

Industry/TSTF Standard Technical Specification Change Traveler

Allowed Outage Time - Ultimate heat sink

Classification: 3) Improve Specifications

NUREGs Affected: 1430 1431 1432 1433 1434

Description:

If the UHS is inoperable, the plant is required to be placed in the cold shutdown condition. No time is allowed for water temperature to exceed its limit without initiating preparations to shutdown the plant. The proposed change provides additional Required Actions to restore the UHS to OPERABLE status within a Completion Time of 8 hours. The proposed change provides a new Condition and Required Action that would allow averaging the UHS water temperature over the previous 24 hour period once per hour.

Justification:

Background

Within the past several years, there appears to have been an increasing number of licensees that have either requested enforcement discretion or exigent/emergency technical specification changes to deal with exceeding the Ultimate Heat Sink (UHS) limits, specifically temperature. This prompted in December 1998 a proposed traveler (WOG-134, subsequently TSTF-330) to allow an Allowed Outage Time (AOT) for UHS level and temperature not within limits. In April 1999, TSTF-330 was provided to the NRC for review and approval.

In August 1999, Brian Sheron discussed the UHS issue at the BWR Owners Group meeting and noted that NRC management has indicated that an AOT approach to the issue was not a proper fit for the UHS technical specification.

In September 1999, George Hubbard discussed with the Licensing Actions Task Force (LATF) the staff's unhappiness with the number of Notices of Enforcement Discretions filed in the summer of 1999. The LATF took this as an action item and subsequently determined that since this was not really a "process issue" to hand it off to the TSTF.

At the October 1999 TSTF/NRC meeting, the staff indicated that TSTF-330 as proposed was not going to be approved and that maybe changes in the design or design basis was necessary or that current UHS analysis may contain margins that would provide some flexibility to the UHS limits.

In February 2000, the staff proposed draft UHS ACTIONS that entailed some form of verification that cooling capacity was being maintained (see Enclosure 1). This verification of cooling capacity would utilize available margins in current plant analysis to support a second tier temperature/level limit.

At the March 7-8, 2000, TSTF/NRC meeting, the TSTF approach on this issue was to 1) gain a better understanding of the staff's February 2000 proposal and 2) recommend the staff approve the AOT approach as the near term resolution with the summer months approaching. The staff clearly indicated that the AOT approach was not an option because NRC management concern that it was not appropriate to allow an AOT in which there was no specific operator/licensee action that could reasonably be taken to restore from the conditions (i.e., relying on environmental conditions to restore the TS limits). From this meeting the TSTF was to perform an industry survey in an effort to develop a generic approach/resolution.

At the May 9, 2000, TSTF NRC meeting, the results of the survey were presented to the NRC. The results indicated that 26% (22 out of 86) of the units responding have challenged the UHS limits. From the survey results there was limited (one or two units) that have indicated any concern with challenging UHS TS level limits. Therefore, TSTF-330 Rev. 0 was modified to eliminate any proposed changes associated with level and any changes to level would be on a plant specific basis. The results clearly indicated that accounting for single failure assumptions in the plant specific analysis results in additional temperature margin. At this meeting, the NRC discussed the temperature averaging concept that had been approved for the Brunswick plant during their ITS conversion and a strong desire to follow this approach.

From the different UHS designs and analysis there appears to be no one common approach that will accommodate all

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units. Therefore, an averaging approach is being proposed as a solution for resolving the UHS temperature issue but plants may provide an alternative to this approach if properly justified. Additionally, the averaging approach may not resolve the need for enforcement discretion in all cases.

Justification

The existing UHS requirements introduce the possibility of additional plant shutdown transients. Potential plant shutdown transients could be reduced by the additional Required Action to average UHS water temperature on a more frequent basis. A plant shutdown would be required if the averaged UHS water temperature limit were exceeded or if the maximum temperature limit were exceeded. With the water temperature of the UHS exceeding the SR limit but less than a maximum allowed value (specified in the Required Action), the design basis assumptions associated with initial UHS temperatures are bounded provided the temperature of the UHS averaged over the previous 24 hour period is less than the SR limit. With the water temperature of the UHS greater than the SR limit, long term cooling capability to dissipate the heat of an accident safely may be affected. Therefore, to ensure long term cooling capability when UHS water temperature is above the SR limit, more frequent monitoring and averaging of the temperature over the previous 24 hour period is required.

The maximum allowed UHS temperature value should be based on the design basis temperature of the equipment necessary for accident mitigation and safe shutdown of the unit. If the maximum allowed UHS temperature value results in exceeding the design basis temperature of the equipment, justification supporting that the equipment will continue to function in the event of an accident is required in the license amendment request.

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Revision History

OG Revision 0

Revision Status: Closed

Revision Proposed by: H. B. Robinson

Revision Description:
Original Issue

Owners Group Review Information

Date Originated by OG: 01-Dec-98

Owners Group Comments
(No Comments)

Owners Group Resolution: Approved Date: 01-Dec-98

TSTF Review Information

TSTF Received Date: 19-Feb-99 Date Distributed for Review 09-Mar-99

OG Review Completed: BWO WOG CEOG BWROG

TSTF Comments:
Applicable to all Ogs

TSTF Resolution: Approved Date: 09-Apr-99

NRC Review Information

NRC Received Date: 30-Apr-99

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OG Revision 0

Revision Status: Closed

NRC Comments:

6/16/99 - In SPLB

8/30/99 - B. Beckner does not believe that this change can be in Rev. 2 due to not having high level agreement. The solution may not be TS.

10/13/99 - BWROG agreed to address this issue. NRC Brian Shearon wanted a fix other than an AOT fix - such as design, procedure, etc.

1/10/00 - BWROG to discuss with NRC. NRC leaning towards other approaches besides AOTs and shutdowns.

2/10/00 - Bill Beckner (NRC) to provide feedback from NRC internal meeting on 2/14/00.

3/7/00 - TSTF surveying plants to determine the exact nature of the problem.

Final Resolution: Superseded by Revision

Final Resolution Date: 14-Jun-00

TSTF Revision 1

Revision Status: Active

Next Action: NRC

Revision Proposed by: WOG

Revision Description:

This revision replaces TSTF-330, Rev. 0. Changes to the UHS specification regarding UHS water level made in Rev. 0 are eliminated. A Condition and Required Action are provided that allow averaging the UHS water temperature over the previous 24 hour period once per hour.

TSTF Review Information

TSTF Received Date: 14-Jun-00

Date Distributed for Review 14-Jun-00

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

(No Comments)

TSTF Resolution: Approved Date: 14-Jun-00

NRC Review Information

NRC Received Date: 20-Jun-00

NRC Comments:

(No Comments)

Final Resolution: NRC Action Pending

Final Resolution Date:

Incorporation Into the NUREGs

File to BBS/LAN Date:

TSTF Informed Date:

TSTF Approved Date:

NUREG Rev Incorporated:

Affected Technical Specifications

Action 3.7.9.B

Ultimate Heat Sink

NUREG(s)- 1430 1431 1432 Only

Change Description: Renamed Action C

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Action 3.7.9.B	Ultimate Heat Sink Change Description: New Action	NUREG(s)- 1430 1431 1432 Only
Action 3.7.9.B Bases	Ultimate Heat Sink Change Description: New Action	NUREG(s)- 1430 1431 1432 Only
Action 3.7.9.B Bases	Ultimate Heat Sink Change Description: Renamed Action C	NUREG(s)- 1430 1431 1432 Only
Action 3.7.2.D	[PSW] System and [UHS] Change Description: Renamed Action E	NUREG(s)- 1433 Only
Action 3.7.2.D	[PSW] System and [UHS] Change Description: New Action	NUREG(s)- 1433 Only
Action 3.7.2.D Bases	[PSW] System and [UHS] Change Description: New	NUREG(s)- 1433 Only
Action 3.7.2.D Bases	[PSW] System and [UHS] Change Description: Renamed Action E	NUREG(s)- 1433 Only
Action 3.7.2.E	[PSW] System and [UHS] Change Description: Renamed Action F	NUREG(s)- 1433 Only
Action 3.7.2.E Bases	[PSW] System and [UHS] Change Description: Renamed Action F	NUREG(s)- 1433 Only
Action 3.7.1.B	[SSW] System and [UHS] Change Description: New	NUREG(s)- 1434 Only
Action 3.7.1.B	[SSW] System and [UHS] Change Description: Renamed Action C	NUREG(s)- 1434 Only
Action 3.7.1.B Bases	[SSW] System and [UHS] Change Description: New	NUREG(s)- 1434 Only
Action 3.7.1.B Bases	[SSW] System and [UHS] Change Description: Renamed Action C	NUREG(s)- 1434 Only
Action 3.7.1.C	[SSW] System and [UHS] Change Description: Renamed Action D	NUREG(s)- 1434 Only
Action 3.7.1.C Bases	[SSW] System and [UHS] Change Description: Renamed Action D	NUREG(s)- 1434 Only

6/19/00

INSERT A (BWO, WOG, CEOG)

<p>[----- Reviewer's Note ----- The [] °F is the maximum allowed UHS temperature value and is based on the design basis temperature of the equipment necessary for accident mitigation and safe shutdown of the unit. ----- B. Water temperature of the UHS > [90]°F and ≤ [] °F.]</p>	<p>[B.1 Verify water temperature of the UHS is ≤ [90]°F averaged over the previous 24 hour period.]</p>	<p>[Once per hour]</p>
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INSERT B (BWO, WOG, CEOG)

[B.1]

[----- Reviewer's Note -----
The [] °F is the maximum allowed UHS temperature value and is based on the design basis temperature of the equipment necessary for accident mitigation and safe shutdown of the unit.
 -----]

[With water temperature of the UHS > [90]°F and ≤ [] °F, the design basis assumption associated with initial UHS temperature are bounded provided the temperature of the UHS averaged over the previous 24 hour period is < [90]°F. With the water temperature of the UHS > [90]°F, long term cooling capability of the ECCS loads and DGs may be affected. Therefore, to ensure long term cooling capability is provided to the ECCS loads when water temperature of the UHS is > [90]°F, Required Action B.1 is provided to more frequently monitor the water temperature of the UHS and verify the temperature is ≤ [90]°F when averaged over the previous 24 hour period. The once per hour Completion Time takes into consideration UHS temperature variations and the increased monitoring frequency needed to ensure design basis assumptions 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.]

3.7 PLANT SYSTEMS

3.7.9 Ultimate Heat Sink (UHS)

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
<p>Insert A →</p> <p>E →</p> <p>B → Required Action and associated Completion Time of Condition A, not met.</p> <p>OR</p> <p>or B →</p> <p>UHS inoperable [for reasons other than Condition A].</p>	<p>C →</p> <p>B.1 Be in MODE 3.</p> <p>AND</p> <p>B.2 Be in MODE 5.</p> <p>C →</p>	<p>6 hours</p> <p>36 hours</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.9.1 Verify water level of UHS is \geq [562] ft [mean sea level].	24 hours

(continued)

BASES (continued)

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.

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.

A.1 and A.2 If the Required Actions and Completion Times of Conditions [A or B] are not met, or

[If the cooling tower fan cannot be restored to OPERABLE status within the associated Completion Time, or] if the UHS is inoperable [for reasons other than Condition A], the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

Insert B

or B

SURVEILLANCE REQUIREMENTS

SR 3.7.9.1

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 $\geq []$ ft [mean sea level].

SR 3.7.9.2

This SR verifies that the SWS can cool the CCW System to at least its maximum design temperature within the maximum

(continued)

INSERT A (BWO, WOG, CEOG)

<p>[----- Reviewer's Note ----- The [] °F is the maximum allowed UHS temperature value and is based on the design basis temperature of the equipment necessary for accident mitigation and safe shutdown of the unit. ----- B. Water temperature of the UHS > [90]°F and ≤ [] °F.]</p>	<p>[B.1 Verify water temperature of the UHS is ≤ [90]°F averaged over the previous 24 hour period.]</p>	<p>[Once per hour]</p>
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INSERT B (BWO, WOG, CEOG)

[B.1]

[----- Reviewer's Note -----
The [] °F is the maximum allowed UHS temperature value and is based on the design basis temperature of the equipment necessary for accident mitigation and safe shutdown of the unit.
-----]

[With water temperature of the UHS > [90]°F and ≤ [] °F, the design basis assumption associated with initial UHS temperature are bounded provided the temperature of the UHS averaged over the previous 24 hour period is < [90]°F. With the water temperature of the UHS > [90]°F, long term cooling capability of the ECCS loads and DGs may be affected. Therefore, to ensure long term cooling capability is provided to the ECCS loads when water temperature of the UHS is > [90]°F, Required Action B.1 is provided to more frequently monitor the water temperature of the UHS and verify the temperature is ≤ [90]°F when averaged over the previous 24 hour period. The once per hour Completion Time takes into consideration UHS temperature variations and the increased monitoring frequency needed to ensure design basis assumptions 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.]

3.7 PLANT SYSTEMS

3.7.9 Ultimate Heat Sink (UHS)

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
<p><i>Insert A</i> →</p> <p>Ⓟ. Required Action and associated Completion Time of Condition A not met.</p> <p><i>or B</i></p> <p>OR</p> <p>UHS inoperable [for reasons other than Condition A].</p>	<p>Ⓟ.1 Be in MODE 3.</p> <p>AND</p> <p>Ⓟ.2 Be in MODE 5.</p>	<p>6 hours</p> <p>36 hours</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.9.1 Verify water level of UHS is \geq [562] ft [mean sea level].	24 hours

(continued)

BASES (continued)

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 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.

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, the number of available systems, and the time required to complete the action.

Insert B

B.1 and B.2

If the Required Actions or Completion Times of Conditions [A or B] are not met, or

If [the cooling tower fan cannot be restored to OPERABLE status within the associated Completion Time, or if] the UHS is inoperable [for reasons other than Condition A], the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.9.1

This SR verifies adequate long term (30 days) cooling can be maintained. The level specified also ensures sufficient NPSH is available for operating the SWS pumps. The 24 hour Frequency is based on operating experience related to the

(continued)

INSERT A (BWO, WOG, CEOG)

<p>[----- Reviewer's Note ---- The [] °F is the maximum allowed UHS temperature value and is based on the design basis temperature of the equipment necessary for accident mitigation and safe shutdown of the unit.</p> <p>-----</p> <p>B. Water temperature of the UHS > [90]°F and ≤ [] °F.]</p>	<p>[B.1 Verify water temperature of the UHS is ≤ [90]°F averaged over the previous 24 hour period.]</p>	<p>[Once per hour]</p>
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INSERT B (BWO, WOG, CEOG)

[B.1]

[----- Reviewer's Note -----
The [] °F is the maximum allowed UHS temperature value and is based on the design basis temperature of the equipment necessary for accident mitigation and safe shutdown of the unit.
-----]

[With water temperature of the UHS > [90]°F and ≤ [] °F, the design basis assumption associated with initial UHS temperature are bounded provided the temperature of the UHS averaged over the previous 24 hour period is < [90]°F. With the water temperature of the UHS > [90]°F, long term cooling capability of the ECCS loads and DGs may be affected. Therefore, to ensure long term cooling capability is provided to the ECCS loads when water temperature of the UHS is > [90]°F, Required Action B.1 is provided to more frequently monitor the water temperature of the UHS and verify the temperature is ≤ [90]°F when averaged over the previous 24 hour period. The once per hour Completion Time takes into consideration UHS temperature variations and the increased monitoring frequency needed to ensure design basis assumptions 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.]

3.7 PLANT SYSTEMS

3.7.9 Ultimate Heat Sink (UHS)

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
<p><i>Insert A</i></p> <p><i>B</i> Required Action and associated Completion Time of Condition A not met.</p> <p><i>OR</i></p> <p>UHS inoperable [for reasons other than Condition A].</p> <p><i>or B</i></p>	<p><i>B.1</i> Be in MODE 3.</p> <p><u>AND</u></p> <p><i>B.2</i> Be in MODE 5.</p>	<p>6 hours</p> <p>36 hours</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.9.1 Verify water level of UHS is \geq [562] ft [mean sea level].	[24] hours

(continued)

BASES (continued)

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

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

ACTIONS

A.1

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

The 7 day Completion Time is reasonable based on the low probability of an accident occurring during the 7 days that one cooling tower fan is inoperable (in one or more cooling towers), the number of available systems, and the time required to reasonably complete the Required Action.

Insert B

C

3.1 and 3.2

If the Required Actions and Completion Times of Conditions [A or B] are not met, or

~~[If the cooling tower fan cannot be restored to OPERABLE status within the associated Completion Time, or] if the UHS is inoperable for reasons other than Condition A, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours and in MODE 5 within 36 hours.~~

[or B]

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 3.7.9.1

This SR verifies that adequate long term (30 day) cooling can be maintained. The specified level also ensures that sufficient NPSH is available to operate the SWS pumps. The [24] hour Frequency is based on operating experience related to trending of the parameter variations during the

(continued)

INSERT C (BWR/4)

<p>[----- Reviewer's Note ----- The [] °F is the maximum allowed UHS temperature value and is based on the design basis temperature of the equipment necessary for accident mitigation and safe shutdown of the unit.</p> <p>-----</p> <p>D. Water temperature of the UHS > [90]°F and ≤ [] °F.]</p>	<p>[D.1 Verify water temperature of the UHS is ≤ [90]°F averaged over the previous 24 hour period.]</p>	<p>[Once per hour]</p>
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INSERT D (BWR/4)D.1

[----- Reviewer's Note -----
The [] °F is the maximum allowed UHS temperature value and is based on the design basis temperature of the equipment necessary for accident mitigation and safe shutdown of the unit.
-----]

[With water temperature of the UHS > [90]°F and ≤ [] °F, the design basis assumption associated with initial UHS temperature are bounded provided the temperature of the UHS averaged over the previous 24 hour period is < [90]°F. With the water temperature of the UHS > [90]°F, long term cooling capability of the ECCS loads and DGs may be affected. Therefore, to ensure long term cooling capability is provided to the ECCS loads when water temperature of the UHS is > [90]°F, Required Action D.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 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 F must be entered immediately.]

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INFORMATION ONLY

3.7.2

TSTF 330 Rev 1

3.7 PLANT SYSTEMS

3.7.2 [Plant Service Water (PSW)] System and [Ultimate Heat Sink (UHS)]

LCO 3.7.2 Two [PSW] subsystems and [UHS] shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One [PSW] pump inoperable.	A.1 Restore [PSW] pump to OPERABLE status.	30 days
B. One [PSW] pump in each subsystem inoperable.	B.1 Restore one [PSW] pump to OPERABLE status.	7 days
C. One or more cooling towers with one cooling tower fan inoperable.	C.1 Restore cooling tower fan(s) to OPERABLE status.	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p><i>E</i> One [PSW] subsystem inoperable for reasons other than Condition[s] A [and C].</p>	<p><i>E</i> B.1</p> <p>-----NOTES-----</p> <ol style="list-style-type: none"> 1. Enter applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources—Operating," for diesel generator made inoperable by [PSW]. 2. Enter applicable Conditions and Required Actions of LCO 3.4.8, "Residual Heat Removal (RHR) Shutdown Cooling System—Hot Shutdown," for [RHR shutdown cooling] made inoperable by [PSW]. <p>-----</p> <p>Restore the [PSW] subsystem to OPERABLE status.</p>	<p>72 hours</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>F 5. Required Action and associated Completion Time of Condition A, B, A not met. [or D] AND F 2.1</p> <p>OR</p> <p>Both [PSW] subsystems inoperable for reasons other than Condition[s] B [and C].</p> <p>OR</p> <p>[UHS] inoperable for reasons other than Condition [or D].</p>	<p>F 2.1 Be in MODE 3.</p>	<p>12 hours</p>
	<p>F 2.2 Be in MODE 4.</p>	<p>36 hours</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.7.2.1 Verify the water level of each [PSW] cooling tower basin is \geq [] ft.</p>	<p>24 hours []</p>
<p>SR 3.7.2.2 Verify the water level [in each PSW pump well of the intake structure] is \geq [60.1] ft [mean sea level].</p>	<p>24 hours []</p>
<p>SR 3.7.2.3 Verify the average water temperature of [UHS] is \leq []°F.</p>	<p>24 hours []</p>

(continued)

TST 330 Rev 1

BASES

ACTIONS

INSERT
D

C.1 (continued)

the time required to reasonably complete the Required Action.

E 1

With one [PSW] subsystem inoperable for reasons other than Condition A and [Condition C] (e.g., inoperable flow path or both pumps inoperable in a loop), the [PSW] subsystem must be restored to OPERABLE status within 72 hours. With the unit in this condition, the remaining OPERABLE [PSW] subsystem is adequate to perform the heat removal function. However, the overall reliability is reduced because a single failure in the OPERABLE [PSW] subsystem could result in loss of [PSW] function.

The 72 hour Completion Time is based on the redundant [PSW] System capabilities afforded by the OPERABLE subsystem, the low probability of an accident occurring during this time period, and is consistent with the allowed Completion Time for restoring an inoperable DG.

Required Action E 1 is modified by two Notes indicating that the applicable Conditions of LCO 3.8.1, "AC Sources—Operating," LCO 3.4.8, "Residual Heat Removal (RHR) Shutdown Cooling System—Hot Shutdown," be entered and Required Actions taken if the inoperable [PSW] subsystem results in an inoperable DG or RHR shutdown cooling subsystem, respectively. This is in accordance with LCO 3.0.6 and ensures the proper actions are taken for these components.

F 1 and F 2

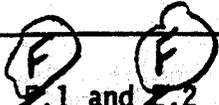
[or D]

If the [PSW] subsystem cannot be restored to OPERABLE status within the associated Completion Time, or both [PSW] subsystems are inoperable for reasons other than Condition B and [Condition C], [or the [UHS] is determined inoperable for reasons other than Condition C] the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 12 hours and in MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full

(continued)

BASES

ACTIONS



2.1 and 2.2 (continued)

power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.2.1

This SR ensures adequate long term (30 days) cooling can be maintained. With the [UHS] water source below the minimum level, the affected [PSW] subsystem must be declared inoperable. The 24 hour Frequency is based on operating experience related to trending of the parameter variations during the applicable MODES.

SR 3.7.2.2

This SR verifies the water level [in each pump well of the intake structure] to be sufficient for the proper operation of the [PSW] pumps (net positive suction head and pump vortexing are considered in determining this limit). The 24 hour Frequency is based on operating experience related to trending of the parameter variations during the applicable MODES.

SR 3.7.2.3

Verification of the [UHS] temperature ensures that the heat removal capability of the [PSW] System is within the assumptions of the DBA analysis. The 24 hour Frequency is based on operating experience related to trending of the parameter variations during the applicable MODES.

SR 3.7.2.4

Operating each cooling tower fan for ≥ 15 minutes ensures that all fans are OPERABLE and that all associated controls are functioning properly. It also ensures that fan or motor failure, or excessive vibration, can be detected for corrective action. The 31 day Frequency is based on operating experience, the known reliability of the fan units, the redundancy available, and the low probability of

(continued)

INSERT E (BWR/6)

<p>[----- Reviewer's Note ----- The [] °F is the maximum allowed UHS temperature value and is based on the design basis temperature of the equipment necessary for accident mitigation and safe shutdown of the unit.</p> <p>-----</p> <p>B. Water temperature of the UHS > [90]°F and ≤ [] °F.]</p>	<p>[B.1 Verify water temperature of the UHS is ≤ [90]°F averaged over the previous 24 hour period.]</p>	<p>[Once per hour]</p>
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INSERT F (BWR/6)**B.1**

[----- Reviewer's Note -----
The [] °F is the maximum allowed UHS temperature value and is based on the design basis temperature of the equipment necessary for accident mitigation and safe shutdown of the unit.
-----]

[With water temperature of the UHS > [90]°F and ≤ [] °F, the design basis assumption associated with initial UHS temperature are bounded provided the temperature of the UHS averaged over the previous 24 hour period is < [90]°F. With the water temperature of the UHS > [90]°F, long term cooling capability of the ECCS loads and DGs may be affected. Therefore, to ensure long term cooling capability is provided to the ECCS loads when water temperature of the UHS is > [90]°F, Required Action B.1 is provided to more frequently monitor the water temperature of the UHS and verify the temperature is ≤ [90]°F when averaged over the previous 24 hour period. The once per hour Completion Time takes into consideration UHS temperature variations and the increased monitoring frequency needed to ensure design basis assumptions 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 D must be entered immediately.]

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INFORMATION ONLY

3.7.1

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3.7 PLANT SYSTEMS

3.7.1 [Standby Service Water (SSW)] System and [Ultimate Heat Sink (UHS)]

LCO 3.7.1 Division 1 and 2 [SSW] subsystems and [UHS] shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

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

(continued)

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INSERT E

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C One [SSW] subsystem inoperable [for reasons other than Condition A].</p>	<p>C B.1</p> <p>-----NOTES-----</p> <ol style="list-style-type: none"> 1. Enter applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources—Operating," for diesel generator made inoperable by [SSW]. 2. Enter applicable Conditions and Required Actions of LCO 3.4.9, "Residual Heat Removal (RHR) Shutdown Cooling System—Hot Shutdown," for [RHR shutdown cooling] made inoperable by [SSW]. <p>-----</p> <p>Restore [SSW] subsystem to OPERABLE status.</p>	<p>72 hours</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>Required Action and associated Completion Time of Condition A, [B] AND [C] not met.</p>	Be in MODE 3.	12 hours
OR	Be in MODE 4.	36 hours
Both [SSW] subsystems inoperable [for reasons other than Condition A].		
OR		
[UHS] inoperable for reasons other than Condition A		

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.1.1 Verify the water level of each [UHS] cooling tower basin is \geq [7.25] ft.	24 hours
SR 3.7.1.2 Verify the water level [in each SSW pump well of the intake structure] is \geq [] ft.	24 hours
SR 3.7.1.3 Verify the average water temperature of [UHS] is \leq []°F.	24 hours

(continued)

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BASES (continued)

APPLICABILITY In MODES 1, 2, and 3, the [SSW] System and [UHS] are required to be OPERABLE to support OPERABILITY of the equipment serviced by the [SSW] System and [UHS], and are required to be OPERABLE in these MODES.

In MODES 4 and 5, the OPERABILITY requirements of the [SSW] System and [UHS] are determined by the systems they support.

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.

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.

INSERT
F

C B.1

If one [SSW] subsystem is inoperable [for reasons other than Condition A], it must be restored to OPERABLE status within 72 hours. With the unit in this condition, the remaining OPERABLE [SSW] subsystem is adequate to perform the heat removal function. However, the overall reliability is reduced because a single failure in the OPERABLE [SSW] subsystem could result in loss of [SSW] function. The 72 hour Completion Time was developed taking into account the redundant capabilities afforded by the OPERABLE subsystem and the low probability of a DBA occurring during this period.

The Required Action is modified by two Notes indicating that the applicable Conditions of LCO 3.8.1, "AC Sources—Operating," and LCO 3.4.9, "Residual Heat Removal (RHR) Shutdown Cooling System—Hot Shutdown," be entered and the Required Actions taken if the inoperable [SSW] subsystem results in an inoperable DG or RHR shutdown cooling, respectively. This is in accordance with LCO 3.0.6 and ensures the proper actions are taken for these components.

(continued)

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BASES

ACTIONS
(continued)

D
3.1 and D
3.2

[or B]

If the [SSW] subsystem cannot be restored to OPERABLE status within the associated Completion Time, or both [SSW] subsystems are inoperable [for reasons other than Condition A], or the [UHS] is determined inoperable for reasons other than Condition A], the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 12 hours and in MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE
REQUIREMENTS

SR 3.7.1.1

This SR ensures adequate long term (30 days) cooling can be maintained. With the [UHS] water source below the minimum level, the affected [SSW] subsystem must be declared inoperable. The 24 hour Frequency is based on operating experience related to trending of the parameter variations during the applicable MODES.

SR 3.7.1.2

This SR verifies the water level [in each [SSW] pump well of the intake structure] to be sufficient for the proper operation of the [SSW] pumps (net positive suction head and pump vortexing are considered in determining this limit). The 24 hour Frequency is based on operating experience related to trending of the parameter variations during the applicable MODES.

SR 3.7.1.3

Verification of the [UHS] temperature ensures that the heat removal capability of the [SSW] System is within the assumptions of the DBA analysis. The 24 hour Frequency is based on operating experience related to trending of the parameter variations during the applicable MODES.

(continued)