

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.1 Recirculation Loops Operating

LCO 3.4.1 Two recirculation loops with matched flows shall be in operation,

AND

~~The Total Core Flow and THERMAL POWER relation shall be within the "Operation Allowed Region", the right of the lower bound limit of Region Z specified on the applicable figure of the CORE OPERATING LIMITS REPORT.~~

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	A.1 Satisfy the requirements of the LCO.	24 hours
B. Required Action and associated completion time of Condition A not met.  OR No Recirculation loops in operation in MODE 1	B.1 Be in MODE 3.	12 hours

配合 OPRM 裝設後，本節之規定，參照原標準版 ITS rev.1 (本廠轉換時依據版本)及新版 ITS(rev.3)，將本節 ACTIONS 修訂如上。原 KS TS 之 ACTIONS A~G 對於爐心不穩定性之要求行動，改移至 TRM3.4.7，作為 OPRM 不可用之替代方案 (OPRM 設置後，新增之 LCO 3.3.1.1 ACTION J.1 要求)。

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ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<del>A. Core thermal hydraulic instability occurs.</del>  <del>OR</del>  <del>No recirculation loops in operation in MODE 1.</del>	<del>A.1 Scram the reactor manually and place the reactor mode switch in the shutdown position during scram recovery.</del>	<del>Immediately</del>
<del>B. No recirculation loops in operation in MODE 2.</del>	<del>B.1 Restore both loops to operation.</del>	<del>12 hours</del>
<del>C. Recirculation loop jet pump flow mismatch not within limits.</del>	<del>C.1 Declare the recirculation loop with lower flow to be "not in operation."</del>	<del>2 hours</del>

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p><del>D. One recirculation loop not in operation</del></p>	<p><del>D.1 Insert control rods to below 80% rod line.</del></p> <p><u>AND</u></p> <p><del>D.2 Restore both loops to operation.</del></p>	<p><del>Immediately</del></p> <p>12 hours</p>
<p><del>E. Operating in Stability Exclusion region (the left of the upper bound limit of region Z)</del></p>	<p><del>NOTE</del></p> <p><del>Increasing core flow is only applicable for both recirculation loops in operation.</del></p> <p><del>E.1 Initiate action by inserting control rod or increasing Core Flow to exit Stability Exclusion Region.</del></p>	<p><del>Immediately</del></p>
<p><del>F. Operating in Region Z as defined in the applicable Core Operating Limit Report</del></p>	<p><del>F.1 NOTE</del></p> <p><del>Not applicable for a loss of feedwater heater event.</del></p> <p><del>Initiate action to exit region Z by increasing Core Flow or reducing Thermal Power by inserting control rods.</del></p> <p><u>OR</u></p> <p><del>F.2 NOTE</del></p> <p><del>Only applicable for a loss of feedwater heater event.</del></p> <p><del>Insert control rods to below 80% rod line.</del></p>	<p><del>Immediately</del></p> <p><del>Immediately</del></p>

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ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<del>G. Required Action and associated completion time of Condition B,C,D,E,F not met</del>	<del>G.1 Be in MODE 3.</del>	<del>12 hours</del>

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SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.4.1.1 -----NOTE-----                      Not required to be performed until 24 hours after both recirculation loops are in operation.                      -----</p> <p>Verify recirculation loop jet pump flow mismatch with both recirculation loops in operation is:</p> <p>a. <math>\leq 10\%</math> of rated core flow when operating at <math>&lt; 70\%</math> of rated core flow; and</p> <p>b. <math>\leq 5\%</math> of rated core flow when operating at <math>\geq 70\%</math> of rated core flow.</p>	24 hours
<p>SR 3.4.1.2 <del>Verify total core flow as a function of THERMAL POWER to be within Operation-Allowed Region (the right of the lower bound-limit of Region Z.)</del></p>	24 hours

配合 OPRM 裝設後，本節之規定，參照原標準版 ITS rev.1 (本廠轉換時依據版本) 及新版 ITS(rev.3)，將本節 ACTIONS 修訂如上。原 KS TS 之 SR 3.4.1.2 對於爐心不穩定性之偵測試驗要求，改移至 TRM3.4.7 之 TRS 3.4.7.1，配合 OPRM 不可用之替代方案 (OPRM 設置後，新增之 LCO 3.3.1.1 ACTION J.1 要求)。

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### 3.4 REACTOR COOLANT SYSTEM (RCS)

#### 3.4.2 Flow Control Valves (FCVs)

LCO 3.4.2 A recirculation loop FCV shall be OPERABLE in each operating recirculation loop.

APPLICABILITY: MODES 1 and 2.

#### ACTIONS

-----NOTE-----  
Separate Condition entry is allowed for each FCV.  
-----

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or two required FCVs inoperable.	A.1 Lock up the FCV.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours

#### SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.2.1 Verify each FCV fails "as is" on loss of hydraulic pressure at the hydraulic unit.	18 months
SR 3.4.2.2 Verify average rate of each FCV movement is: a. ≤ 11% of stroke per second for opening; and b. ≤ 11% of stroke per second for closing.	18 months

### 3.4 REACTOR COOLANT SYSTEM (RCS)

#### 3.4.3 Jet Pumps

LCO 3.4.3 All jet pumps shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more jet pumps inoperable.	A.1 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.4.3.1 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. Not required to be performed until 4 hours after associated recirculation loop is in operation.</li> <li>2. Not required to be performed until 24 hours after &gt; 25% RTP.</li> </ol> <p>-----</p> <p>Verify at least two of the following criteria (a, b, and c) are satisfied for each operating recirculation loop:</p> <ol style="list-style-type: none"> <li>a. Recirculation loop drive flow versus flow control valve position differs by <math>\leq 10\%</math> from established patterns.</li> <li>b. Recirculation loop drive flow versus total core flow differs by <math>\leq 10\%</math> from established patterns.</li> <li>c. Each jet pump diffuser to lower plenum differential pressure differs by <math>\leq 20\%</math> from established patterns, or each jet pump flow differs by <math>\leq 10\%</math> from established patterns.</li> </ol>	<p>24 hours</p>



3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.4 Safety/Relief Valves (S/RVs)

LCO 3.4.4 The safety function of seven S/RVs shall be OPERABLE,

AND

The relief function of six additional S/RVs shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required S/RV inoperable.	A.1 Restore required S/RV to OPERABLE status.	14 days
B. Required Action and associated Completion Time of Condition A not met.  <u>OR</u>  Two or more required S/RVs inoperable.	B.1 Be in MODE 3.  <u>AND</u>  B.2 Be in MODE 4.	12 hours   36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY								
SR 3.4.4.1	<p>Verify the safety function lift setpoints of the required S/RVs are as follows:</p> <table border="1"> <thead> <tr> <th>Number of S/RVs</th> <th>Setpoint kg/cm<sup>2</sup> (psig)( ± 1%)</th> </tr> </thead> <tbody> <tr> <td>7</td> <td>81.93 ± 0.82 (1165 ± 11.6)</td> </tr> <tr> <td>5</td> <td>82.98 ± 0.83 (1180 ± 11.8)</td> </tr> <tr> <td>4</td> <td>83.68 ± 0.84 (1190 ± 11.9)</td> </tr> </tbody> </table> <p>Following bench testing, lift settings shall be within ± 1%.</p>	Number of S/RVs	Setpoint kg/cm <sup>2</sup> (psig)( ± 1%)	7	81.93 ± 0.82 (1165 ± 11.6)	5	82.98 ± 0.83 (1180 ± 11.8)	4	83.68 ± 0.84 (1190 ± 11.9)	In accordance with the Inservice Testing Program or 18 months.
Number of S/RVs	Setpoint kg/cm <sup>2</sup> (psig)( ± 1%)									
7	81.93 ± 0.82 (1165 ± 11.6)									
5	82.98 ± 0.83 (1180 ± 11.8)									
4	83.68 ± 0.84 (1190 ± 11.9)									
SR 3.4.4.2	<p>-----NOTE----- Valve actuation may be excluded. -----</p> <p>Verify each required relief function S/RV actuates on an actual or simulated automatic initiation signal.</p>	18 months								
SR 3.4.4.3	<p>-----NOTE----- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. -----</p> <p>Verify each required S/RV opens when manually actuated.</p>	18 months on a STAGGERED TEST BASIS for each valve solenoid								

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.5 RCS Operational LEAKAGE

LCO 3.4.5 RCS operational LEAKAGE shall be limited to:

- a. No pressure boundary LEAKAGE;
- b.  $\leq 5$  gpm unidentified LEAKAGE averaged over the previous 24 hour period;
- c.  $\leq 25$  gpm total LEAKAGE averaged over the previous 24 hour period; and
- d.  $\leq 2$  gpm increase in unidentified LEAKAGE within the previous 4 hour period in MODE 1.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Unidentified LEAKAGE not within limit.  <u>OR</u>  Total LEAKAGE not within limit.	A.1 Reduce LEAKAGE to within limits.	4 hours
B. Unidentified LEAKAGE increase not within limit.	B.1 Reduced LEAKAGE to within limit.  <u>OR</u>	4 hours
	B.2 Verify source of unidentified LEAKAGE increase is not service sensitive type 304 or type 316 austenitic stainless steel.	4 hours

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition A or B not met.  <u>OR</u>  Pressure boundary LEAKAGE exists.	C.1 Be in MODE 3.	12 hours
	<u>AND</u>  C.2 Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.5.1      Verify RCS unidentified LEAKAGE and total LEAKAGE and unidentified LEAKAGE increase are within limits.	12 hours

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.6 RCS Pressure Isolation Valve (PIV) Leakage

LCO 3.4.6 The leakage from each RCS PIV shall be within limit.

APPLICABILITY : MODES 1 and 2,  
MODE 3, except valves in the residual heat removal (RHR) shutdown cooling flow path when in, or during the transition to or from, the shutdown cooling mode of operation.

ACTIONS

-----NOTES-----

1. Separate Condition entry is allowed for each flow path.
  2. Enter applicable Conditions and Required Actions for systems made inoperable by PIVs.
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CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One or more flow paths with leakage from one or more RCS PIVs not within limit.</p>	<p>-----NOTE----- Each valve used to satisfy Required Action A.1 shall have been verified to meet SR 3.4.6.1 and be in the reactor coolant pressure boundary or the high pressure portion of the system.</p> <p>-----</p> <p>A.1 Isolate the high pressure portion of the affected system from the low pressure portion by use of one closed manual, deactivated automatic, or check valve.</p>	<p>4 hours</p>
<p>B. Required Action and associated Completion Time not met.</p>	<p>B.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>B.2 Be in MODE 4.</p>	<p>12 hours</p> <p>36 hours</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.4.6.1</p> <p>-----NOTE----- Not required to be performed in MODE 3. -----</p> <p>Verify equivalent leakage of each RCS PIV is <math>\leq</math> 0.5 gpm per nominal inch of valve size up to a maximum of 5 gpm, at an RCS pressure <math>\geq</math> 1040 psia and <math>\leq</math> 1060 psia.</p>	<p>In accordance with Inservice Testing Program or 18 months</p>

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.7 RCS Leakage Detection Instrumentation

LCO 3.4.7 The following RCS leakage detection instrumentation shall be OPERABLE:

- a. Drywell floor drain sump monitoring system;
- b. One channel of either drywell atmospheric particulate or atmospheric gaseous monitoring system; and
- c. Drywell air cooler condensate flow rate monitoring system.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Drywell floor drain sump monitoring system inoperable.	<p>-----NOTE----- LCO 3.0.4 is not applicable. -----</p> <p>A1. Restore drywell floor drain sump monitoring system to OPERABLE status.</p>	30 days
B. Required drywell atmospheric monitoring system inoperable.	B.1 Analyze grab samples of drywell atmosphere.	Once per 12 hours

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ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C. Drywell air cooler condensate flow rate monitoring system inoperable.</p>	<p>-----NOTE----- Not applicable when the required drywell atmospheric monitoring system is inoperable. -----</p> <p>C.1 Perform SR 3.4.7.1.</p>	<p>Once per 8 hours</p>
<p>D. Required drywell atmospheric monitoring system inoperable.</p> <p><u>AND</u></p> <p>Drywell air cooler condensate flow rate monitoring system inoperable.</p>	<p>-----NOTE----- LCO 3.0.4 is not applicable. -----</p> <p>D.1 Restore required drywell atmospheric monitoring system to OPERABLE status.</p> <p><u>OR</u></p> <p>D.2 Restore drywell air cooler condensate flow rate monitoring system to OPERABLE status.</p>	<p>30 days</p> <p>30 days</p>
<p>E. Required Action and associated Completion Time of Condition A, B, C, or D not met.</p>	<p>E.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>E.2 Be in MODE 4.</p>	<p>12 hours</p> <p>36 hours</p>
<p>F. All required leakage detection systems inoperable.</p>	<p>F.1 Enter LOC 3.0.3.</p>	<p>Immediately</p>



SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.7.1	Perform CHANNEL CHECK of required drywell atmospheric monitoring system.	12 hours
SR 3.4.7.2	Perform CHANNEL FUNCTIONAL TEST of required leakage detection instrumentation.	31 days
SR 3.4.7.3	Perform CHANNEL CALIBRATION of required leakage detection instrumentation.	18 months

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.8 RCS Specific Activity

LCO 3.4.8 The specific activity of the reactor coolant shall be limited to DOSE EQUIVALENT I-131 specific activity  $\leq 7.4 \times 10^3$  Bq/gm (0.2  $\mu$ Ci/gm).

APPLICABILITY: MODE 1,  
MODES 2 and 3 with any main steam line not isolated.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. Reactor coolant specific activity <math>&gt;7.4 \times 10^3</math> Bq/gm (0.2 <math>\mu</math>Ci/gm) and <math>\leq 1.48 \times 10^5</math> Bq/gm (4.0 <math>\mu</math>Ci/gm) DOSE EQUIVALENT I-131.</p>	<p>-----NOTE----- LCO 3.0.4 is not applicable. -----</p> <p>A1. Determine DOSE EQUIVALENT I-131. <u>AND</u> A.2 Restore DOSE EQUIVALENT I-131 to within limits.</p>	<p>Once per 4 hours</p> <p>48 hours</p>
<p>B. Required Action and associated Completion Time of Condition A not met.</p> <p><u>OR</u></p> <p>Reactor coolant Specific activity <math>&gt;1.48 \times 10^5</math> Bq/gm (4.0 <math>\mu</math>Ci/gm) DOSE EQUIVALENT I-131.</p>	<p>B.1 Determine DOSE EQUIVALENT I-131. <u>AND</u> B.2.1 Isolate all main steam lines. <u>OR</u> B.2.2.1 Be in MODE 3. <u>AND</u> B.2.2.2 Be in MODE 4.</p>	<p>Once per 4 hours</p> <p>12 hours</p> <p>12 hours</p> <p>36 hours</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.4.8.1</p> <p>-----NOTE-----            Only required to be performed in MODE 1.            -----</p> <p>Verify reactor coolant DOSE EQUIVALENT            I-131 specific activity is <math>\leq 7.4 \times 10^3</math> Bq/gm (0.2  <math>\mu</math>Ci/gm).</p>	<p>7 days</p>





SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.4.9.1 -----NOTE----- Not required to be met until 2 hours after reactor steam dome pressure is &lt; the RHR cut in permissive pressure. ----- Verify each RHR shutdown cooling subsystem is OPREABLE.</p>	<p>92 days</p>
<p>SR 3.4.9.2 -----NOTE----- Not required to be met until 2 hours after reactor steam dome pressure is &lt; the RHR cut in permissive pressure. ----- Verify one RHR shutdown cooling subsystem or recirculation pump is operating.</p>	<p>12 hours</p>

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.10 Residual Heat Removal (RHR) Shutdown Cooling System - Cold Shutdown

LCO 3.4.10 Two RHR shutdown cooling subsystems shall be OPERABLE, and, with no recirculation pump in operation, at least one RHR shutdown cooling subsystem shall be in operation.

-----NOTES-----

1. Both RHR shutdown cooling subsystems and recirculation pumps may be removed from operation for up to 2 hours per 8 hour period.
2. One RHR shutdown cooling subsystem may be inoperable for up to 2 hours for the performance of Surveillances.

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APPLICABILITY: MODE 4.

ACTIONS

-----NOTE-----

Separate Condition entry is allowed for each RHR shutdown cooling subsystem.

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CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or two RHR shutdown cooling subsystems inoperable.	A.1 Verify an alternate method of decay heat removal is available for each inoperable RHR shutdown cooling subsystem.	1 hour  <u>AND</u>  Once per 24 hours thereafter

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. No RHR shutdown cooling subsystem in operation.  <u>AND</u>  No recirculation pump in operation.	B.1 Verify reactor coolant circulating by an alternate method.        <u>AND</u>  B.2 Monitor reactor coolant temperature and pressure.	1 hour from discovery of no reactor coolant circulation    <u>AND</u>  Once per 12 hours thereafter    Once per hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.10.1 Verify each RHR shutdown cooling subsystem is OPERABLE.	92 days.
SR 3.4.10.2 Verify one RHR shutdown cooling subsystem or recirculation pump is operating.	12 hours



### 3.4 REACTOR COOLANT SYSTEM (RCS)

#### 3.4.11 RCS Pressure and Temperature (P/T) Limits

LCO 3.4.11 RCS pressure, RCS temperature, RCS heatup and cooldown rates, and the recirculation pump starting temperature requirements shall be maintained within the limits specified in the following:

##### A. Idle Recirculation Loop Startup:

- a. The temperature difference between the reactor pressure vessel dome coolant and the bottom head coolant is  $\leq 55.5^{\circ}\text{C}(100^{\circ}\text{F})$ ; and
- b. The temperature difference between the reactor coolant in the respective recirculation loop and the coolant in the reactor pressure vessel is  $\leq 27.7^{\circ}\text{C}(50^{\circ}\text{F})$  prior to recirculation pump start.

##### B. Pressure/Temperature Limits:

The reactor coolant system temperature and pressure shall be limited in accordance with the limits lines shown on figures B 3.4.11-1 for unit 1 and figures B 3.4.11-2 for unit 2 as follows:

- a. A maximum heatup rate of  $55.5^{\circ}\text{C}(100^{\circ}\text{F})$  in any one hour period,
- b. A maximum cooldown rate of  $55.5^{\circ}\text{C}(100^{\circ}\text{F})$  in any one hour period,
- c. A maximum temperature change of less than or equal to  $11.1^{\circ}\text{C}(20^{\circ}\text{F})$  in any one hour period during inservice hydrostatic and leak testing operations above the heatup or cooldown limit curves, and
- d. The reactor vessel flange and head flange metal temperatures shall be maintained  $\geq 21.2^{\circ}\text{C}(70^{\circ}\text{F})$  when reactor vessel head bolting studs are under tension.

APPLICABILITY: At all times.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. -----NOTE----- Required Action A.2 shall be completed if this Condition is entered. ----- Requirements of the LCO not met in MODES 1, 2, and 3.</p>	<p>A.1 Restore parameter(s) to within limits.  <u>AND</u>  A.2 Determine RCS is acceptable for continued operation.</p>	<p>30 minutes          72 hours</p>
<p>B. Required Action and associated Completion Time of Condition A not met.</p>	<p>B.1 Be in MODE 3.  <u>AND</u>  B.2 Be in MODE 4.</p>	<p>12 hours       36 hours</p>
<p>C. -----NOTE----- Required Action C.2 shall be completed if this Condition is entered. ----- Requirements of the LCO not met in other than MODES 1, 2, and 3.</p>	<p>C.1 Initiate action to restore parameter(s) to within limits.  <u>AND</u>  C.2 Determine RCS is acceptable for operation.</p>	<p>Immediately          Prior to entering MODE 2 or 3</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.4.11.1 -----NOTE----- Only required to be performed during RCS heatup and cooldown operations, and RCS inservice leak and hydrostatic testing. -----</p> <p>Verify RCS pressure, RCS temperature are on the right of the limit of P-T curves (Figure B 3.4.11-1 for unit 1 and B 3.4.11-2 for unit 2), and RCS heatup and cooldown rates are <math>\leq 55.5^{\circ}\text{C}</math> (<math>100^{\circ}\text{F}</math>) per hour period.</p>	<p>30 minutes</p>
<p>SR 3.4.11.2 Verify RCS pressure and RCS temperature are within the criticality limits specified in P-T curves (Figure B 3.4.11-1 for unit 1, B 3.4.11-2 for unit 2)</p>	<p>Once within 15 minutes prior to control rod withdrawal for the purpose of achieving criticality</p>
<p>SR 3.4.11.3 -----NOTE----- Only required to be met in MODES 1, 2, 3, and 4 with reactor steam dome pressure <math>\geq 25</math> psig. -----</p> <p>Verify the difference between the bottom head coolant temperature and the reactor pressure vessel (RPV) dome coolant temperature is <math>\leq 55.5^{\circ}\text{C}</math> (<math>100^{\circ}\text{F}</math>)</p>	<p>Once within 15 minutes prior to each startup of a recirculation pump</p>

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.4.11.4 -----NOTE----- Only required to be met in MODES 1, 2, 3, and 4. ----- Verify the difference between the reactor coolant temperature in the recirculation loop to be started and the RPV coolant temperature is <math>\leq 27.7^{\circ}\text{C}</math> (<math>50^{\circ}\text{F}</math>)</p>	<p>Once within 15 minutes prior to each startup of a recirculation pump</p>
<p>SR 3.4.11.5 -----NOTE----- Only required to be performed when tensioning the reactor vessel head bolting studs. ----- Verify reactor vessel flange and head flange temperatures are <math>\geq 21.2^{\circ}\text{C}</math> (<math>70^{\circ}\text{F}</math>)</p>	<p>30 minutes</p>
<p>SR 3.4.11.6 -----NOTE----- Not required to be performed until 30 minutes after RCS temperature <math>\leq 26.7^{\circ}\text{C}</math> (<math>80^{\circ}\text{F}</math>) in MODE 4. ----- Verify reactor vessel flange and head flange temperatures are <math>\geq 21.2^{\circ}\text{C}</math> (<math>70^{\circ}\text{F}</math>)</p>	<p>30 minutes</p>
<p>SR 3.4.11.7 -----NOTE----- Not required to be performed until 12 hours after RCS temperature <math>\leq 37.8^{\circ}\text{C}</math> (<math>100^{\circ}\text{F}</math>) in MODE 4. ----- Verify reactor vessel flange and head flange temperatures are <math>\geq 21.2^{\circ}\text{C}</math> (<math>70^{\circ}\text{F}</math>)</p>	<p>12 hours</p>

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.12 Reactor Steam Dome Pressure

LCO 3.4.12 The reactor steam dome pressure shall be  $\leq 73.47 \text{ kg/cm}^2$  (1045 psig). | 2

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Reactor steam dome pressure not within limit.	A.1 Restore reactor steam dome pressure to within limit.	15 minutes
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.12.1 Verify reactor steam dome pressure is $\leq 73.47 \text{ kg/cm}^2$ (1045 psig.)	12 hours