

3.1.7 Rod Position Indication

LCO 3.1.7 The Digital Rod Position Indication (DRPI) System and the Demand Position Indication System shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each inoperable rod position indicator and each demand position indicator.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One DRPI per group inoperable for one or more groups.	A.1 Verify the position of the rods with inoperable position indicators indirectly by using core power distribution measurement information.	Once per 8 hours
	<u>OR</u>	
	A.2 Reduce THERMAL POWER to $\leq 50\%$ RTP.	8 hours
B. More than one DRPI per group inoperable.	B.1 Place the control rods under manual control	Immediately
	<u>AND</u>	
	B.2 Monitor and record reactor coolant system Tavg.	Once per 1 hour
	<u>AND</u>	(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	<p>B.3 Verify the position of the rods with inoperable position indicators indirectly by using core power distribution measurement information.</p> <p><u>AND</u></p> <p>B.4 Restore inoperable position indicators to OPERABLE status such that a maximum of one DRPI per group is inoperable.</p>	<p>Once per 8 hours</p> <p>24 hours</p>
C. One or more rods with inoperable DRPIs have been moved in excess of 24 steps in one direction since the last determination of the rod's position.	<p>C.1 Verify the position of the rods with inoperable position indicators indirectly by using core power distribution measurement information.</p> <p><u>OR</u></p> <p>C.2 Reduce THERMAL POWER to $\leq 50\%$ RTP.</p>	<p>4 hours</p> <p>8 hours</p>
D. One demand position indicator per bank inoperable for one or more banks.	<p>D.1.1 Verify by administrative means all DRPIs for the affected banks are OPERABLE.</p> <p><u>AND</u></p> <p>D.1.2 Verify the most withdrawn rod and the least withdrawn rod of the affected banks are ≤ 12 steps apart.</p> <p><u>OR</u></p> <p>D.2 Reduce THERMAL POWER to $\leq 50\%$ RTP</p>	<p>Once per 8 hours</p> <p>Once per 8 hours</p> <p>8 hours</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.2.1.2 -----NOTE-----</p> <p>If $F_Q^C(Z)$ measurements indicate</p> <p style="padding-left: 40px;">maximum over $z \left[\frac{F_Q^C(z)}{K(z)} \right]$</p> <p>has increased since the previous evaluation of $F_Q^C(Z)$:</p> <p>a. Increase $F_Q^W(Z)$ by the appropriate factor specified in the COLR and reverify $F_Q^W(Z)$ is within limits:</p> <p style="padding-left: 40px;">or</p> <p>b. Repeat SR 3.2.1.2 once per 7 EFPD until two successive power distribution measurements indicate</p> <p style="padding-left: 40px;">maximum over $z \left[\frac{F_Q^C(z)}{K(z)} \right]$</p> <p style="padding-left: 40px;">has not increased.</p> <hr/> <p>Verify $F_Q^W(Z)$ is within limit.</p>	<p>Once after each refueling prior to THERMAL POWER exceeding 75% RTP</p> <p><u>AND</u></p> <p style="text-align: right;">(continued)</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.2.4.1</p> <p>-----NOTES-----</p> <ol style="list-style-type: none"> 1. With input from one Power Range Neutron Flux channel inoperable and THERMAL POWER \leq 75% RTP, the remaining three power range channels can be used for calculating QPTR. 2. SR 3.2.4.2 may be performed in lieu of this Surveillance. <p>-----</p> <p>Verify QPTR is within limit by calculation.</p>	<p>7 days</p>
<p>SR 3.2.4.2</p> <p>-----NOTE-----</p> <p>Not required to be performed until 12 hours after the input from one or more Power Range Neutron Flux channels is inoperable with THERMAL POWER > 75% RTP.</p> <p>-----</p> <p>Verify QPTR is within limit using core power distribution measurement information.</p>	<p>12 hours</p>

SURVEILLANCE REQUIREMENTS

NOTE

Refer to Table 3.3.1-1 to determine which SRs apply for each RTS Function.

SURVEILLANCE		FREQUENCY
SR 3.3.1.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.1.2	<p>NOTE</p> <p>Not required to be performed until 24 hours after THERMAL POWER is \geq 15% RTP, but prior to exceeding 30% RTP.</p> <p>Compare results of calorimetric heat balance calculation to power range channel output. Adjust power range channel output if calorimetric heat balance calculation results exceed power range channel output by more than + 2% RTP.</p>	24 hours
SR 3.3.1.3	<p>NOTE</p> <p>Not required to be performed until 24 hours after THERMAL POWER is \geq 50% RTP.</p> <p>Compare results of incore power distribution measurements to Nuclear Instrumentation System (NIS) AFD. Adjust NIS channel if absolute difference is \geq 3%.</p>	31 effective full power days (EFPD)
SR 3.3.1.4	<p>NOTE</p> <p>This Surveillance must be performed on the reactor trip bypass breaker, for the local manual shunt trip only, prior to placing the bypass breaker in service.</p> <p>Perform TADOT.</p>	31 days on a STAGGERED TEST BASIS
SR 3.3.1.5	Perform ACTUATION LOGIC TEST.	31 days on a STAGGERED TEST BASIS

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.3.1.6 -----NOTE----- Not required to be performed until 72 hours after THERMAL POWER \geq 75% RTP. ----- Calibrate excore channels to agree with incore power distribution measurements.</p>	<p>92 EFPD</p>
<p>SR 3.3.1.7 -----NOTE----- 3. Not required to be performed for source range instrumentation prior to entering MODE 3 from MODE 2 until 4 hours after entry into MODE 3. 4. For source range instrumentation, this Surveillance shall include verification that interlocks P-6 and P-10 are in their required state for existing unit conditions. ----- Perform COT.</p>	<p>92 days</p>

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