

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.9 Pressurizer

LCO 3.4.9 The pressurizer shall be OPERABLE with:

- a. Pressurizer water level \leq 57%; and
- b. Two groups of pressurizer heaters OPERABLE with the capacity of each group \geq 150 kW and capable of being powered from an emergency power supply.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Pressurizer water level not within limit.	A.1 Be in MODE 3 with reactor trip breakers open.	6 hours
	<u>AND</u>	
	A.2 Be in MODE 4.	12 hours
B. One required group of pressurizer heaters inoperable.	B.1 Restore required group of pressurizer heaters to OPERABLE status.	72 hours
C. Required Action and associated Completion Time of Condition B not met.	C.1 Be in MODE 3.	6 hours
	<u>AND</u>	
	C.2 Be in MODE 4.	12 hours

BASES

APPLICABLE
SAFETY ANALYSES
(continued)

The pressurizer satisfies Criterion 3 of the NRC Policy Statement.

LCO

The LCO requirement for the pressurizer to be OPERABLE with water level $\leq 57\%$ ensures that a steam bubble exists. Limiting the maximum operating water volume preserves the steam space for pressure control. The LCO has been established to minimize the consequences of potential overpressure transients. Requiring the presence of a steam bubble is also consistent with analytical assumptions.

The LCO requires two groups of OPERABLE pressurizer heaters, each with a capacity ≥ 150 kW and capable of being powered from an emergency power supply. The exact design value of 150 kW is derived from the use of three heaters rated at 50 kW each. The amount needed to maintain pressure is dependant on the ambient heat losses. The minimum heater capacity required is sufficient to maintain the RCS near normal operating pressure when accounting for heat losses through the pressurizer insulation. By maintaining the pressure near the operating conditions, a wide subcooling margin to saturation can be obtained in the loops.

APPLICABILITY

The need for pressure control is most pertinent when core heat can cause the greatest effect on RCS temperature resulting in the greatest effect on pressurizer level and RCS pressure control. Thus, Applicability has been designated for MODES 1 and 2. The Applicability is also provided for MODE 3. The purpose is to prevent solid water RCS operation during heatup and cooldown to avoid rapid pressure rises caused by normal operational perturbation, such as reactor coolant pump startup. The LCO does not apply to MODE 5 (Loops Filled) because LCO 3.4.12, "Low Temperature Overpressure Protection (LTOP) System," applies. The LCO does not apply to MODES 5 and 6 with partial loop operation.

In MODES 1, 2, and 3, there is the need to maintain the availability of pressurizer heaters capable of being powered from an emergency power supply. In the event of a loss of offsite power, the initial conditions of these MODES gives

(continued)

ATTACHMENT B

**EXISTING TECHNICAL SPECIFICATIONS AND BASES
LCO 3.4.9**

UNIT 3

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.9 Pressurizer

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APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Pressurizer water level not within limit.	A.1 Be in MODE 3 with reactor trip breakers open.	6 hours
	<u>AND</u> A.2 Be in MODE 4.	12 hours
B. One required group of pressurizer heaters inoperable.	B.1 Restore required group of pressurizer heaters to OPERABLE status.	72 hours
C. Required Action and associated Completion Time of Condition B not met.	C.1 Be in MODE 3.	6 hours
	<u>AND</u> C.2 Be in MODE 4.	12 hours

(continued)

BASES

APPLICABLE
SAFETY ANALYSES
(continued)

The pressurizer satisfies Criterion 3 of the NRC Policy Statement.

LCO

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(continued)

ATTACHMENT C

PROPOSED TECHNICAL SPECIFICATIONS AND BASES

LCO 3.4.9

(Redline and Strikeout)

UNIT 2

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.9 Pressurizer

LC0 3.4.9 The pressurizer shall be OPERABLE with:

- a. Pressurizer water level \leq 57%; and
- b. Two groups of pressurizer heaters OPERABLE with the capacity of each group \geq 150 kW ~~and capable of being powered from an emergency power supply.~~

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Pressurizer water level not within limit.	A.1 Be in MODE 3 with reactor trip breakers open.	6 hours
	<u>AND</u> A.2 Be in MODE 4.	12 hours
B. One required group of pressurizer heaters inoperable.	B.1 Restore required group of pressurizer heaters to OPERABLE status.	72 hours
C. Required Action and associated Completion Time of Condition B not met.	C.1 Be in MODE 3.	6 hours
	<u>AND</u> C.2 Be in MODE 4.	12 hours

(continued)

BASES

APPLICABLE
SAFETY ANALYSES
(continued)

The pressurizer satisfies Criterion 3 of the NRC Policy Statement.

LCO

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The LCO requires two groups of OPERABLE pressurizer heaters, each with a capacity ≥ 150 kW and capable of being powered from an emergency power supply. The heaters are powered from buses 2B04 and 2B06. The exact design value of 150 kW is derived from the use of three heaters rated at 50 kW each. The amount needed to maintain pressure is dependant on the ambient heat losses. The minimum heater capacity required is sufficient to maintain the RCS near normal operating pressure when accounting for heat losses through the pressurizer insulation. By maintaining the pressure near the operating conditions, a wide subcooling margin to saturation can be obtained in the loops.

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(continued)

ATTACHMENT D

PROPOSED TECHNICAL SPECIFICATIONS AND BASES

LCO 3.4.9

(Redline and Strikeout)

UNIT 3

3.4 REACTOR COOLANT SYSTEM (RCS)

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A. Pressurizer water level not within limit.	A.1 Be in MODE 3 with reactor trip breakers open.	6 hours
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B. One required group of pressurizer heaters inoperable.	B.1 Restore required group of pressurizer heaters to OPERABLE status.	72 hours
C. Required Action and associated Completion Time of Condition B not met.	C.1 Be in MODE 3.	6 hours
	<u>AND</u> C.2 Be in MODE 4.	12 hours

(continued)

BASES

APPLICABLE
SAFETY ANALYSES
(continued)

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(continued)

ATTACHMENT E

**PROPOSED TECHNICAL SPECIFICATIONS AND BASES
LCO 3.4.9**

UNIT 2

3.4 REACTOR COOLANT SYSTEM (RCS)

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APPLICABLE
SAFETY ANALYSES
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ATTACHMENT F
PROPOSED TECHNICAL SPECIFICATIONS AND BASES
LCO 3.4.9

UNIT 3

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