

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

When the OPRM upscale (Table 3.3.1.1-1 function 2.f) is inoperable, the Total Core Flow and THERMAL POWER relation shall be within the "Operation Allowed Region" specified on the applicable figure of the CORE OPERATING LIMITS REPORT.

APPLICABILITY: MODES 1 and 2.

-----NOTES-----

1. CONDITION A and B are applicable only when the OPRM upscale is OPERABLE.
2. CONDITION C,D,E,F,G,H,I are applicable only when the OPRM upscale is inoperable and CONDITION I of LCO 3.3.1.1 applies.

-----  
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 <u>OR</u> No recirculation loops in operation	B.1 Be in Mode 3	12 hours
C. No recirculation loops in operation	C.1 In MODE 1, place the reactor mode switch in the shutdown position or manually scram the reactor. C.2 In MODE 2, restore both loops to operation or be in MODE 3	Immediately  12 hours
D. Core thermal hydraulic instability occurs.	D.1 Manually scram the reactor	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Operating in stability exclusion region as defined in the applicable Core Operating Limit Report (COLR)	E.1 Initiate corrective action by inserting control rod or increasing Core Flow (both recirculation loops in operation) to exit stability exclusion region.	Immediately
F. Operating in region Z as defined in the applicable Core Operating Limit Report	F.1 Initiate corrective action to exit region Z by increasing Core Flow or reducing Thermal Power with control rod insertion.	Immediately
G.. One recirculation loop not in operation or feedwater heater failure and operating in the stability exclusion region	G.1 Initiate corrective action to reduce Thermal Power to below 80% rod line. AND	Immediately
	G.2 Restore the recirculation loop to operation.	24 hours
H. Requirements of the LCO not met for reasons other than condition C, D,E, F, and G	H.1 Satisfy the requirements of the LCO	24 hours
I. Required Action and associated completion time of Condition E, F, G, H not met	I.1 Be in MODE 3	12 hours

**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.                      -----                      Verify recirculation loop jet pump flow mismatch with both recirculation loops in operation is:</p> <p style="margin-left: 40px;">a. <math>\leq 10\%</math> of rated core flow when operating at <math>&lt; 70\%</math> of rated core flow; and</p> <p style="margin-left: 40px;">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 -----NOTE-----                      Not required to be performed until 2 hours after entering region Z.                      -----                      Establish a baseline APRM and LPRM neutron flux noise value within the region Z (as specified in COLR).</p>	18 months

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.2 Jet Pumps

LCO 3.4.2 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 3.4.2.1 -----NOTE-----</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 one of the following criteria (a, b, or c) is satisfied for each operating recirculation loop:</p> <ol style="list-style-type: none"> <li>a. Recirculation pump flow to speed ratio differs by <math>\leq 5\%</math> from established patterns, and jet pump loop flow to recirculation pump speed ratio differs by <math>\leq 5\%</math> from established patterns.</li> <li>b. Each jet pump diffuser to lower plenum differential pressure differs by <math>\leq 20\%</math> from established patterns.</li> <li>c. Each jet pump flow differs by <math>\leq 10\%</math> from established patterns.</li> </ol>	24 hours

### 3.4 REACTOR COOLANT SYSTEM (RCS)

#### 3.4.3 Safety/Relief Valves (S/RVs)

LCO 3.4.3 The safety function of 10 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 the required S/RV to OPERABLE status.	30 days
B. Two required S/RVs inoperable	B.1 restore one S/RV to operable status	7 days
C. Required Action and associated Completion Time of Condition A or B not met.  <u>OR</u>  Three or more required S/RVs inoperable.	C.1 Be in MODE 3.  <u>AND</u>  C.2 Be in MODE 4.	12 hours    36 hours

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
<p>SR 3.4.3.1      Verify the safety and relief function lift setpoints of the required S/RVs are as follows:</p> <p>For safety function:                    2 valves at 80.8kg/cm<sup>2</sup> (1149 psig)                    2 valves at 82.6kg/cm<sup>2</sup> (1175 psig)                    2 valves at 83.3kg/cm<sup>2</sup> (1185 psig)                    2 valves at 84.0kg/cm<sup>2</sup> (1195 psig)                    2 valves at 84.7kg/cm<sup>2</sup> (1205 psig)</p> <p>For relief function:                    2 valves at 75.7kg/cm<sup>2</sup> (1076 psig)                    2 valves at 76.4kg/cm<sup>2</sup> (1086 psig)                    2 valves at 77.1kg/cm<sup>2</sup> (1096 psig)                    2 valves at 77.8kg/cm<sup>2</sup> (1106 psig)                    2 valves at 78.5kg/cm<sup>2</sup> (1116 psig)</p> <p>The allowable setpoint error for each valve shall be ± 1 percent.</p>	<p>In accordance with the Inservice Testing Program</p>
<p>SR 3.4.3.2      -----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>	<p>18 months on a STAGGERED TEST BASIS for each valve solenoid</p>

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.4 RCS Operational LEAKAGE (DELETED 改列入 TRM 並納入 MODE 5 適用狀況)

LCO 3.4.4 RCS operational LEAKAGE shall be limited to:

- a. No pressure boundary LEAKAGE;
- b.  $\leq 18.9$  lpm (5 gpm) unidentified LEAKAGE average over the previous 24 hour period;
- c.  $\leq 94.6$  lpm (25 gpm) total LEAKAGE averaged over the previous 24 hour period; and
- d.  $\leq 7.56$  lpm (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
<p>A. Unidentified LEAKAGE not within limit.</p> <p><u>OR</u></p> <p>Total LEAKAGE not within limit.</p>	<p>A.1 Reduce LEAKAGE to within limits.</p>	<p>4 hours</p>
<p>B. Unidentified LEAKAGE increase not within limit.</p>	<p>B.1 Reduce LEAKAGE to within limits.</p> <p><u>OR</u></p> <p>B.2 Verify source of unidentified LEAKAGE increase is not service sensitive type 304 or type 316 austenitic stainless steel.</p>	<p>12 hours</p> <p>4 hours</p>

(continued)

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.4.4.1 Verify RCS unidentified and total LEAKAGE and unidentified LEAKAGE increase are within limits by monitoring the drywell floor and equipment sump flow rates.</p>	<p>12 hours</p>



3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.5 RCS Pressure Isolation Valve (PIV) Leakage

LCO 3.4.5 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.

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 and Required Action A.2 must have been verified to meet SR 3.4.5.1 and be in the reactor coolant pressure boundary or the high pressure portion of the system.</p>		
	<p>A.1 Isolate the high pressure portion of the affected system from the low pressure portion by use of one closed manual, automatic, or check valve.</p>		4 hours
	<p><u>AND</u> A.2 Isolate the high pressure portion of the affected system from the low pressure portion by use of a second closed manual, automatic, or check valve.</p>		72 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours
	<u>AND</u> B.2 Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.5.1 -----NOTE----- Not required to be performed in MODE 3. ----- Verify equivalent leakage of each RCS PIV is $\leq$ 0.5 gpm per nominal inch of valve size up to a maximum of 5 gpm, at an RCS pressure $\leq$ 1005 psig.	In accordance with the Inservice Testing Program or 18 months

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.6 RCS Leakage Detection Instrumentation (DELETED 改列入 TRM 並納入 MODE 5 適用狀況)

- LCO 3.4.6 The following RCS leakage detection instrumentation shall be OPERABLE:
- a. Drywell floor drain sump monitoring system; and
  - b. One channel of either primary containment atmospheric particulate or atmospheric gaseous monitoring system.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. Drywell floor drain sump monitoring system inoperable.</p>	<p>-----NOTE----- LCO 3.0.4 is not applicable. -----</p> <p>A.1 Restore drywell floor drain sump monitoring system to OPERABLE status.</p> <p><u>OR</u></p> <p>A.2.1 Perform leak rate measurement by manually pumping sump.</p> <p><u>AND</u></p> <p>A.2.2 Restore drywell floor drain sump monitoring system to operable status</p>	<p>24 hours</p> <p>once per 4 hours</p> <p>30 days</p>
<p>B. Required primary containment atmospheric monitoring system inoperable.</p>	<p>-----NOTE----- LCO 3.0.4 is not applicable. -----</p> <p>B.1 Analyze grab samples of primary containment atmosphere.</p> <p><u>AND</u></p>	<p>Once per 12 hours</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.2 Restore required primary containment atmospheric monitoring system to OPERABLE status.	30 days
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3.	12 hours
	<u>AND</u> C.2 Be in MODE 4.	36 hours
D. All required leakage detection systems inoperable.	D.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.6.1 Perform a CHANNEL CHECK of required primary containment atmospheric monitoring system.	12 hours
SR 3.4.6.2 Perform a CHANNEL FUNCTIONAL TEST of required leakage detection instrumentation.	31 days
SR 3.4.6.3 Perform a CHANNEL CALIBRATION of required leakage detection instrumentation.	18 months

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.7 RCS Specific Activity (DELETED 改列入 TRM 並納入 MODE 5 適用狀況)

LCO 3.4.7 The specific activity of the reactor coolant shall be limited to DOSE EQUIVALENT I-131 specific activity  $\leq 2.7 \mu\text{Ci/gm}$ .

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; 2.7 \mu\text{Ci/gm}</math> and <math>\leq 27 \mu\text{Ci/gm}</math> DOSE EQUIVALENT I-131.</p>	<p>-----NOTE----- LCO 3.0.4 is not applicable. -----</p> <p>A.1 Determine DOSE EQUIVALENT I-131.</p> <p><u>AND</u></p> <p>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>OR</p> <p>Reactor Coolant specific activity <math>&gt; 27 \mu\text{Ci/gm}</math> Dose EQUIVALENT I-131.</p>	<p>B.1 Determine DOSE EQUIVALENT I-131.</p> <p><u>AND</u></p> <p>B.2.1 Isolate all main steam lines.</p> <p><u>OR</u></p> <p>B.2.2.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>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
SR 3.4.7.1 -----NOTE----- Only required to be performed in MODE 1. ----- Verify reactor coolant DOSE EQUIVALENT I-131 specific activity is $\leq 2.7 \mu\text{Ci/gm}$ .	7 days

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.8 Residual Heat Removal (RHR) Shutdown Cooling System—Hot Shutdown

LCO 3.4.8 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.
- 

APPLICABILITY: MODE 3, with reactor steam dome pressure < the RHR cut in permissive pressure.

ACTIONS

-----NOTES-----

1. LCO 3.0.4 is not applicable.
  2. Separate Condition entry is allowed for each RHR shutdown cooling subsystem.
- 

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or two RHR shutdown cooling subsystems inoperable.	A.1 Initiate action to restore RHR shutdown cooling subsystem(s) to OPERABLE status.	Immediately
	<p><u>AND</u></p> A.2 Verify an alternate method of decay heat removal is available for each inoperable RHR shutdown cooling subsystem.	1 hour
	<p><u>AND</u></p> A.3 Be in MODE 4.	24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. No RHR shutdown cooling subsystem in operation.  <u>AND</u>  No recirculation pump in operation.	B.1 Initiate action to restore one RHR shutdown cooling subsystem or one recirculation pump to operation.	Immediately
	<u>AND</u>  B.2 Verify reactor coolant circulation by an alternate method.	1 hour from discovery of no reactor coolant circulation  <u>AND</u>  Once per 12 hours thereafter
	<u>AND</u>  B.3 Monitor reactor coolant temperature and pressure.	Once per hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.8.1 -----NOTE----- Not required to be met until 2 hours after reactor steam dome pressure is < the RHR cut in permissive pressure. ----- Verify one RHR shutdown cooling subsystem or recirculation pump is operating.	12 hours



3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.9 Residual Heat Removal (RHR) Shutdown Cooling System—Cold Shutdown

LCO 3.4.9 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.
- 

APPLICABILITY: MODE 4.

ACTIONS

-----NOTE-----

Separate Condition entry is allowed for each shutdown cooling subsystem.

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CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One or two RHR shutdown cooling subsystems inoperable.</p>	<p>A.1 Verify an alternate method of decay heat removal is available for each inoperable RHR shutdown cooling subsystem.</p>	<p>1 hour</p> <p><u>AND</u></p> <p>Once per 24 hours thereafter</p>
<p>B. No RHR shutdown cooling subsystem in operation.</p> <p><u>AND</u></p> <p>No recirculation pump in operation.</p>	<p>B.1 Verify reactor coolant circulating by an alternate method.</p> <p><u>AND</u></p> <p>B.2 Monitor reactor coolant temperature.</p>	<p>1 hour from discovery of no reactor coolant circulation</p> <p><u>AND</u></p> <p>Once per 12 hours thereafter</p> <p>Once per hour</p>

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
SR 3.4.9.1      Verify one RHR shutdown cooling subsystem or recirculation pump is operating.	12 hours

### 3.4 REACTOR COOLANT SYSTEM (RCS)

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

LCO 3.4.10 RCS pressure, RCS temperature, RCS heatup and cooldown rates, and the recirculation pump starting temperature requirements shall be maintained within the limits specified as following:

##### A. Idle Recirculation Loop Startup

An idle recirculation loop shall not be started unless the temperature differential between the reactor pressure vessel steam space coolant and the bottom head drain line coolant is less than or equal to 80.6°C (145°F) and:

- a. When both loops have been idle, unless the temperature differential between the reactor coolant within the idle loop to be started up and the coolant in the reactor pressure vessel is less than or equal to 27.8°C (50 °F) or
- b. When only one loop has been idle, unless the temperature differential between the reactor coolant within the idle and operating recirculation loop is less than or equal to 27.8°C (50°F).

##### B. Pressure / Temperature Limits

The reactor coolant system temperature and pressure shall be limited in accordance with the limit lines shown on figures 3.4.10-1,1a/1b for unit 1 and figure 3.4.10-2,2a/2b for unit 2 as follows:

- (1) curve A and A' for hydrostatic or leak testing;
- (2) curve B and B' for non-nuclear means, cooldown following a nuclear shutdown and low power PHYSICS TESTS; and
- (3) curve C and C' for operation of a critical core other than low power PHYSICS TESTS, with:
  - a. A maximum heatup of 55°C (100°F) in any one hour period,
  - b. A maximum cooldown of 55°C (100°F) in any one hour period,
  - c. A maximum temperature change of less than or equal to 11.1°C (20°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 temperature shall be maintained greater than or equal to 22.2°C (72°F) for unit 1 and 21°C (70°F) for unit 2 when reactor vessel head bolting studs are under tension.

APPLICABILITY: At all times.



SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.4.10.1 -----NOTE----- Only required to be performed during RCS heatup and cooldown operations and RCS inservice leak and hydrostatic testing. ----- Verify RCS pressure and RCS temperature are on the right of the limit lines of figure 3.4.10-1 for unit 1 and figure 3.4.10-2 for unit 2 and verify RCS heatup and cooldown rate are <math>\leq 55^{\circ}\text{C}</math> (<math>100^{\circ}\text{F}</math>) per hour period. If EFPY is larger than 32, figure 3.4.10-1a/1b for unit 1 and figure 3.4.10-2a/2b for unit 2 based on OLTP are referred.</p>	<p>30 minutes</p>
<p>SR 3.4.10.2 Verify RCS pressure and RCS temperature are on the right of the criticality limit line of figure 3.4.10-1 for unit 1 and figure 3.4.10-2 for unit 2. If EFPY is larger than 32, figure 3.4.10-1b for unit 1 and figure 3.4.10-2b for unit 2 based on OLTP are referred.</p>	<p>Once within 15 minutes prior to control rod withdrawal for the purpose of achieving criticality</p>
<p>SR 3.4.10.3 -----NOTE----- Only required to be met in MODES 1, 2, 3, and 4. ----- Verify the difference between the bottom head coolant temperature and the reactor pressure vessel (RPV) coolant temperature is <math>\leq 80.6^{\circ}\text{C}</math> (<math>145^{\circ}\text{F}</math>).</p>	<p>Once within 15 minutes prior to startup of a recirculation pump</p>

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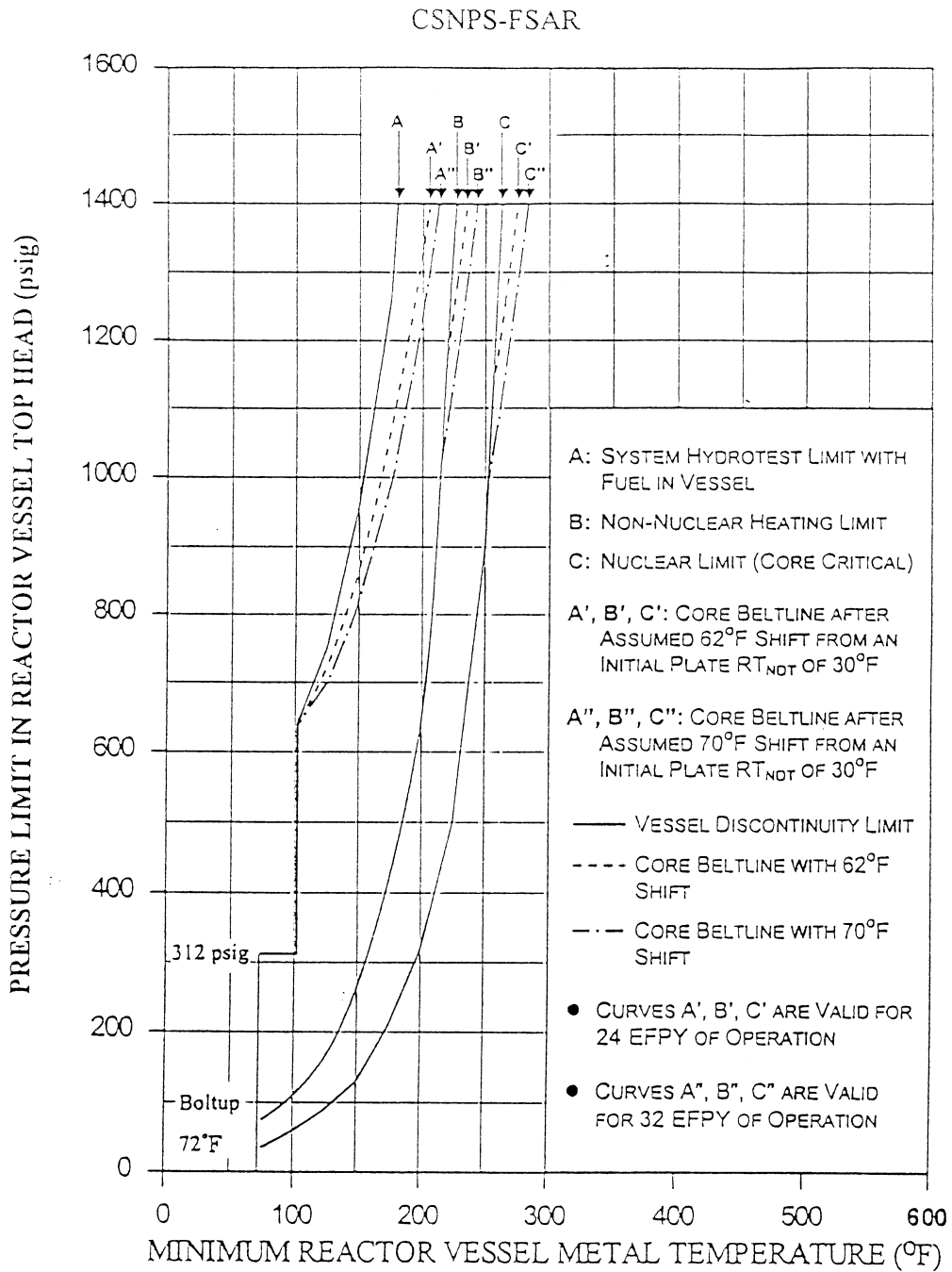
SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.4.10.4 -----NOTE----- Only required to be met in MODES 1, 2, 3, and 4 with both loops have been idle. ----- Verify the difference between the reactor coolant temperature in the recirculation loop to be started and the RPV coolant temperature is <math>\leq 27.8^{\circ}\text{C}</math> (<math>50^{\circ}\text{F}</math>).</p>	<p>Once within 15 minutes prior to startup of a recirculation pump</p>
<p>SR 3.4.10.5 -----NOTE----- Only required to be met in MODES 1, 2, 3, and 4 with one loop has been idle. ----- Verify the difference between the reactor coolant temperature in the recirculation loop to be started and operating recirculation loop is <math>\leq 27.8^{\circ}\text{C}</math> (<math>50^{\circ}\text{F}</math>).</p>	<p>Once within 15 minutes prior to startup of a recirculation pump</p>
<p>SR 3.4.10.6 -----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 22.2^{\circ}\text{C}</math> (<math>72^{\circ}\text{F}</math>) for unit 1 and <math>21^{\circ}\text{C}</math> (<math>70^{\circ}\text{F}</math>) for unit 2.</p>	<p>30 minutes</p>
<p>SR 3.4.10.7 -----NOTE----- Not required to be performed until 30 minutes after RCS temperature <math>\leq 27.8^{\circ}\text{C}</math> (<math>82^{\circ}\text{F}</math>) in MODE 4. ----- Verify reactor vessel flange and head flange temperatures are <math>\geq 22.2^{\circ}\text{C}</math> (<math>72^{\circ}\text{F}</math>) for unit 1 and <math>21^{\circ}\text{C}</math> (<math>70^{\circ}\text{F}</math>) for unit 2.</p>	<p>30 minutes</p>

(continued)

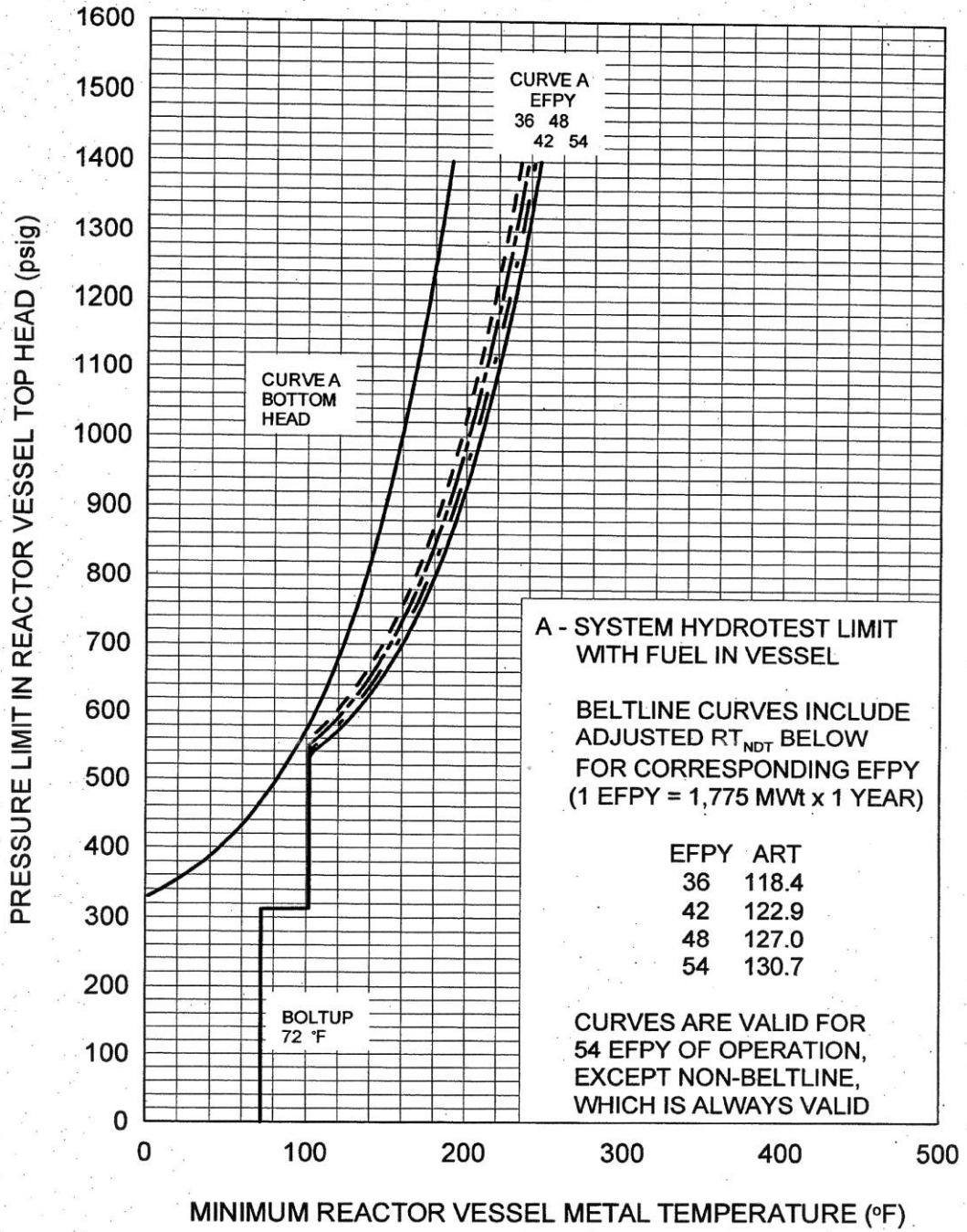
SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.4.10.8 -----NOTE-----                      Not required to be performed until 12 hours after                      RCS temperature <math>\leq 38.9^{\circ}\text{C}</math> (<math>102^{\circ}\text{F}</math>) in MODE 4.                      -----                      Verify reactor vessel flange and head flange                      temperatures are <math>\geq 22.2^{\circ}\text{C}</math> (<math>72^{\circ}\text{F}</math>) for unit 1 and  <math>21^{\circ}\text{C}</math> (<math>70^{\circ}\text{F}</math>) for unit 2.</p>	<p>12 hours</p>



Unit 1 Pressure vs. Minimum Metal Temperature for 24 EFPY and 32 EFPY  
FIGURE 3.4.10-1

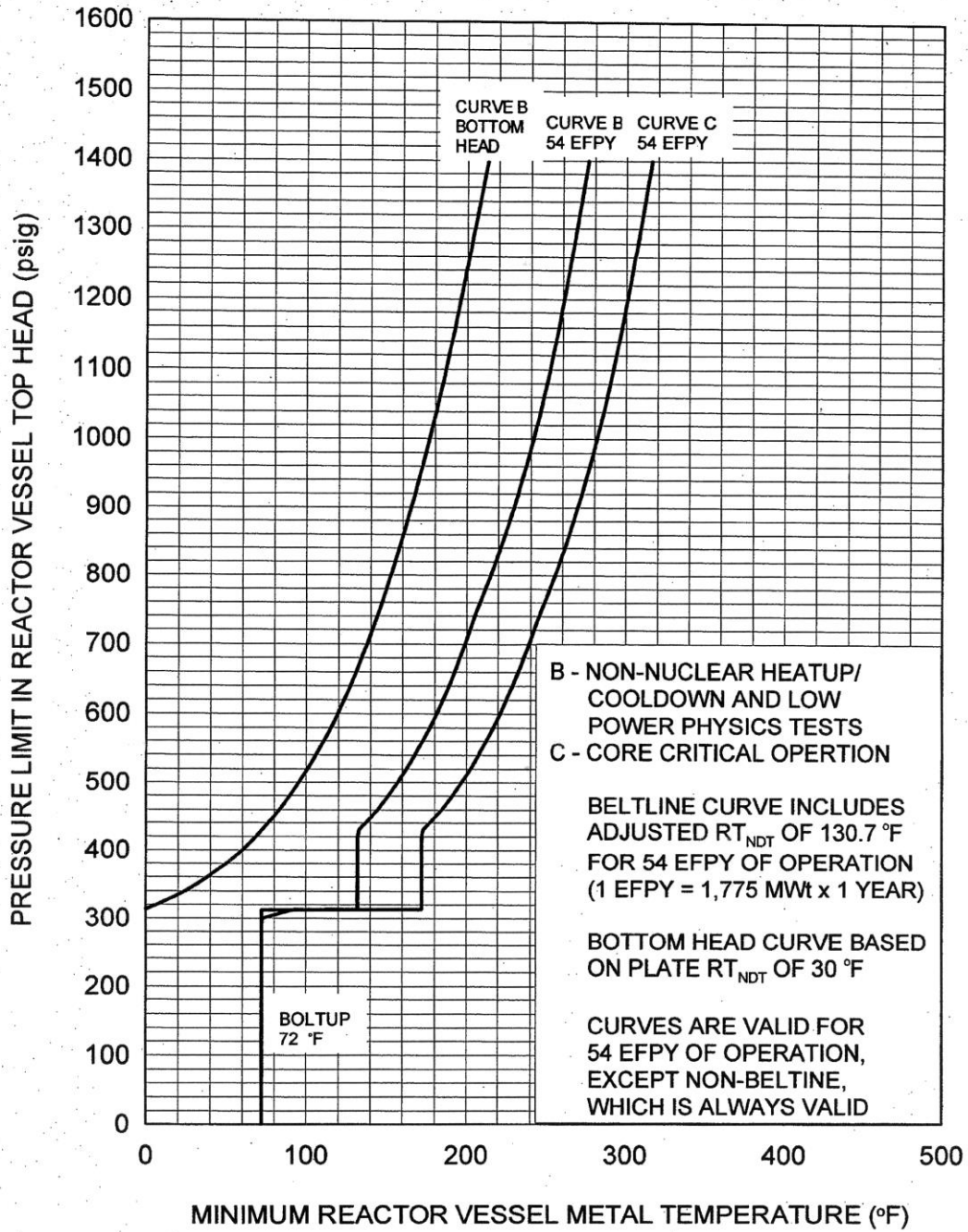




核一廠一號機壓力測試 P-T 曲線圖

Unit 1 Pressure vs. Minimum Metal Temperature from 32 EF PY to 54 EF PY

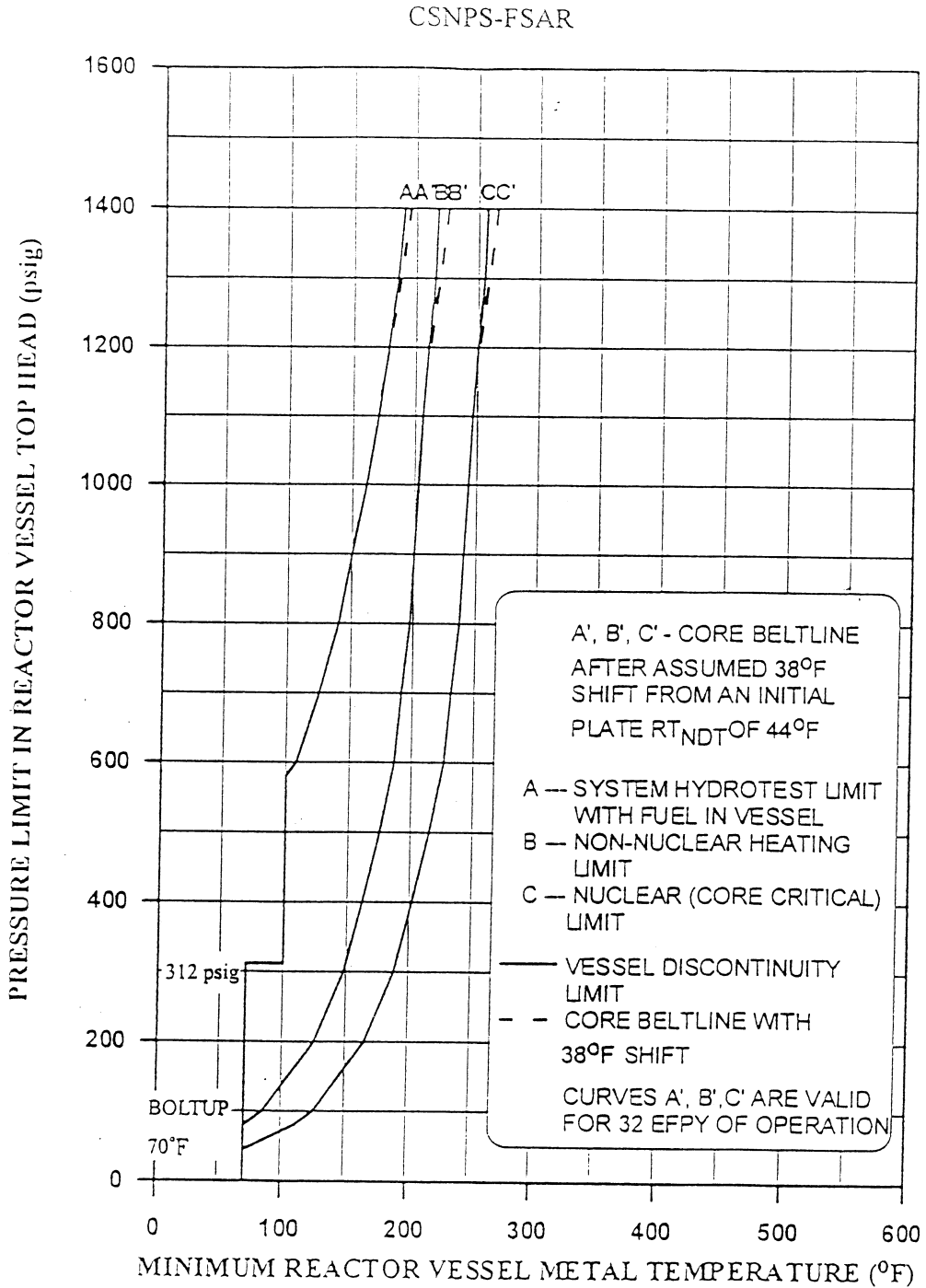
FIGURE 3.4.10-1a



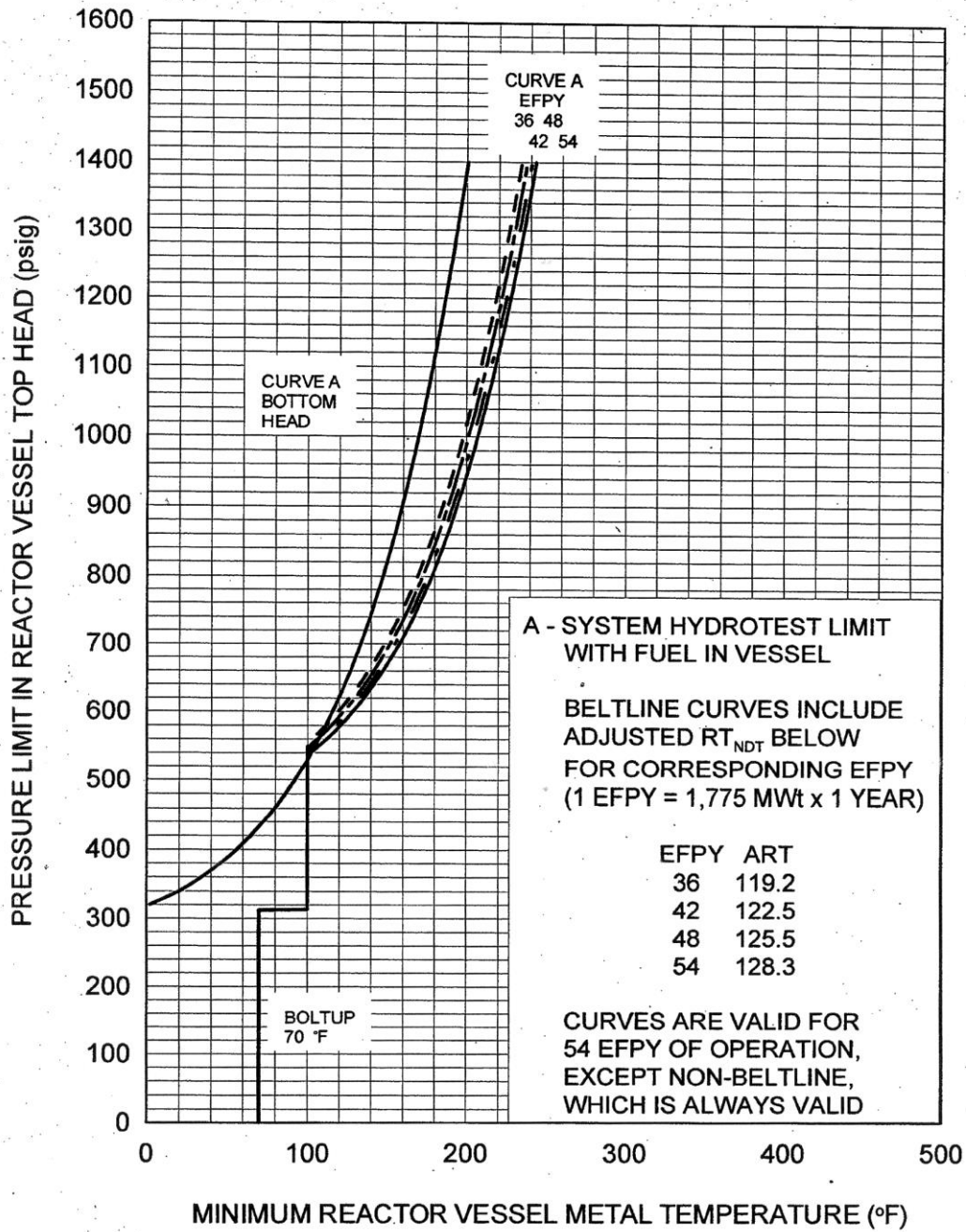
核一廠一號機 Heatup/Cooldown 及爐心臨界 P-T 曲線圖

Unit 1 Pressure vs. Minimum Metal Temperature from 32 EFPY to 54 EFPY

**FIGURE 3.4.10-1b**



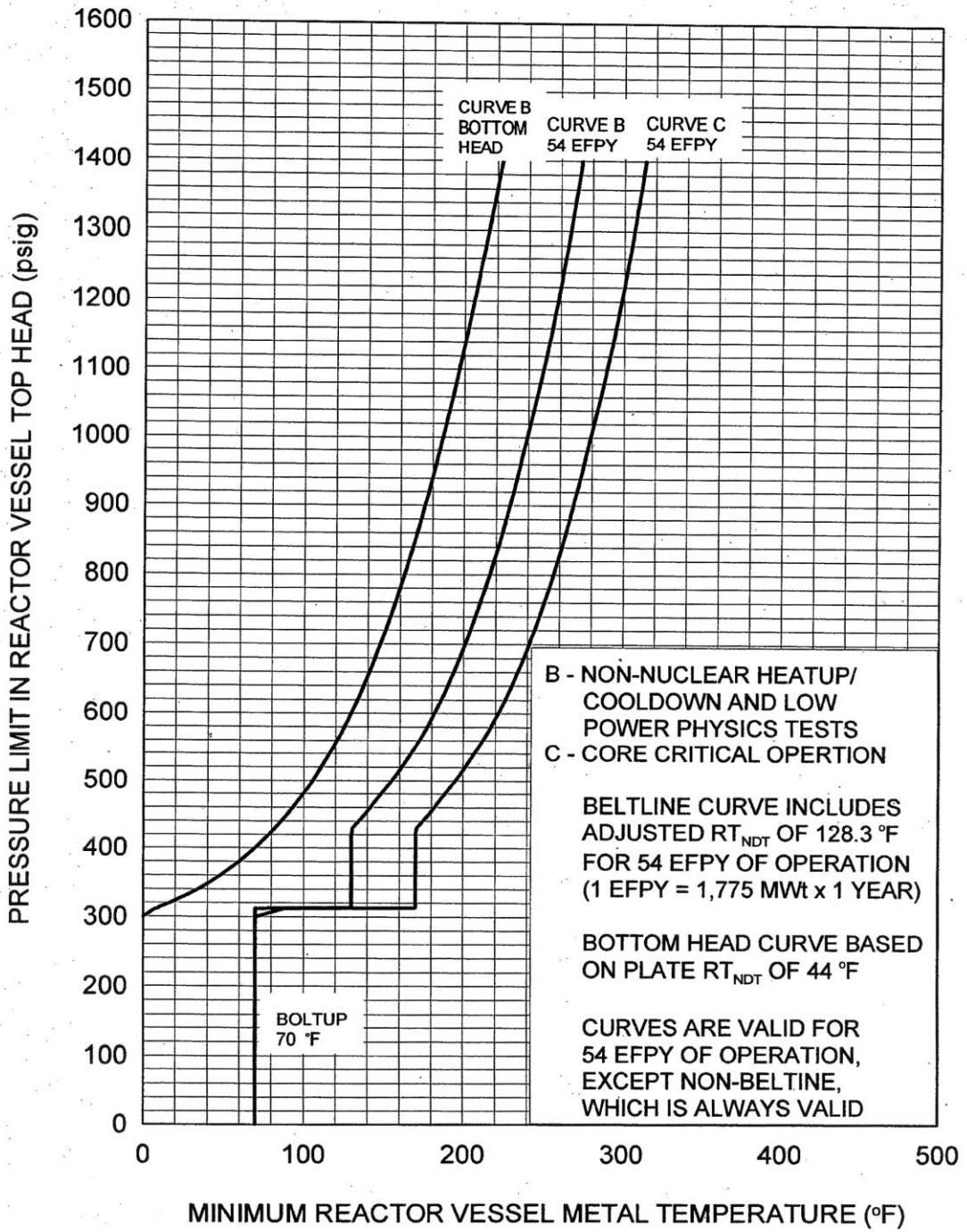
Unit 2 Pressure vs. Minimum Metal Temperature for 32 EFPY  
FIGURE 3.4.10-2



核一廠二號機壓力測試 P-T 曲線圖

Unit 2 Pressure vs. Minimum Metal Temperature from 32 EFPY to 54 EFPY

FIGURE 3.4.10-2a



核一廠二號機 Heatup/Cooldown 及爐心臨界 P-T 曲線圖

Unit 2 Pressure vs. Minimum Metal Temperature from 32 EFY to 54 EFY

FIGURE 3.4.10-2b

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.11 Reactor Steam Dome Pressure

LCO 3.4.11 The reactor steam dome pressure shall be  $\leq 70.8 \text{ kg/cm}^2$  (1005 psig).

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 3.4.11.1 Verify reactor steam dome pressure is $\leq 70.8 \text{ kg/cm}^2$ (1005 psig).	12 hours