

Table 3.3.1-1 (page 3 of 6)  
Reactor Trip System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE(a)
10. Reactor Coolant Flow - Low	1(g)	3 per loop	M	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≥ 88.6% of indicated loop flow (Unit 1) ≥ 88.8% of indicated loop flow (Unit 2)
11. Not Used					
12. Undervoltage RCPs	1(g)	1 per bus	M	SR 3.3.1.9 SR 3.3.1.10 SR 3.3.1.16	≥ 4753 V
13. Underfrequency RCPs	1(g)	1 per bus	M	SR 3.3.1.9 SR 3.3.1.10 SR 3.3.1.16	≥ 57.06 Hz
14. Steam Generator (SG) Water Level Low-Low (l)	1, 2	4 per SG	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≥ 36% of narrow range instrument span (Unit 1) (q)(r) ≥ 33.4% of narrow range instrument span (Unit 2)
15. Not Used.					
16. Turbine Trip					
a. Low Fluid Oil Pressure	1(j)	3	O	SR 3.3.1.10 SR 3.3.1.15	≥ 46.6 psig
b. Turbine Stop Valve Closure	1(j)	4	P	SR 3.3.1.10 SR 3.3.1.15	≥ 1% open

(continued)

- (a) The Allowable Value defines the limiting safety system setting. See the Bases for the Trip Setpoints.
- (g) Above the P-7 (Low Power Reactor Trips Block) interlock.
- (j) Above the P-9 (Power Range Neutron Flux) interlock.
- (l) The applicable MODES for these channels in Table 3.3.2-1 are more restrictive.
- (q) If the as-found channel setpoint is conservative with respect to the Allowable Value but outside its predefined as-found acceptance criteria band, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service.
- (r) The instrument channel setpoint shall be reset to a value that is within the as-left tolerance of the Nominal Trip Setpoint, or a value that is more conservative than the Trip Setpoint; otherwise, the channel shall be declared inoperable. The Nominal Trip Setpoint, the methodology used to determine the as-found tolerance and the methodology used to determine the as-left tolerance shall be specified in the Technical Specification Bases.

Table 3.3.2-1 (page 4 of 6)  
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE(a)
<b>5. Turbine Trip and Feedwater Isolation</b>					
a. Automatic Actuation Logic and Actuation Relays	1, 2(i)	2 trains	H	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA
b. SG Water Level -- High High (P-14)	1, 2(i)	3 per SG(P)	I	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ 86% of narrow range span (Unit 1) (q)(r) ≤ 83.5% of narrow range span (Unit 2)
c. Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.				

(continued)

- (a) The Allowable Value defines the limiting safety system setting. See the Bases for the Trip Setpoints.
- (i) Except when all MFIVs and associated bypass valves are closed and de-activated or isolated by a closed manual valve.
- (p) A channel selected for use as an input to the SG water level controller must be declared inoperable.
- (q) If the as-found channel setpoint is conservative with respect to the Allowable Value but outside its predefined as-found acceptance criteria band, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service.
- (r) The instrument channel setpoint shall be reset to a value that is within the as-left tolerance of the Nominal Trip Setpoint, or a value that is more conservative than the Trip Setpoint; otherwise, the channel shall be declared inoperable. The Nominal Trip Setpoint, the methodology used to determine the as-found tolerance and the methodology used to determine the as-left tolerance shall be specified in the Technical Specification Bases.

Table 3.3.2-1 (page 5 of 6)  
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE(a)
6. Auxiliary Feedwater					
a. Automatic Actuation Logic and Actuation Relays (Solid State Protection System)	1, 2, 3	2 trains	G	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA
b. Not Used.					
c. SG Water Level Low-Low	1, 2, 3	4 per SG	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥ 36% of narrow range span (Unit 1)(q)(r) ≥ 33.4% of narrow range span (Unit 2)
d. Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.				
e. Loss of Offsite Power	1, 2, 3	1 per train	F	SR 3.3.2.7 SR 3.3.2.9 SR 3.3.2.10	NA
f. Not Used.					
g. Trip of all Main Feedwater Pumps	1, 2	2 per AFW pump	J	SR 3.3.2.8	NA
h. Not Used.					

(continued)

- (a) The Allowable Value defines the limiting safety system setting. See the Bases for the Trip Setpoints.
- (q) If the as-found channel setpoint is conservative with respect to the Allowable Value but outside its predefined as-found acceptance criteria band, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service.
- (r) The instrument channel setpoint shall be reset to a value that is within the as-left tolerance of the Nominal Trip Setpoint, or a value that is more conservative than the Trip Setpoint; otherwise, the channel shall be declared inoperable. The Nominal Trip Setpoint, the methodology used to determine the as-found tolerance and the methodology used to determine the as-left tolerance shall be specified in the Technical Specification Bases.

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
SR 3.4.5.1 Verify required RCS loops are in operation.	12 hours
SR 3.4.5.2 Verify steam generator secondary side water levels are $\geq 38\%$ (Unit 1) and $\geq 10\%$ (Unit 2) for required RCS loops.	12 hours
SR 3.4.5.3 Verify correct breaker alignment and indicated power are available to the required pump that is not in operation.	7 days

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
SR 3.4.6.1 Verify one RHR or RCS loop is in operation.	12 hours
SR 3.4.6.2 Verify SG secondary side water levels are $\geq 38\%$ (Unit 1) and $\geq 10\%$ (Unit 2) for required RCS loops.	12 hours
SR 3.4.6.3 Verify correct breaker alignment and indicated power are available to the required pump that is not in operation.	7 days

### 3.4 REACTOR COOLANT SYSTEM (RCS)

#### 3.4.7 RCS Loops — MODE 5, Loops Filled

LCO 3.4.7 One residual heat removal (RHR) loop shall be OPERABLE and in operation, and either:

- a. One additional RHR loop shall be OPERABLE; or
- b. The secondary side water level of at least two steam generators (SGs) shall be  $\geq 38\%$  (Unit 1) and  $\geq 10\%$  (Unit 2).

-----NOTES-----

1. The RHR pump of the loop in operation may be removed from operation for  $\leq 1$  hour per 8 hour period provided:
  - a. No operations are permitted that would cause introduction of coolant into the RCS with boron concentration less than required to meet the SDM of LCO 3.1.1; and
  - b. Core outlet temperature is maintained at least  $10^{\circ}\text{F}$  below saturation temperature.
2. 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.
3. No reactor coolant pump shall be started with any RCS cold leg temperature  $\leq 350^{\circ}\text{F}$  unless the secondary side water temperature of each SG is  $\leq 50^{\circ}\text{F}$  above each of the RCS cold leg temperatures.
4. All RHR loops may be removed from operation during planned heatup to MODE 4 when at least one RCS loop is in operation.

APPLICABILITY: MODE 5 with RCS loops filled

SURVEILLANCE	FREQUENCY
SR 3.4.7.2 Verify SG secondary side water level is $\geq 38\%$ (Unit 1) and $\geq 10\%$ (Unit 2) in required SGs.	12 hours
SR 3.4.7.3 Verify correct breaker alignment and indicated power are available to the required RHR pump that is not in operation.	7 days