

## Industry/TSTF Standard Technical Specification Change Traveler

**Allow standby SDC/RHR/DHR loop to inoperable to support testing**

Classification: 2) Consistency/Standardization

NUREGs Affected:  1430  1431  1432  1433  1434

**Description:**

Add a Note to LCO 3.9.5, "SDC and Coolant Circulation - Low Water Level" which states, "One SDC loop may be inoperable for <= 2 hours for surveillance testing provided the other SDC loop is OPERABLE and in operation."

**Justification:**

LCO 3.9.5 currently does not allow the non-operating SDC loop to be made inoperable to support surveillance testing. LCOs 3.4.7 and 3.4.8 both allow the non-operating SDC loop to be inoperable for a period of up to 2 hours to perform surveillance testing, provide the other SDC loop is OPERABLE and operating. For consistency, and to support required outage activities and still maintain the plant in a safe condition, this Note should be added to LCO 3.9.5.

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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: 27-Jul-1999

Owners Group Comments

(No Comments)

Owners Group Resolution: Approved Date: 27-Jul-1999

#### TSTF Review Information

TSTF Received Date: 08-Dec-1999 Date Distributed for Review 08-Dec-1999

OG Review Completed:  BWO  WOG  CEOG  BWOG

TSTF Comments:

Applicable to PWRs only.

TSTF Resolution: Approved Date: 14-Dec-1999

#### NRC Review Information

NRC Received Date: 27-Dec-1999

NRC Comments:

NRC provided verbal comments to T. Weber. TSTF considering.

Final Resolution: Superseded by Revision

Final Resolution Date:

5/5/2000

**TSTF Revision 1**

**Revision Status: Active**

**Next Action: NRC**

Revision Proposed by: NRC

**Revision Description:**

Revised to address NRC comments. The following is added to the SR Note Bases, "Prior to declaring the [DHR/RHR/SDC] loop inoperable, consideration should be given to the existing plant configuration, the relative risks associated with declaring the loop inoperable (including the time to boil if the plant is in reduced inventory condition), and any compensatory actions that are necessary."

**TSTF Review Information**

TSTF Received Date: 20-Apr-2000      Date Distributed for Review 20-Apr-2000

OG Review Completed:  BWOG  WOG  CEOG  BWROG

TSTF Comments:

(No Comments)

TSTF Resolution: Approved      Date: 20-Apr-2000

**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
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
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
LCO 3.9.5 Bases	SDC and Coolant Circulation - Low Water Level	NUREG(s)- 1432 Only

5/5/2000

INSERT 1

----- NOTE -----

One required DHR loop may be inoperable for up to 2 hours for surveillance testing, provided that the other DHR loop is OPERABLE and in operation.

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INSERT 2

This LCO is modified by a Note that allows one DHR loop to be inoperable for a period of 2 hours provided the other loop is OPERABLE and in operation. This permits periodic surveillance tests to be performed on the inoperable loop during a time when these tests are safe and possible. Prior to declaring the DHR loop inoperable, consideration should be given to the existing plant configuration, the relative risks associated with declaring the loop inoperable (including the time to boil if the plant is in reduced inventory condition), and any compensatory actions that are necessary.

INSERT 3

----- NOTE -----

One required RHR loop may be inoperable for up to 2 hours for surveillance testing, provided that the other RHR loop is OPERABLE and in operation.

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INSERT 4

This LCO is modified by a Note that allows one RHR loop to be inoperable for a period of 2 hours provided the other loop is OPERABLE and in operation. This permits periodic surveillance tests to be performed on the inoperable loop during a time when these tests are safe and possible. Prior to declaring the RHR loop inoperable, consideration should be given to the existing plant configuration, the relative risks associated with declaring the loop inoperable (including the time to boil if the plant is in reduced inventory condition), and any compensatory actions that are necessary.

INSERT 5

----- NOTE -----

One required SDC loop may be inoperable for up to 2 hours for surveillance testing, provided that the other SDC loop is OPERABLE and in operation.

-----

INSERT 6

This LCO is modified by a Note that allows one SDC loop to be inoperable for a period of 2 hours provided the other loop is OPERABLE and in operation. This permits periodic surveillance tests to be performed on the inoperable loop during a time when these tests are safe and possible. Prior to declaring the SDC loop inoperable, consideration should be given to the existing plant configuration, the relative risks associated with declaring the loop inoperable (including the time to boil if the plant is in reduced inventory condition), and any compensatory actions that are necessary.

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 →

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 $\geq$ 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

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  $\geq 23$  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  $\geq 23$  ft of water level is established above the reactor vessel flange. When the water level is established at  $\geq 23$  ft above the reactor

(continued)



RHR and Coolant Circulation—Low Water Level  
B 3.9.6

## 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 4

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)

SDC and Coolant Circulation—Low Water Level  
3.9.5

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 5 →

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
	<u>OR</u> 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
	<u>AND</u> B.2 Initiate action to restore one SDC loop to OPERABLE status and to operation.	Immediately
	<u>AND</u>	(continued)

## BASES (continued)

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 6

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  $\geq 23$  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  $\geq 23$  ft of water level is established above the reactor vessel flange. When the water level is established at  $\geq 23$  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.

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