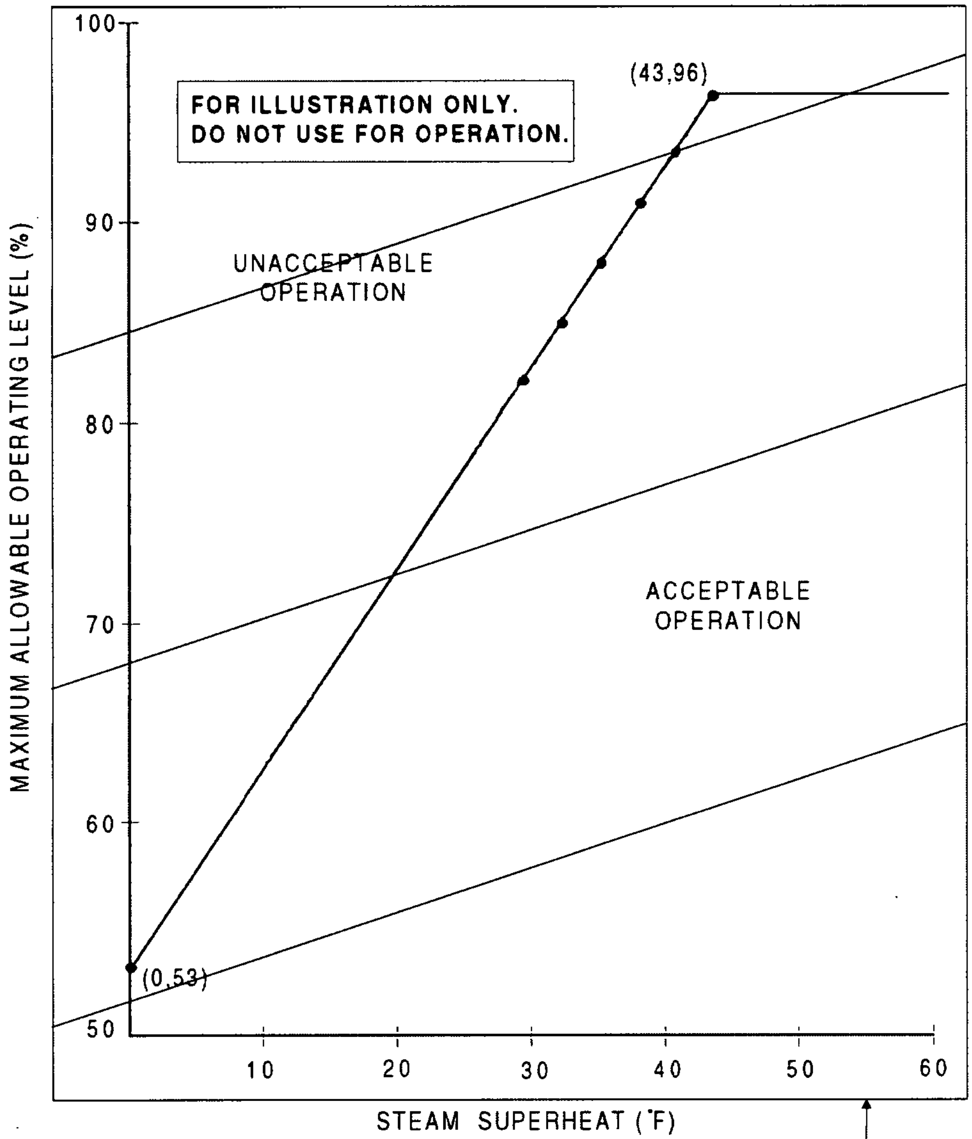
Footnote * Enter applicable Conditions and Required Actions of LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," when high steam generator water level results in exceeding the SDM limits.

----

1 **INSERT 3**

	AND	
Action	B.2 Be in MODE 4.	12 hours

3



INSERT 4

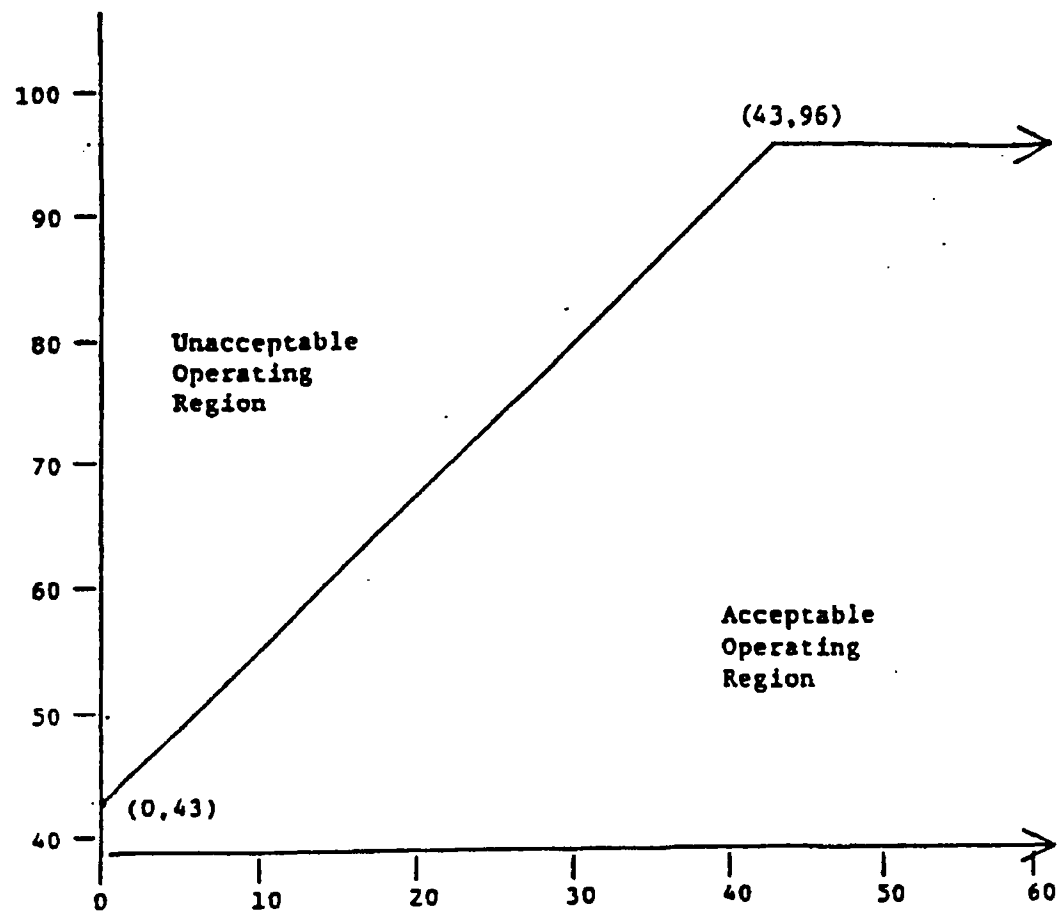
Figure 3.7.18-1 (page 1 of 1)
Maximum Allowable Steam Generator Level

3.7.18

CTS

3 **INSERT 4**

Figure 3.7-1



JUSTIFICATION FOR DEVIATIONS
ITS 3.7.18, STEAM GENERATOR LEVEL

1. ISTS 3.7.18 has been modified to include MODE 3 steam generator water level requirements. The Davis-Besse main steam line break accident analysis assumes a maximum water level to ensure both the containment pressure and the SHUTDOWN MARGIN is maintained within limits. Maintaining the steam generator water level within limits in MODE 3 prevents a containment over-pressurization event and a return to criticality concern following a main steam line break. Thus LCO 3.7.18 includes the Davis-Besse current licensing basis MODE 3 water level limits. Due to this addition, ISTS 3.7.18 ACTION B has been modified to include a shutdown to MODE 4. Furthermore, due to the addition of LCO 3.0.6, a Note has been added to ensure the applicable Conditions and Required Actions of LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," are entered when steam generator water level is not met in MODE 3. This is also consistent with the Davis-Besse current licensing basis, since CTS 3.7.9 includes a Note (footnote *) that references the SHUTDOWN MARGIN requirements.

2. Since Condition B applies to all Conditions in the ACTIONS Table, the term "of Condition A" is not necessary. This is consistent with the Writer's Guide for the Improved Standard Technical Specifications, TSTF-GG-05-01, Section 4.1.6.i.5.ii.

3. The Davis-Besse Steam Superheat verses maximum Allowable Operating Level curve is substituted for the curve provided for illustration in the ISTS.

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

B 3.7 PLANT SYSTEMS

B 3.7.18 Steam Generator Level

BASES

BACKGROUND

A principal function of the steam generators is to provide superheated steam at a constant pressure (~~900~~ 935 psia) over the power range. Steam generator water inventory is maintained large enough to provide adequate primary to secondary heat transfer. Mass inventory and indicated water level in the steam generator increases with load as the length of the four heat transfer regions within the steam generator vary. Inventory is controlled indirectly as a function of power and maintenance of a constant average primary system temperature by the feedwater controls in the Integrated Control System. 1

INSERT 1

~~The maximum operating steam generator level is based primarily on preserving the initial condition assumptions for steam generator inventory used in the FSAR steam line break (SLB) analysis (Ref. 1). An inventory of 62,600 lb was used in this analysis. The 62,600 lb must not be exceeded due to the concerns of a possible return to criticality because of primary side cooling following an SLB and the maximum pressure in the reactor building.~~ 1

For a clean once through steam generator, the mass inventory in a steam generator for operating at 100% power is approximately ~~39,000 lb to 40,000~~ 55,000 lb.

As a steam generator becomes fouled and the operating level approaches the limit of 96%, the mass inventory in the downcomer region increases approximately 10,000 lb, and adds to the total mass inventory of the steam generator. In matching unit data of startup level versus power, the steam generator performance codes have shown that fouling of the lower tube support plates does not significantly change the heat transfer characteristics of the steam generator. Thus, the steam temperature, or superheat, is not degraded due to the fouling of the tube support plates, and mass inventory changes are mainly due to the added level in the downcomer.

Analytically, increasing the fouling of the steam generator tube surfaces degrades the heat transfer capability of the steam generator, increases the mass inventory, and decreases the steam superheat at 100% ~~power (2544 MWt)~~ RTP. The results were presented as the amount of mass inventory in each steam generator versus operating range level and steam superheat. 4

1 **INSERT 1**

The maximum operating steam generator level is based primarily on preserving the initial condition assumptions for the steam generator inventory used in the main steam line break (MSLB) accident analysis (Ref. 1). The mass and energy release data that are input into the peak pressure analysis of the containment vessel were generated with the TRAP computer code. The analysis was performed with the bounding plant conditions to maximize heat generated in the Reactor Coolant System (RCS), heat transfer from the primary to secondary systems, and maximum inventory in the steam generators. Each of these conditions maximizes the mass and energy release from the MSLB. The analysis includes evaluation of the reactivity transient due to the MSLB.

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BASES

BACKGROUND (continued)

The limiting curve, which was determined from several steam generator performance code runs at a power level of 100%, conservatively bounds steam generator mass inventory value, when operating at power levels < 100%.

2

The points displayed in Figure 3.7.18-1~~, in the accompanying LCO,~~ are the intercept points of the 57,000 lb mass value, and the operating range level x and steam superheat values.

The steam generator performance analysis also indicated that startup and full range level instruments are inadequate indicators of steam generator mass inventory at high power levels due to the combination of static and dynamic pressure losses. If the water level should rise above the 96% upper limit, the steam superheat would tend to decrease due to reduced feedwater heating through the aspirator ports. Normally, a reduction in water level is manually initiated to maintain steam flow through the aspirator port by reducing the power level. Thus, the superheat versus level limitation also tends to ensure that, in normal operation, water level will remain clear of the aspirator ports.

Feedwater nozzle flooding would impair feedwater heating, and could result in excessive tube to shell temperature differentials, excessive tubesheet temperature differentials, and large variations in pressurizer level.

APPLICABLE SAFETY ANALYSES

The most limiting Design Basis Accident that would be affected by steam ~~generator operating level is a~~ main steam line failure. This accident is evaluated in Reference 1. The parameter of interest is the mass of water, or inventory, contained in the steam generator due to its role in lowering Reactor Coolant System (RCS) temperature (return to criticality concern), and in raising containment pressure during an M SLB accident. A higher inventory causes the effects of the accident to be more severe. Figure 3.7.18-1~~, in the accompanying LCO,~~ is based upon maintaining inventory < 57,000 lb~~, which is 10% less than the inventory used in the FSAR accident analysis, and therefore is conservative.~~ INSERT 2

1 1 2 1

The steam generator level satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii).

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1 **INSERT 2**

. Figure 3.7.18-1 was reviewed following reanalysis of the MSLB, which assumed approximately 56,000 lbm, and was considered to remain bounding. It has been determined that the plant response when operating at the limit of the Figure is consistent with the MSLB analysis.

BASES

LCO	This LCO is required to preserve the initial condition assumptions of the accident analyses. Failure to meet the maximum steam generator level LCO requirements can result in additional mass and energy released to containment, and excessive cooling (and related core reactivity effects) following an SLB. In addition, feedwater nozzle flooding would impair feedwater heating, and could result in excessive tube to shell temperature differentials and excessive tubesheet temperature gradients. (1) M
APPLICABILITY	In MODES 1 ~~and~~ 2 , and 3 a maximum steam generator water level is required to preserve the initial condition assumption for steam generator inventory used in the main steam line failure accident analysis (Ref. 1). (1)
	In MODE 3, limits on ~~RCS boron concentrations~~ steam generator water level (in conjunction with meeting the requirements of LCO 3.1.1, "SHUTDOWN MARGIN (SDM)") will also prevent a return to criticality in the event of an SLB. ¶ In MODES 4, 5, and 6, the water in the steam generator has a low specific enthalpy; therefore, there is no need to limit the steam generator inventory when the unit is in this condition. (5) M
ACTIONS	A.1 INSERT 3 (5)
	With the steam generator level in excess of the maximum limit, action must be taken to restore the level to within the bounds assumed in the analysis. To achieve this status, the water level is restored to within the limit. The 15 minute Completion Time is considered to be a reasonable time to perform this evolution.
	B.1
	If the water level in one or more steam generators cannot be restored to ~~less than or equal to the maximum level in Figure 3.7.18-1~~ within the limits, the unit must be placed in a MODE that minimizes the accident risk. 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 ~~is~~ 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. (5) (5)
SURVEILLANCE REQUIREMENTS	SR 3.7.18.1
	This SR verifies the steam generator level to be within acceptable limits. The 12 hour Frequency is adequate because the operator will be aware of unit evolutions that can affect the steam generator level between checks. Furthermore, the 12 hour Frequency is considered adequate in view of other indications available in the control room, including alarms, to alert the operator to steam generator level status.
REFERENCES	1. UFSAR, Section [15.4.4]. (1) (3)

5 **INSERT 3**

In the event a high steam generator water level results in exceeding the SDM limits of LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," the ACTIONS Note directs entry into the applicable Conditions and Required Actions of LCO 3.1.1. This is an exception to LCO 3.0.6 and ensures the proper actions are taken for SDM not within the required limits.

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JUSTIFICATION FOR DEVIATIONS
ITS 3.7.18 BASES, STEAM GENERATOR 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. Changes are made to be consistent with similar phrases in other Bases.
3. The brackets have been removed and the proper plant specific information/value has been provided.
4. Editorial change for clarity.
5. Changes made to reflect changes made to the Specification.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.7.18, STEAM GENERATOR LEVEL

There are no specific NSHC discussions for this Specification.

ATTACHMENT 19

RELOCATED/DELETED CURRENT TECHNICAL SPECIFICATIONS

CTS 3/4.7.2, STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

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

R01

PLANT SYSTEMS

3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

LIMITING CONDITION FOR OPERATION

3.7.2.1 The temperature of the secondary coolant in the steam generators shall be > 110°F when the pressure of the secondary coolant in the steam generator is > 237 psig.

APPLICABILITY: At all times.

ACTION:

With the requirements of the above specification not satisfied:

a. Reduce the steam generator pressure to ≤ 237 psig within 30 minutes, and

b. Perform an engineering evaluation to determine the effect of overpressurization on the structural integrity of the steam generator. Determine that the steam generator remains acceptable for continued operation prior to increasing its pressure above 237 psig.

SURVEILLANCE REQUIREMENTS

4.7.2.1 The temperature of the secondary coolant in each steam generator shall be determined to be > 110°F at least once per hour when secondary pressure in the steam generator is > 237 psig and T_{avg} is < 200°F.

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DISCUSSION OF CHANGES
CTS 3/4.7.2, STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

ADMINISTRATIVE CHANGES

None

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

R01 CTS 3.7.2.1 states that the temperature of the secondary coolant in the steam generators shall be > 110°F when the pressure of the secondary coolant in the steam generator is > 237 psig. The limitation on steam generator pressures and temperatures ensures that pressure-induced stresses on the steam generators do not exceed the maximum allowable fracture toughness limits. These pressure and temperature limits are based on maintaining a steam generator RT_{NDT} sufficient to prevent brittle fracture. As such, the Technical Specification places limits on variables consistent with structural analysis results. However, these limits are not initial condition assumptions of a DBA or transient. These limits represent operating restrictions and Criterion 2 includes operating restrictions. However, it should be noted that in the Final Policy Statement the Criterion 2 discussion specified only those operating restrictions required to preclude unanalyzed accidents and transients be included in Technical Specifications. This Specification does not meet the criteria for retention in the ITS; therefore, it is not included in the ITS. This changes the CTS by relocating this Specification to the Technical Requirements Manual (TRM).

This change is acceptable because CTS 3.7.2.1 does not meet the 10 CFR 50.36(c)(2)(ii) criteria for inclusion into the ITS.

10 CFR 50.36(c)(2)(ii) Criteria Evaluation:

1. The steam generator pressure and temperature limits are not used for, nor capable of, detecting a significant abnormal degradation of the reactor coolant pressure boundary prior to a design basis accident (DBA).

2. The steam generator pressure and temperature limits are not a process variable, design feature, or operating restrictions that are an initial condition of a DBA or transient.

3. The steam generator pressure and temperature limits are not part of the primary success path in the mitigation of a DBA or transient.

4. As discussed in B&W Owners Group Technical Report 47-1170689-00 (Appendix A pages A-73 and A-74), the steam generator pressure and temperature limits were found to be a non-significant risk contributor to core damage frequency and offsite releases. Davis-Besse has reviewed this evaluation, considers it applicable to Davis-Besse Nuclear Power Station, and concurs with the assessment.

DISCUSSION OF CHANGES
CTS 3/4.7.2, STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

Since the 10 CFR 50.36(c)(2)(ii) criteria have not been met, the Steam Generator Pressure/Temperature Limitation LCO and associated Surveillances may be relocated out of the Technical Specifications. The Steam Generator Pressure/Temperature Limitation Specification will be relocated to the TRM. The TRM is currently incorporated by reference into the UFSAR, thus any changes to the TRM are made under 10 CFR 50.59, which ensures changes are properly evaluated. This change is designated as a relocation because the LCO did not meet the criteria in 10 CFR 50.36(c)(2)(ii) and has been relocated to the TRM.

REMOVED DETAIL CHANGES

None

LESS RESTRICTIVE CHANGES

None

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
CTS 3/4.7.2, STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

There are no specific NSHC discussions for this Specification.

CTS 3/4.7.7, SNUBBERS

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

PLANT SYSTEMS

3/4.7.7 SNUBBERS

LIMITING CONDITION FOR OPERATION

3.7.7 All safety-related snubbers shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4. (MODES 5 and 6 for snubbers located on systems required OPERABLE in those MODES).

LA01

ACTION:

a. With one or more snubbers inoperable: 1. within 72 hours replace or restore the inoperable snubber(s) to OPERABLE status, or 2. verify system operability with the snubber(s) inoperable by engineering evaluation within 72 hours; or 3. declare the supported subsystem inoperable and follow the appropriate ACTION statement for that system.

See ITS Section 3.0

and, for snubbers which have failed either the visual or functional test:

b. Perform an engineering evaluation within 90 days to determine if any safety-related system or component has been adversely affected by the inoperability of the snubber and if the snubber mode of failure has imparted a significant effect or degradation on the supported component or system.[1] The provisions of Technical Specification 3.0.4 are not applicable for the component or system.

SURVEILLANCE REQUIREMENTS

4.7.7 Each snubber[2] shall be demonstrated OPERABLE by the requirements of the following surveillance programs and pursuant to requirements of Specification 4.0.5.

LA01

4.7.7.1 Visual Inspection Program

[1]Engineering evaluation is not required when a snubber is removed for surveillance testing provided it is returned to OPERABLE status within the requirements of ACTION statement a.

[2]Safety-related snubbers are listed in the latest revision of applicable surveillance test procedure(s). Snubbers may be added to, or removed from, safety-related systems and their assigned groups without a License Amendment.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

a. General Requirements

At least once per inspection interval, each group of snubbers in use in the Plant shall be visually inspected in accordance with Specification 4.7.7.1.b and 4.7.7.1.c. Visual inspections may be performed with binoculars, or other visual support devices, for those snubbers that are difficult to access and where required to keep exposure as low as reasonably achievable. Response to failures shall be in accordance with Specification 4.7.7.1.d.

b. Inspection Interval

The inspection interval may be applied on the basis of snubber groups. The snubber groups may be established based on physical characteristics and accessibility. Inaccessible snubbers are defined as those located: (a) inside containment, (b) in high radiation exposure zones, or (c) in areas where accessibility is limited by physical constraints such as the need for scaffolding.

Each of the groups may be inspected independently according to the schedule determined by Table 4.7-5. The visual inspection interval for each snubber group shall be determined based upon the criteria provided in Table 4.7-5, and the first inspection interval determined using the criteria shall be based upon the previous inspection interval as established by the requirements in effect before amendment 161 .

LA01

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CTS 3/4.7.7

TABLE 4.7-5
SNUBBER VISUAL INSPECTION INTERVAL

Population or Group (Notes 1 and 2)	NUMBER OF UNACCEPTABLE SNUBBERS Column A Extended Interval (Notes 3 and 6)	Column B Repeat Interval (Notes 4 and 6)	Column C Reduced Interval (Notes 5 and 6)
1	0	0	1
80	0	0	2
100	0	1	4
150	0	3	8
200	2	5	13
300	5	12	25
400	8	18	36
500	12	24	48
750	20	40	78
1000 or greater	29	56	109

Note 1: The next visual inspection interval for a snubber population or group size shall be determined based upon the previous inspection interval and the number of unacceptable snubbers found during that interval. Snubbers may be grouped, based upon their accessibility during power operation, as accessible or inaccessible. These categories may be examined separately or jointly. However, the licensee must make and document that decision before any inspection and shall use that decision as the basis upon which to determine the next inspection interval for that group.

Note 2: Interpolation between population or group sizes and the number of unacceptable snubbers is permissible. Use next lower integer for the value of the limit for Columns A, B, or C if that integer includes a fractional value of unacceptable snubbers as determined by interpolation.

Note 3: If the number of unacceptable snubbers is equal to or less than the number in Column A, the next inspection interval may be twice the previous interval but not greater than 48 months.

Note 4: If the number of unacceptable snubbers is equal to or less than the number in Column B but greater than the number in Column A, the next inspection interval shall be the same as the previous interval.

LA01

CTS 3/4.7.7

Note 5: If the number of unacceptable snubbers is equal to or greater than the number in Column C, the next inspection interval shall be two-thirds of the previous interval. However, if the number of unacceptable snubbers is less than the number in Column C but greater than the number in Column B, the next interval shall be reduced proportionally by interpolation, that is, the previous interval shall be reduced by a factor that is one-third of the ratio of the difference between the number of unacceptable snubbers found during the previous interval and the number in Column B to the difference in the numbers in Columns B and C.

Note 6: The provisions of Specification 4.0.2 are applicable for all inspection intervals up to and including 48 months, with the exception that inspection of inaccessible snubbers may be deferred to the next shutdown when plant conditions allow five days for inspection.

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PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

c. Acceptance Criteria

A snubber shall be considered OPERABLE as a result of a visual inspection if: (1) there are no visible indications of damage or inoperability, and (2) attachments to the foundation or supporting structure are secure.

d. Response to Failures

For each snubber unit which does not meet the visual inspection acceptance criteria of Specification 4.7.7.1.c:

1. Determine the snubber OPERABLE by functionally testing the snubber in the as-found condition per Specification 4.7.7.2, unless the (hydraulic) snubber was determined inoperable because the fluid port was found uncovered; and

2. Clearly establish and remedy the cause of the rejection for that particular snubber and for other snubbers that may be generically susceptible; and

3. Classify the snubber as acceptable for the purpose of establishing the next visual inspection interval.

LA01

OR

1. Perform the ACTION specified in 3.7.7a; and

2. Perform an engineering evaluation as specified in 3.7.7.b; and

3. Classify the snubber as unacceptable and establish the frequency of group inspection as described in Specification 4.7.7.1.b.

e. Transient Event Inspection

An inspection shall be performed of all hydraulic and mechanical snubbers attached to sections of systems that have experienced unexpected, potentially damaging transients as determined from a review of operational data. A visual inspection of the snubbers on these systems shall be performed within six months following such an event. In addition to satisfying the visual inspection acceptance criteria, freedom-of-motion of mechanical snubbers shall be verified using at least one of the following: (1) manually induced snubber movement; or (2) evaluation of in-place snubber piston setting; or (3) stroking the mechanical snubber through its full range of travel.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.7.7.2 Functional Test Program

a. General Requirements

At least once per inspection interval a representative sample of each group of snubber in use in the Plant shall be functionally tested in accordance with Specifications 4.7.7.2.b and 4.7.7.2.c. Response to the failures shall be in accordance with Specification 4.7.7.2.d.

For all snubbers, functional testing shall consist of either bench testing or in-place testing.

b. Inspection Interval and Sample Criteria

The snubbers may be categorized into groups based on physical characteristics and accessibility. Each group may be tested independently from the standpoint of performing additional tests if failures are discovered.

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PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

The inspection interval for functional testing shall be each REFUELING INTERVAL.

Snubbers which are scheduled for removal for seal maintenance may be included in the test sample prior to any maintenance on the snubber.

The representative sample shall consist of at least 10 percent (rounded off to next highest integer) of each group of snubbers in use in the Plant. The selection process shall ensure that all snubbers, regardless of their accessibility classification, are functionally tested at least once every ten inspection intervals.

c. Acceptance Criteria

For hydraulic snubbers (either inplace testing or bench testing), the test shall verify that:

1. Snubber piston will allow the hydraulic fluid to "bypass" from one side of the piston to the other to assure unrestrained action is achieved within the specified range of velocity or acceleration in both tension and compression.

2. When the snubber is subjected to a movement which creates a load condition that exceeds the specified range of velocity or acceleration, the hydraulic fluid is trapped in one end of the snubber causing suppression of that movement.

3. Snubber release rate or bleed rate, where required, occurs in compression and tension.

For mechanical snubber in place and bench testing, the test shall verify that:

1. The force that initiates free movement of the snubber rod in either tension or compression is less than the specified maximum drag force.

2. Activation (restraining action) is achieved in both tension and compression within the specified range.

LA01

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

d. Response to Failures

For each inoperable snubber per Specification 4.7.7.2.c:

1. Perform the ACTIONS specified in 3.7.7a and 3.7.7b; and

2. Within the specified inspection interval, functionally test an additional sample of at least 10 percent of the snubber units from the group that the inoperable snubber unit is in.

   The functional testing of an additional sample of at least 10 percent from the inoperable snubber's group is required for each snubber unit determined to be inoperable in subsequent functional tests, or until all snubbers in that group have been tested; and

3. The cause of snubber failure will be evaluated and, if caused by a manufacturing or design deficiency, all snubbers of the same or similar design subject to the same defect shall be functionally tested within 90 days from determining snubber inoperability. This testing requirement shall be independent of the requirements in 4.7.7.2.d(2) above.

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DISCUSSION OF CHANGES
CTS 3/4.7.7, SNUBBERS

ADMINISTRATIVE CHANGES

None

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 4 – Removal of LCO, SR, or other TS requirement to the TRM, UFSAR, ODCM, QAPM, IST Program, or IIP)* CTS 3.7.7 provides the requirements for all safety-related snubbers. This specification with the exception of CTS 3.7.7 Action a is not included in the ITS. This changes the CTS by moving the explicit snubber requirements from the Technical Specifications to the Technical Requirements Manual (TRM).

The removal of these details from the Technical Specification is acceptable because this type of information is not necessary to provide adequate protection of public health and safety. The purpose of CTS 3.7.7 Action a 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 by approved relief requests. Therefore, both Davis-Besse 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 currently incorporated by reference into the UFSAR, thus any changes to the TRM are made under 10 CFR 50.59, which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because a requirement is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

None

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
CTS 3/4.7.7, SNUBBERS

There are no specific NSHC discussions for this Specification.

CTS 3/4.7.8, SEALED SOURCE CONTAMINATION

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

R01

PLANT SYSTEMS

3/4.7.8 SEALED SOURCE CONTAMINATION

LIMITING CONDITION FOR OPERATION

3.7.8.1 Each sealed source containing radioactive material either in excess of 100 microcuries of beta and/or gamma emitting material or 5 microcuries of alpha emitting material shall be free of $\geq$ 0.005 microcuries of removable contamination.

APPLICABILITY: At all times.

ACTION:

a. Each sealed source with removable contamination in excess of the above limit shall be immediately withdrawn from use and:

   1. Either decontaminated and repaired, or

   2. Disposed of in accordance with Commission Regulations.

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

SURVEILLANCE REQUIREMENTS

4.7.8.1.1 Test Requirements - Each sealed source shall be tested for leakage and/or contamination by:

a. The licensee, or

b. Other persons specifically authorized by the Commission or an Agreement State.

The test method shall have a detection sensitivity of at least 0.005 microcuries per test sample.

4.7.8.1.2 Test Frequencies - Each category of sealed sources shall be tested at the frequency described below.

a. Sources in use (excluding startup sources and fission detectors previously subjected to core flux) - At least once per six months for all sealed sources containing radioactive material:

(Tables 3.7-3 and 4.7-4 deleted.
Previous page is 3/4 7-24.)

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PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

1. With a half-life greater than 30 days (excluding Hydrogen 3) and

2. In any form other than gas.

b. Stored sources not in use - Each sealed source and fission detector shall be tested prior to use or transfer to another licensee unless tested within the previous six months. Sealed sources and fission detectors transferred without a certificate indicating the last test date shall be tested prior to being placed into use.

c. Startup sources and fission detectors - Each sealed startup source and fission detector shall be tested within 31 days prior to being subjected to core flux or installed in the core and following repair or maintenance to the source.

4.7.8.1.3 Reports - A report shall be prepared and submitted to the Commission on an annual basis if sealed source or fission detector leakage tests reveal the presence of ≥ 0.005 microcuries of removable contamination.

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DISCUSSION OF CHANGES
CTS 3/4.7.8, SEALED SOURCE CONTAMINATION

ADMINISTRATIVE CHANGES

None

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

R01 CTS 3.7.8.1 states that each sealed source containing radioactive material either in excess of 100 microcuries of beta and/or gamma emitting material or 5 microcuries of alpha emitting material shall be free of $\geq$ 0.005 microcuries of removable contamination. The limitations on sealed source contamination are intended to ensure that the total body and individual organ irradiation doses do not exceed allowable limits in the event of ingestion or inhalation. This is done by imposing a maximum limitation of < 0.005 microcuries of removable contamination on each sealed source. This requirement and the associated surveillance requirements bear no relation to the conditions or limitations that are necessary to ensure safe reactor operation. This specification does not meet the criteria for retention in the ITS; therefore, it is not included in the ITS. This changes the CTS by relocating the Specification to the Technical Requirements Manual (TRM).

This change is acceptable because CTS 3.7.8.1 does not meet the 10 CFR 50.36(c)(2)(ii) criteria for inclusion into the ITS.

10 CFR 50.36(c)(2)(ii) Criteria Evaluation:

1. Sealed source contamination is not used for, nor capable of, detecting a significant abnormal degradation of the reactor coolant pressure boundary prior to a design basis accident (DBA).

2. Sealed source contamination is not a process variable, design feature, or operating restriction that is an initial condition of a DBA or transient.

3. Sealed source contamination is not part of a primary success path in the mitigation of a DBA or transient.

4. As discussed in B&W Owners Group Technical Report 47-1170689-00 (Appendix A pages A-77 and A-78), sealed source contamination was found to be non-significant risk contributor to core damage frequency and offsite releases. Davis-Besse has reviewed this evaluation, considers it applicable to Davis-Besse Nuclear Power Station, and concurs with the assessment.

Since the 10 CFR 50.36(c)(2)(ii) criteria have not been met, the Sealed Source Contamination LCO and associated Surveillance may be relocated out of the Technical Specifications. The Sealed Source Contamination Specification will be

DISCUSSION OF CHANGES
CTS 3/4.7.8, SEALED SOURCE CONTAMINATION

relocated to the TRM. The TRM is currently incorporated by reference into the UFSAR, thus any changes to the TRM are made under 10 CFR 50.59, which ensures changes are properly evaluated. 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 3/4.7.8, SEALED SOURCE CONTAINMENT

There are no specific NSHC discussions for this Specification.

ATTACHMENT 20

Improved Standard Technical Specifications (ISTS) not adopted in the Davis-Besse ITS

ISTS 3.7.4, ATMOSPHERIC VENT VALVES

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

3.7 PLANT SYSTEMS

3.7.4 Atmospheric Vent Valves (AVVs)

LCO 3.7.4 [Two] AVVs [lines per steam generator] 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
A. One required AVV [line] inoperable.	A.1 Restore required AVV [line] to OPERABLE status.	[7 days]
B. [Two or more required AVV [lines] inoperable.	B.1 Restore all but one AVV [line] to OPERABLE status.	24 hours]
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

1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.4.1	Verify one complete cycle of each AVV.	[18] months

SURVEILLANCE REQUIREMENTS (continued)

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

1

JUSTIFICATION FOR DEVIATIONS
ISTS 3.7.4, ATMOSPHERIC VENT VALVES (AVVs)

1. ISTS 3.7.4, "Atmospheric Vent Valves (AVVs)" is not being adopted because Davis-Besse does not credit the AVVs in the accident analysis. ISTS 3.7.4 Bases Background Section states that the Atmospheric Vent Valves (AVVs) provide a method for cooling the unit to decay heat removal (DHR) entry conditions, should the preferred heat sink via the Turbine Bypass System to the condenser not be available. ISTS 3.7.4 Bases Applicable Safety Analyses Section further states that the AVVs are assumed to be used by the operator to cool down the unit to MODE 3 for accidents accompanied by a loss of offsite power. At Davis-Besse, the AVVs are not credited in the accident analysis. Steaming the non-faulted steam generator to the main condenser and the Main Steam Safety Valves are credited with this function. Therefore, it is not necessary to include the AVVs.

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

B 3.7 PLANT SYSTEMS

B 3.7.4 Atmospheric Vent Valves (AVVs)

BASES

BACKGROUND

The AVVs provide a method for cooling the unit to decay heat removal (DHR) entry conditions, should the preferred heat sink via the Turbine Bypass System to the condenser not be available, as discussed in the FSAR, Section [10.3] (Ref. 1). This is done in conjunction with the Emergency Feedwater System, providing cooling water from the condensate storage tank (CST). The AVVs 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 Turbine Bypass System.

[The AVVs are provided with upstream block valves to permit their being tested at power, and to provide an alternate means of isolation.]

The AVVs are equipped with pneumatic controllers to permit control of the cooldown rate.

[The AVVs are provided with a pressurized gas supply of bottled nitrogen that, on loss of pressure in the normal instrument air supply, automatically supplies nitrogen to operate the AVVs. The nitrogen supply is sized to provide sufficient pressurized gas to operate the AVVs for the time required for Reactor Coolant System (RCS) cooldown to DHR entry conditions.] 1

A description of the AVVs is found in Reference 1.

APPLICABLE SAFETY ANALYSES

The design basis of the AVVs is established by the capability to cool the unit to MODE 3. The design rate of [75]°F per hour is applicable for both steam generators, each with one AVV. This rate is adequate to cool the unit to DHR entry conditions with only one AVV and one steam generator utilizing the cooling water supply available in the CST.

In the accident analysis presented in Reference 1, the AVVs are assumed to be used by the operator to cool down the unit to MODE 3 for accidents accompanied by a loss of offsite power. Prior to operator actions to cool down the unit, the AVVs and the main steam safety valves (MSSVs) are assumed to operate automatically to relieve steam and maintain the

BASES

APPLICABLE SAFETY ANALYSES (continued)

steam generator's pressure and temperature below the design value. This is about 30 minutes following initiation of an event; however, this may be less for a steam generator tube rupture (SGTR) event. Some initiating events falling into this category are a main steam line break upstream of the main steam isolation valves, a feedwater line break, and an SGTR event (although the AVVs on the affected steam generator may still be available following an SGTR event).

For the recovery from an 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 DHR conditions for this event, and also for other accidents. Thus, the SGTR is the limiting event for the AVVs. The number of AVVs required to be OPERABLE to satisfy the SGTR accident analysis requirements depends upon the consideration of any single failure assumptions regarding the failure of one AVV to open on demand.

[The design must accommodate the single failure of one AVV to open on demand, thus each steam generator must have at least one AVV. The AVVs are equipped with manual block valves in the event an AVV spuriously fails open, or fails to close during use.] 1

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

LCO

[Two] AVVs [lines per steam generator] are required to be OPERABLE. Failure to meet the LCO can result in the inability to cool the unit to DHR entry conditions following an event in which the condenser is unavailable for use with the Steam Bypass System.

An AVV is considered OPERABLE when it is capable of providing a controlled relief of the main steam flow, and is capable of fully opening and closing on demand.

APPLICABILITY

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

In MODES 5 and 6, an SGTR is not a credible event.

BASES

ACTIONS

A.1

With one AVV [line] inoperable, action must be taken to restore the inoperable AVV to OPERABLE status. The 7 day Completion Time allows for redundant capability afforded by the remaining OPERABLE AVV and a nonsafety grade backup in the Steam Bypass System and MSSVs.

[B.1

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

C.1 and C.2

If the AVV [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 within [24] hours, without reliance upon the steam generator for heat removal. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. 1

SURVEILLANCE REQUIREMENTS

SR 3.7.4.1

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

BASES

SURVEILLANCE REQUIREMENTS (continued)

[SR 3.7.4.2

The function of the block valve is to isolate a failed open AVV. Cycling the block valve closed and open demonstrates its ability 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. Therefore, the Frequency is acceptable from a reliability standpoint.]

REFERENCES 1. FSAR, Section [10.3].

1

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JUSTIFICATION FOR DEVIATIONS
ISTS 3.7.4 BASES, ATMOSPHERIC VENT VALVES (AVVs)

1. Changes are made to be consistent with changes made to the Specification.

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