

Industry/TSTF Standard Technical Specification Change Traveler**Add Note to LCO 3.9.5 Allowing Shutdown Cooling Loops Removal from Operation**

Classification: 3) Improve Specifications

NUREGs Affected: ☒ 1430 ☒ 1431 ☒ 1432 ☐ 1433 ☐ 1434

Description:

Adds an LCO Note to LCO 3.9.5[6 - WOG], SDC/DHR/RHR and Coolant Circulation - Low Water Level, to allow the securing of the operating train of SDC to support switching of SDC loops from one train to another.

Justification:

This activity should be allowed as the allowed time frame is short, and limitations are in place to preclude RCS boron reduction and draining activities. These changes are consistent with the allowances that are currently in place for LCO 3.4.8, RCS Loops - MODE 5, Loops not filled. With the plant in MODE 6 with less than 23 feet of water above the Reactor Vessel flange, the RCS may be in similar inventory status as allowed by LCO 3.4.8, therefore, the allowances should also be consistent.

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Revision History**OG Revision 0****Revision Status: Closed**

Revision Proposed by: CEOG

Revision Description:
Original Issue**Owners Group Review Information**

Date Originated by OG: 17-Mar-99

Owners Group Comments
(No Comments)

Owners Group Resolution: Approved Date: 17-Mar-99

TSTF Review Information

TSTF Received Date: 17-Jun-99

Date Distributed for Review 17-Jun-99

OG Review Completed: ☒ BWOG ☒ WOG ☒ CEOG ☒ BWROG

TSTF Comments:

Applicable to PWRs.

TSTF Resolution: Approved Date: 07-Jul-99

NRC Review Information

NRC Received Date: 20-Jul-99

NRC Comments:

5/9/00 NRC provided comments.

5/26/00

OG Revision 0**Revision Status: Closed**

Final Resolution: Superseded by Revision

Final Resolution Date:

TSTF Revision 1**Revision Status: Active****Next Action: NRC**

Revision Proposed by: NRC

Revision Description:

Revised to incorporate NRC comments. The brackets around item a. of the LCO Note are removed.

TSTF Review Information

TSTF Received Date: 26-May-00

Date Distributed for Review 26-May-00

OG Review Completed: ☒ BWOG ☒ WOG ☒ CEOG ☒ BWROG

TSTF Comments:

(No Comments)

TSTF Resolution: Approved Date: 26-May-00

NRC Review Information

NRC Received Date: 26-May-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

LCO 3.9.5	DHR and Coolant Circulation - Low Water Level	NUREG(s)- 1430 Only
	Change Description: Added LCO Note	
LCO 3.9.5 Bases	DHR and Coolant Circulation - Low Water Level	NUREG(s)- 1430 Only
LCO 3.9.6	RHR and Coolant Circulation - Low Water Level	NUREG(s)- 1431 Only
	Change Description: Added LCO Note	
LCO 3.9.6 Bases	RHR and Coolant Circulation - Low Water Level	NUREG(s)- 1431 Only
LCO 3.9.5	SDC and Coolant Circulation - Low Water Level	NUREG(s)- 1432 Only
	Change Description: Added LCO Note	
LCO 3.9.5 Bases	SDC and Coolant Circulation - Low Water Level	NUREG(s)- 1432 Only

5/26/00

Insert 1 (BWO)

-----NOTE-----
All DHR pumps may be de-energized for ≤ 15 minutes when switching from one train to another provided:

- a. The core outlet temperature is maintained > 10 degrees F below saturation temperature;
 - b. No operations are permitted that would cause a reduction of the Reactor Coolant System boron concentration; and
 - c. No draining operations to further reduce RCS water volume are permitted.
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INSERT 2 (BWO)

This LCO is modified by a Note that permits the DHR pumps to be de-energized for ≤ 15 minutes when switching from one train to another. The circumstances for stopping both DHR pumps are to be limited to situations when the outage time is short [and the core outlet temperature is maintained > 10 degrees F below saturation temperature]. The Note prohibits boron dilution or draining operations when DHR forced flow is stopped.

DHR and Coolant Circulation—Low Water Level
3.9.5

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3.9 REFUELING OPERATIONS

3.9.5 Decay Heat Removal (DHR) and Coolant Circulation—Low Water Level

LCO 3.9.5

Two DHR loops shall be OPERABLE, and one DHR loop shall be in operation.

*Insert 1
(BWOG)* →

APPLICABILITY: MODE 6 with the water level < 23 ft above the top of reactor vessel flange.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Less than required number of DHR loops OPERABLE.	A.1 Initiate action to restore DHR loop to OPERABLE status.	Immediately
	<u>OR</u> A.2 Initiate action to establish ≥ 23 ft of water above the top of reactor vessel flange.	Immediately
B. No DHR loop OPERABLE or in operation.	B.1 Suspend operations involving a reduction in reactor coolant boron concentration.	Immediately
	<u>AND</u> B.2 Initiate action to restore one DHR loop to OPERABLE status and to operation.	Immediately
	<u>AND</u>	(continued)

BASES

APPLICABLE
SAFETY ANALYSES
(continued)

reduction. Therefore, the DHR System is retained as a Specification.

LCO

In MODE 6, with the water level < 23 ft above the top of the reactor vessel flange, two DHR loops must be OPERABLE. Additionally, one DHR loop must be in operation to provide:

- a. Removal of decay heat;
- b. Mixing of borated coolant to minimize the possibility of criticality; and
- c. Indication of reactor coolant temperature.

Insert 2
(BWO6)

An OPERABLE DHR loop consists of a DHR pump, a heat exchanger, valves, piping, instruments, and controls to ensure an OPERABLE flow path and to determine the low end temperature. The flow path starts in one of the RCS hot legs and is returned to the RCS cold legs.

APPLICABILITY

Two DHR loops are required to be OPERABLE, and one in operation in MODE 6, with the water level < 23 ft above the top of the reactor vessel flange, to provide decay heat removal. Requirements for the DHR System in other MODES are covered by LCOs in Section 3.4, Reactor Coolant System (RCS), and Section 3.5, Emergency Core Cooling Systems (ECCS). DHR loop requirements in MODE 6, with the water level ≥ 23 ft above the top of the reactor vessel flange, are located in LCO 3.9.4, "Decay Heat Removal (DHR) and Coolant Circulation—High Water Level."

ACTIONS

A.1 and A.2

With fewer than the required loops OPERABLE, action shall be immediately initiated and continued until the DHR loop is restored to OPERABLE status or until ≥ 23 ft of water level is established above the reactor vessel flange. When the water level is established at ≥ 23 ft above the reactor

(continued)

Insert 1 (WOG)

-----NOTE-----

All RHR pumps may be de-energized for ≤ 15 minutes when switching from one train to another provided:

- a. The core outlet temperature is maintained > 10 degrees F below saturation temperature;
 - b. No operations are permitted that would cause a reduction of the Reactor Coolant System boron concentration; and
 - c. No draining operations to further reduce RCS water volume are permitted.
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INSERT 2 (WOG)

This LCO is modified by a Note that permits the RHR pumps to be de-energized for ≤ 15 minutes when switching from one train to another. The circumstances for stopping both RHR pumps are to be limited to situations when the outage time is short [and the core outlet temperature is maintained > 10 degrees F below saturation temperature]. The Note prohibits boron dilution or draining operations when RHR forced flow is stopped.

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3.9 REFUELING OPERATIONS

3.9.6 Residual Heat Removal (RHR) and Coolant Circulation—Low Water Level

LCO 3.9.6 Two RHR loops shall be OPERABLE, and one RHR loop shall be in operation.

Insert 1
(WOG)

APPLICABILITY: MODE 6 with the water level < 23 ft above the top of reactor vessel flange.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Less than the required number of RHR loops OPERABLE.	A.1 Initiate action to restore required RHR loops to OPERABLE status.	Immediately
	<u>OR</u> A.2 Initiate action to establish ≥ 23 ft of water above the top of reactor vessel flange.	Immediately
B. No RHR loop in operation.	B.1 Suspend operations involving a reduction in reactor coolant boron concentration. <u>AND</u>	Immediately (continued)

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BASES

LCO
(continued)

Additionally, one loop of RHR must be in operation in order to provide:

- a. Removal of decay heat;
- b. Mixing of borated coolant to minimize the possibility of criticality; and
- c. Indication of reactor coolant temperature.

Insert 2
(WOG)



An OPERABLE RHR loop consists of an RHR pump, a heat exchanger, valves, piping, instruments and controls to ensure an OPERABLE flow path and to determine the low end temperature. The flow path starts in one of the RCS hot legs and is returned to the RCS cold legs.

APPLICABILITY

Two RHR loops are required to be OPERABLE, and one RHR loop must be in operation in MODE 6, with the water level < 23 ft above the top of the reactor vessel flange, to provide decay heat removal. Requirements for the RHR System in other MODES are covered by LCOs in Section 3.4, Reactor Coolant System (RCS), and Section 3.5, Emergency Core Cooling Systems (ECCS). RHR loop requirements in MODE 6 with the water level \geq 23 ft are located in LCO 3.9.5, "Residual Heat Removal (RHR) and Coolant Circulation—High Water Level."

ACTIONS

A.1 and A.2

If less than the required number of RHR loops are OPERABLE, action shall be immediately initiated and continued until the RHR loop is restored to OPERABLE status and to operation or until \geq 23 ft of water level is established above the reactor vessel flange. When the water level is \geq 23 ft above the reactor vessel flange, the Applicability changes to that of LCO 3.9.5, and only one RHR loop is required to be OPERABLE and in operation. An immediate Completion Time is necessary for an operator to initiate corrective actions.

(continued)

Insert 1 (CEOG)

-----NOTE-----

All SDC pumps may be de-energized for ≤ 15 minutes when switching from one train to another provided:

- a. The core outlet temperature is maintained > 10 degrees F below saturation temperature;
 - b. No operations are permitted that would cause a reduction of the Reactor Coolant System boron concentration; and
 - c. No draining operations to further reduce RCS water volume are permitted.
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INSERT 2 (CEOG)

This LCO is modified by a Note that permits the SDC pumps to be de-energized for ≤ 15 minutes when switching from one train to another. The circumstances for stopping both SDC pumps are to be limited to situations when the outage time is short [and the core outlet temperature is maintained > 10 degrees F below saturation temperature]. The Note prohibits boron dilution or draining operations when SDC forced flow is stopped.

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3.9 REFUELING OPERATIONS

3.9.5 Shutdown Cooling (SDC) and Coolant Circulation—Low Water Level

LCO 3.9.5 Two SDC loops shall be OPERABLE, and one SDC loop shall be in operation.

Insert 1
(LEOG) →

APPLICABILITY: MODE 6 with the water level < 23 ft above the top of reactor vessel flange.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SDC loop inoperable.	A.1 Initiate action to restore SDC loop to OPERABLE status.	Immediately
	OR A.2 Initiate action to establish ≥ 23 ft of water above the top of reactor vessel flange.	Immediately
B. No SDC loop OPERABLE or in operation.	B.1 Suspend operations involving a reduction in reactor coolant boron concentration.	Immediately
	AND B.2 Initiate action to restore one SDC loop to OPERABLE status and to operation.	Immediately
	AND	(continued)

BASES (continued)

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LCO

In MODE 6, with the water level < 23 ft above the top of the reactor vessel flange, both SDC loops must be OPERABLE. Additionally, one loop of the SDC System must be in operation in order to provide:

- a. Removal of decay heat;
- b. Mixing of borated coolant to minimize the possibility of a criticality; and
- c. Indication of reactor coolant temperature.

Insert 2
(CEOG)

An OPERABLE SDC loop consists of an SDC pump, a heat exchanger, valves, piping, instruments, and controls to ensure an OPERABLE flow path and to determine the low end temperature. The flow path starts in one of the RCS hot legs and is returned to the RCS cold legs.

APPLICABILITY

Two SDC loops are required to be OPERABLE, and one SDC loop must be in operation in MODE 6, with the water level < 23 ft above the top of the reactor vessel flange, to provide decay heat removal. Requirements for the SDC System in other MODES are covered by LCOs in Section 3.4, Reactor Coolant System. MODE 6 requirements, with a water level ≥ 23 ft above the reactor vessel flange, are covered in LCO 3.9.4, "Shutdown Cooling and Coolant Circulation—High Water Level."

ACTIONS

A.1 and A.2

If one SDC loop is inoperable, action shall be immediately initiated and continued until the SDC loop is restored to OPERABLE status and to operation, or until ≥ 23 ft of water level is established above the reactor vessel flange. When the water level is established at ≥ 23 ft above the reactor vessel flange, the Applicability will change to that of LCO 3.9.4, "Shutdown Cooling and Coolant Circulation—High Water Level," and only one SDC loop is required to be OPERABLE and in operation. An immediate Completion Time is necessary for an operator to initiate corrective actions.

(continued)