
3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departure.

STP DEP 16.3-1

LCO 3.0.6 When a supported system LCO is not met solely due to a support system LCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered. Only the support system LCO ACTIONS are required to be entered. This is an exception to LCO 3.0.2 for the supported system. In this event, additional evaluations and limitations may be required in accordance with Specification ~~5.8~~5.6, "Safety Function Determination Program (SFDP)." If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

SDM

3.1.1

3.1 REACTIVITY CONTROL SYSTEMS

3.1.1 SHUTDOWN MARGIN (SDM)

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

3.1 REACTIVITY CONTROL SYSTEMS

3.1.2 Reactivity Anomalies

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

Control Rod OPERABILITY
3.1.3

3.1 REACTIVITY CONTROL SYSTEMS

3.1.3 Control Rod OPERABILITY

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

Control Rod Scram Times
3.1.4

3.1 REACTIVITY CONTROL SYSTEMS

3.1.4 Control Rod Scram Times

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

Control Rod Scram Accumulators
3.1.5

3.1 REACTIVITY CONTROL SYSTEMS

3.1.5 Control Rod Scram Accumulators

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

Rod Pattern Control
3.1.6

3.1 REACTIVITY CONTROL SYSTEMS

3.1.6 Rod Pattern Control

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

SLC System
3.1.7

3.1 REACTIVITY CONTROL SYSTEMS

3.1.7 Standby Liquid Control (SLC) System

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

APLHGR

3.2.1

3.2 POWER DISTRIBUTION LIMITS

3.2.1 AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

MCPR
3.2.2

3.2 POWER DISTRIBUTION LIMITS

3.2.2 MINIMUM CRITICAL POWER RATIO (MCPR)

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

LHGR (Non-GE Fuel)
3.2.3

3.2 POWER DISTRIBUTION LIMITS

3.2.3 LINEAR HEAT GENERATION RATE (LHGR) (Non-GE Fuel)

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

SSLC Sensor Instrumentation

3.3.1.1

3.3 INSTRUMENTATION

3.3.1.1 Safety System Logic and Control (SSLC) Sensor Instrumentation

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departures.

STD DEP T1 2.2-1
 STD DEP T1 2.3-1
 STD DEP T1 2.4-2
 STD DEP T1 2.4-3
 STD DEP 4.4-1
 STD DEP 16.3-79
 STD DEP 16.3-84

STD DEP 4.4-1

The plant stability evaluation was provided in ABWR Licensing Topical Report NEDO-33336, Advanced Boiling Water Reactor (ABWR) Stability Evaluation, June 2007. Pages C-9 and C-10 are incorporated by reference.

SURVEILLANCE REQUIREMENTS

<i>SURVEILLANCE</i>	<i>FREQUENCY</i>
STD DEP T1 2.2-1 SR 3.3.1.1.10 <div> <div>-----NOTES-----</div> <div> <p>1. Neutron detectors are excluded.</p> <p>2. SENSOR CHANNEL CALIBRATION shall include calibration of all parameters used to calculate setpoints (e.g., recirculation flow for TPM setpoint) and all parameters used for trip function bypasses (e.g., Turbine first stage pressure for TSV closure bypass NMS simulated thermal power).</p> </div> <div>-----</div> </div> <p>Perform SENSOR CHANNEL CALIBRATION.</p>	18 months

SSLC Sensor Instrumentation
3.3.1.1

Table 3.3.1.1-1 (page 1 of 7)
SSLC Sensor Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS REFERENCED FROM REQUIRED ACTIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
STD DEP 16.3-79					
1. Startup Range Neutron Monitors					
1b. SRNM Neutron Flux - Short Period	2 ^(b)	4	H	SR 3.3.1.1.1 SR 3.3.1.1.3 SR 3.3.1.1.8 SR 3.3.1.1.9 SR 3.3.1.1.10	≤ [] seconds
1d. SRNM – Inop	1,2	4	H	SR 3.3.1.1.3 SR 3.3.1.1.9	NA
STD DEP 16.3-79					
2. Average Power Range Monitors					
2a. APRM Neutron Flux - High, Setdown	2	4	H	SR 3.3.1.1.1 SR 3.3.1.1.3 SR 3.3.1.1.7 SR 3.3.1.1.8 SR 3.3.1.1.9 SR 3.3.1.1.10	≤ []% RTP
2d. APRM - Inop	1,2	4	H	SR 3.3.1.1.5 SR 3.3.1.1.7 SR 3.3.1.1.9	NA

SSLC Sensor Instrumentation
3.3.1.1

Table 3.3.1.1-1 (page 2 of 7)
SSLC Sensor Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS REFERENCED FROM REQUIRED ACTIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
STD DEP 16.3-79					
2f. Oscillation Power Range Monitor	Per Figure 3.3.1.1-1	4	J	SR 3.3.1.1.1 SR 3.3.1.1.5 <u>SR 3.3.1.1.7</u> SR 3.3.1.1.9 SR 3.3.1.1.10 SR 3.3.1.1.12	See footnote (c)
STD DEP 16.3-84					
3. Reactor Vessel Steam Dome Pressure - High					
3c. SLCS and FWRB Initiation	1,2	4	⊖ <u>H</u>		

Table 3.3.1.1-1 (page 3 of 7)
SSLC Sensor Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS REFERENCED FROM REQUIRED ACTIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
STD DEP 16.3-84					
7. Reactor Vessel Water Level - Low, Level 2					
7c. SLCS and FWRB Initiation	1,2	4	⊖ <u>H</u>	SR 3.3.1.1.1 SR 3.3.1.1.6 SR 3.3.1.1.11	≥ [] cm

SSLC Sensor Instrumentation
3.3.1.1

Table 3.3.1.1-1 (page 4 of 7)
SSLC Sensor Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS REFERENCED FROM REQUIRED ACTIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
STD DEP T1 2.4-2					
11. Drywell Pressure - High					
11d. <u>Feedwater Line Break Mitigation Initiation</u>	<u>1,2,3</u>	<u>4</u>	<u>P</u>	<u>SR 3.3.1.1.1</u> <u>SR 3.3.1.1.5</u> <u>SR 3.3.1.1.9</u> <u>SR 3.3.1.1.10</u> <u>SR 3.3.1.1.13</u>	<u>≤ [] MPaG</u>
STD DEP 16.3-79					
12. CRD Water Header Charging Pressure - Low	1,2	4	H	SR 3.3.1.1.1 SR 3.3.1.1.5 SR 3.3.1.1.9 SR 3.3.1.1.10	≤ [] MPaG
STD DEP T1 2.3-1					
15. Main Steam Tunnel Radiation - High					
STD DEP T1 2.4-2 <u>Feedwater Line Differential Pressure - High</u>	<u>1,2,3</u>	<u>4</u>	<u>P</u>	<u>SR 3.3.1.1.1</u> <u>SR 3.3.1.1.5</u> <u>SR 3.3.1.1.9</u> <u>SR 3.3.1.1.10</u> <u>SR 3.3.1.1.13</u>	<u>≤ [] MPaD</u>
STD DEP T1 2.3-1					
15a. RPS Trip Initiation	1,2	4	H	SR 3.3.1.1.5 SR 3.3.1.1.9 SR 3.3.1.1.10	≤ [] gray
15b. Isolation Initiation	1,2,3	4	Q	SR 3.3.1.1.5 SR 3.3.1.1.9 SR 3.3.1.1.10	≤ [] gray

SSLC Sensor Instrumentation
3.3.1.1

Table 3.3.1.1-1 (page 5 of 7)
SSLC Sensor Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS REFERENCED FROM REQUIRED ACTIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
STD DEP 16.3-79 24a. Reactor Building Area Exhaust Air Radiation - High	1,2,3	4	K	SR 3.3.1.1.1 SR 3.3.1.1.5 <u>SR 3.3.1.1.9</u> <u>SR 3.3.1.1.10</u> <u>SR 3.3.1.1.14</u>	$\leq []$ gray

Table 3.3.1.1-1 (page 6 of 7)
SSLC Sensor Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS REFERENCED FROM REQUIRED ACTIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
24b. Fuel Handling Area Exhaust Air Radiation – High	1,2,3	4	K	SR 3.3.1.1.1 SR 3.3.1.1.5 <u>SR 3.3.1.1.9</u> <u>SR 3.3.1.1.10</u> <u>SR 3.3.1.1.14</u>	$\leq []$ gray
STD DEP T1 2.4-3 26. RCIC Steam Supply Line Pressure – Low <u>Not</u> <u>Used</u>	1,2,3	4	K	SR 3.3.1.1.1 SR 3.3.1.1.5 SR 3.3.1.1.9 SR 3.3.1.1.10	$\leq []$ MPaG

RPS and MSIV Actuation
3.3.1.2

3.3 INSTRUMENTATION

3.3.1.2 Reactor Protection System (RPS) and Main Steam Isolation Valve (MSIV) Actuation

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departure.

STD DEP 16.3-81

Table 3.3.1.2-1 (page 1 of 1)
RPS and MSIV Actuation

<i>FUNCTION</i>	<i>APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS</i>	<i>REQUIRED CHANNELS</i>	<i>SURVEILLANCE REQUIREMENTS</i>
<i>1. RPS Actuation.</i>			
<i>a. LOGIC CHANNELs</i>	<i>1,2,5(a)(b)</i>	<i>4</i>	<i>SR 3.3.1.2.2 SR 3.3.1.2.4 SR 3.3.1.2.6</i>
<i>b. OUTPUT CHANNELs</i>	<i>1,2,5(a)</i>	<i>4</i>	<i>SR 3.3.1.2.2 SR 3.3.1.2.4 SR 3.3.1.2.5 SR 3.3.1.2.6</i>
<i>2. MSIVs and MSL Drain Valves Actuation.</i>			
<i>b. OUTPUT CHANNELs</i>	<i>1,2,3</i>	<i>4</i>	<i>SR 3.3.1.2.2 SR 3.3.1.2.4 SR 3.3.1.2.5 SR 3.3.1.2.7</i>

(b) SRNM and APRM LOGIC CHANNELS are only required to be OPERABLE when the associated Functions in LCO 3.3.1.1 are required to be OPERABLE.

SLC and FWRB Actuation
3.3.1.3

3.3 INSTRUMENTATION

3.3.1.3 Standby Liquid Control (SLC) and Feedwater Runback (FWRB) Actuation

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the no departures or supplements.

ESF Actuation Instrumentation
3.3.1.4

3.3 INSTRUMENTATION

3.3.1.4 ESF Actuation Instrumentation

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departures.

STD DEP T1 2.4-2

STD DEP T1 2.4-3

STD DEP T1 3.4-1

STD DEP 8.3-1

STD DEP 16.3-50

STD DEP 16.3-86

STD DEP 16.3-94

STD DEP 8.3-1

The plant medium voltage electrical system alternate design description was provided in ABWR Licensing Topical Report NEDO-33335, Advanced Boiling Water Reactor (ABWR) Plant Medium Voltage Electrical System Design, May 2007. LTR pages 3.3-36 and 37 are incorporated by reference.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>STD DEP T1 3.4-1</p> <p><i>B. One or more Functions with one or more LOGIC CHANNELS inoperable.</i></p> <p><u>OR</u></p> <p><i>One or more Functions with one or more OUTPUT CHANNELS manual initiation channel inoperable.</i></p>	<p><i>B.1 Place associated channel in bypass.</i></p> <p><u>AND</u></p> <p><i>B.2.1 Restore channel(s) to OPERABLE status.</i></p> <p><u>OR</u></p> <p><i>B.2.2 Verify redundant feature(s) are OPERABLE.</i></p>	<p><i>1 hour</i></p> <p><i>30 days</i></p> <p><i>30 days</i></p>
<p>STD DEP T1 3.4-1</p> <p><i>C. One or more Functions with one or more SENSOR CHANNELS inoperable.</i></p> <p><u>OR</u></p> <p><i>One or more Functions with two LOGIC CHANNELS or two manual initiation channels inoperable.</i></p>	<p><i>C.1 Restore at least one required channel(s) to OPERABLE status.</i></p>	<p><i>1 hour</i></p>

ESF Actuation Instrumentation
3.3.1.4

<p><u>OR</u></p> <p><i>One or more ATWS manual ADS inhibit channels inoperable in one ADS division.</i></p> <p><u>OR</u></p> <p><i>Five required ADS SENSOR CHANNELS inoperable in one ADS division.</i></p>		
<p>STD DEP T1 3.4-1</p> <p>I. One or more SENSOR CHANNELS inoperable.</p> <p><u>OR</u></p> <p><i>One or more ADS valves with two OUTPUT CHANNELS inoperable in two ADS divisions.</i></p> <p><u>OR</u></p> <p><i>One or more ADS LOGIC CHANNELS inoperable in two ADS divisions.</i></p> <p><u>OR</u></p> <p><i>One or more ADS manual initiation channels inoperable in two ADS divisions.</i></p> <p><u>OR</u></p> <p><i>One or more ATWS manual ADS inhibit channels inoperable in two ADS divisions.</i></p> <p><u>OR</u></p> <p><i>Required Action and associated Completion</i></p>	<p>I.1 <i>Declare associated ESF features inoperable.</i></p>	<p><i>1 hour</i></p>

ESF Actuation Instrumentation
3.3.1.4

<i>Time of Condition H not met.</i>		
STD DEP T1 3.4-1 <i>M. ADS initiation capability not maintained in both ADS divisions.</i> <u>OR</u> <i>Required Actions and associated Completion Times of Condition H, J, K, or L not met.</i>	<i>M.1 Declare ADS valves inoperable.</i>	<i>Immediately</i>

<i>SURVEILLANCE</i>	<i>FREQUENCY</i>
STD DEP 16.3-86 SR 3.3.1.4.7 <i>Perform Manual initiation CHANNEL FUNCTIONAL TEST.</i>	<i>18 months</i>

ESF Actuation Instrumentation
3.3.1.4

Table 3.3.1.4-1 (page 1 of 5)
ESF Actuation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	APPLICABLE CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
STD DEP T1 3.4-1					
1. Low Pressure Core Flooder Actuation.					
1.c LPFL System Initiation.	1,2,3, 4 ^(g) ,5 ^(g)	2 per subsystem ^(b)	B , C		
1.d LPFL Device Actuation.	1,2,3, 4 ^(g) ,5 ^(g)	1 per actuated device ^(c)	D , B	SR-3.3.1.4.3	
1.e LPFL Manual Initiation.	1,2,3, 4 ^(g) ,5 ^(g)	2 per subsystem ^(d)	B , F		
STD DEP T1 3.4-1					
2. High Pressure Core Flooder Actuation.					
2.d HPCF System Initiation.	1,2,3, 4 ^(g) ,5 ^(g)	2 per subsystem ^(b)	B , C		
2.e HPCF Device Actuation.	1,2,3, 4 ^(g) ,5 ^(g)	1 per actuated device ^(c)	D , B	SR-3.3.1.4.3	
2.f HPCF B Manual Initiation.	1,2,3, 4 ^(g) ,5 ^(g)	2 ^(d)	B , F		
2.g HPCF C <u>Diverse Logic</u> Manual Initiation.					
STD DEP T1 3.4-1					
3. Reactor Core Isolation Cooling System Actuation.					
3.c RCIC System Initiation.	1,2 ^(e) ,3 ^(e)	2 ^(b)	B , C		

ESF Actuation Instrumentation

3.3.1.4

3.d	RCIC Device Actuation.	1,2 ^(e) ,3 ^(e)	1 per actuated device ^(c)	D B	SR-3.3.1.4.3
3.e	RCIC Manual Initiation.	1,2 ^(e) ,3 ^(e)	2 ^(d)	B ,F	
STD DEP T1 3.4-1					
4.	Automatic Depressurization System.				
4.a	ADS System Initiation.	1,2 ^(f) ,3 ^(f) 4^(f),5^(f)	2 per subsystem ^(b)	H, I	
4.b	ADS Device Actuation.	1,2 ^(f) ,3 ^(f) 4^(f),5^(f)	2 per ADS valve ^(c)	H, I	SR-3.3.1.4.3
4.c	ADS Manual Initiation.	1,2 ^(f) ,3 ^(f) 4^(f),5^(f)	2 per subsystem ^(d)	H, I	
4.f	ATWS Manual ADS Inhibit.	1,2	2 per subsystem ^(d)	H, I	
STD DEP T1 3.4-1					
5.	Diesel-Generator Actuation.				
5.c	DG System Initiation.	1,2,3, 4 ^(h) ,5 ^(h)	≥ 1 per DG ^(b)	B, C	
5.d	DG Device Actuation.				SR-3.3.1.4.3
5.e	DG Manual Initiation.	1,2,3, 4 ^(h) ,5 ^(h)	≥ 1 per DG ^(d)	B ,F	
STD DEP T1 3.4-1					
6.	Standby Gas Treatment System Actuation.				
6.a	SGTS Initiation.	1,2,3 (i)(j)	1 per subsystem ^(b)	B, C	
6.b	SGTS Device Actuation.				SR-3.3.1.4.3
STD DEP T1 3.4-1					
7.	Reactor Building Cooling Water/Service Water Actuation.				

ESF Actuation Instrumentation
3.3.1.4

7.a	RCW/RSW System Initiation.	1,2,3, 4 ^(g) ,5 ^(g)	2 1 per subsystem ^(b)	B , C	
7.b	RCW/RSW Device Actuation.				SR 3.3.1.4.3
7.c	RCW/RSW Manual Initiation.	1,2,3, 4 ^(g) ,5 ^(g)	2 1 per subsystem ^(d)	B , F	
STD DEP T1 3.4-1					
8.	Containment Atmospheric Monitoring.				
8.a	CAM System Initiation.	1,2,3	2 1 per subsystem ^(b)	B , C	
8.b	CAM Device Actuation.				SR 3.3.1.4.3
STD DEP T1 3.4-1					
9.	Suppression Pool Cooling Actuation.				
9.a	SPC System Initiation.	1,2,3, 4 ^(g) ,5 ^(g)	2 1 per subsystem ^(b)	B , C	
9.b	SPC Device Actuation.				SR 3.3.1.4.3
9.c	SPC Manual Initiation.	1,2,3, 4 ^(g) ,5 ^(g)	2 1 per subsystem ^(d)	B , F	
STD DEP T1 3.4-1					
10.	Containment Isolation Valves Actuation.				
10.a	CIV System Initiation.	1,2,3 (i)(j)	2 1 per division ^(b)	B , C	
10.b	CIV Device Actuation.	1,2,3 (i)(j)	1 per actuated device ^(c)	D	SR 3.3.1.4.3
10.e	RCW Inside Drywell System Isolation Initiation.	<u>1,2,3</u>	<u>2 per division^(b)</u>	<u>B</u>	<u>SR 3.3.1.4.3</u> <u>SR 3.3.1.4.4</u> <u>NA</u>

ESF Actuation Instrumentation
3.3.1.4

10.f	RCW Inside Drywell Isolation Device Actuation.	1,2,3	1 per actuated device ^(c)	D	SR 3.3.1.4.2 SR 3.3.1.4.4	NA
10.g	Exhaust Air Radiation – High Isolation Initiation.	1,2,3, (i),(j)	1 per division ^(b)	B	SR 3.3.1.4.3 SR 3.3.1.4.4	NA
10.h	Exhaust Air Radiation – High Isolation Device Actuation.	1,2,3, (i),(j)	1 per actuated device ^(c)	D	SR 3.3.1.4.2 SR 3.3.1.4.4	NA
STD DEP T1 3.4-1						
11.	CIV Divisional Manual Initiation.	1,2,3 (f i)	≥ 1 per division ^(d)	B, C F		
STD DEP T1 3.4-1						
12.	Reactor Core Isolation Cooling Isolation Actuation.					
12.a	RCIC System Isolation Initiation.	1,2,3	≥ 1 per division ^(b)	B, C		
12.b	RCIC Isolation Device Actuation.				SR 3.3.1.4.3	
12.c	RCIC Manual Isolation Initiation.	1,2,3	≥ 1 per division ^(d)	B, F		
STD DEP T1 2.4-3						
12.d	RCIC Turbine Exhaust Diaphragm Pressure – High.	1,2,3	2 per division^(a)	I	SR 3.3.1.4.1 SR 3.3.1.4.3 SR 3.3.1.4.4 SR 3.3.1.4.6	≥ [] MPaG
STD DEP T1 3.4-1						
13.	Reactor Water Cleanup Isolation Actuation.					
13.a	CUW System Isolation Initiation.	1,2,3 (i)	≥ 1 per division ^(b)	B, C		
13.b	CUW Isolation Device Actuation.				SR 3.3.1.4.3	

ESF Actuation Instrumentation
3.3.1.4

STD DEP 16.3-94

13.c CUW Isolation on SLC Initiation. 1,2,3

STD DEP T1 3.4-1

STD DEP 16.3-50

14. Shutdown Cooling System Isolation Actuation.

14.a SD Cooling System Isolation Initiation.	1,2,3, (i)	≥ 1 per division ^(b)	B, C	SR 3.3.1.4.3 SR 3.3.1.4.4	NA
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14.b SD Cooling Isolation Device Actuation.	1,2,3, (i)			SR 3.3.1.4.3	
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STD DEP T1 2.4-2

15. Feedwater Line Break Mitigation Actuation.

15.a Feedwater Line Break Mitigation Initiation.	1,2,3	1 per division ^(b)	B	SR 3.3.1.4.3 SR 3.3.1.4.4 SR 3.3.1.4.5	NA
--	-------	-------------------------------	---	--	----

15.b Feedwater Line Break Mitigation Device Actuation.	1,2,3	1 per actuated device ^(c)	B	SR 3.3.1.4.2 SR 3.3.1.4.4 SR 3.3.1.4.5	NA
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STD DEP 16.3-86

(d) These are manual initiation channel Functions.

SRNM Instrumentation

3.3.2.1

3.3 INSTRUMENTATION

3.3.2.1 Startup Range Monitor (SRNM) Instrumentation

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

Essential ~~Multiplexing System~~ Communication Function

3.3.3.1

3.3 INSTRUMENTATION

3.3.3.1 Essential ~~Multiplexing System~~ Communication Function (EMS ECF)

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departure.

STD DEP T1 3.4-1

LCO 3.3.3.1 *Four divisions of ~~EMS~~ ECF data transmission shall be OPERABLE.*

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more data transmission segments inoperable in one EMS <u>ECF</u> division with data transmission maintained.	<p>-----NOTE----- LCO 3.0.4 is not applicable. -----</p> <p>A.1 Restore all data transmission segments to OPERABLE status.</p>	Prior to entering MODE 2 following next MODE 4 entry.
B. One or more data transmission segments inoperable in two or more EMS <u>ECF</u> divisions with data transmission maintained in all divisions.	B.1 Restore all data transmission segments in at least three EMS <u>ECF</u> divisions to OPERABLE status.	[30] days
D. One or more EMS <u>ECF</u> divisions inoperable.	<p>-----NOTE----- LCO 3.0.4 is not applicable. -----</p> <p>D.1 Declare affected Functions and supported features inoperable.</p>	4 hours

3.3 INSTRUMENTATION

3.3.4.1 Anticipated Transient Without Scram (ATWS) and End-of-Cycle Recirculation Pump Trip (EOC-RPT) Instrumentation

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departure.

STD DEP 16.3-38

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
STD DEP 16.3-38 A. One or more Functions with one inoperable channel.	<p>-----NOTE----- Applies only to Functions 1, 3, 5, 11, and 14 in Table 3.3.4.1-1. -----</p> <p>A.1 Place channel(s) in bypass.</p> <p><u>AND</u></p> <p>A.1.2.1 Restore channel to OPERABLE status.</p> <p><u>OR</u></p> <p>A.1.2.2 Place channel(s) in trip.</p> <p><u>OR</u></p> <p>A.2 Place channel(s) in trip.</p>	<p>6 hours</p> <p>14 days</p> <p>14 days</p> <p>6 hours</p>
STD DEP 16.3-38 B. One or more Functions with two or more channels inoperable.	<p>-----NOTE----- Applies only to Functions 1, 3, 5, 11, and 14 in Table 3.3.4.1-1. -----</p> <p>B.1 -----NOTE----- <u>Applies only to Functions 1, 3, 5, and 11 in Table 3.3.4.1-1.</u> -----</p> <p>Restore two channels to OPERABLE status.</p>	<p>72 hours</p>

ATWS & EOC-RPT Instrumentation
3.3.4.1

CONDITION	REQUIRED ACTION	COMPLETION TIME
	<u>OR</u> <u>B.2</u> -----NOTE----- <u>Applies only to Function 14 in</u> <u>Table 3.3.4.1-1.</u> ----- <u>Restore one channel to</u> <u>OPERABLE status.</u>	<u>72 hours</u>
STD DEP 16.3-38 C. One or more Functions with one channel inoperable.	-----NOTE----- Applies only to Functions 2, and 4, and 9 in Table 3.3.4.1-1. ----- C.1.1 Place channel(s) in bypass. <u>AND</u> C.1.2.1 Restore channel(s) to OPERABLE status. <u>OR</u> C.1.2.2 Place channel(s) in trip. <u>OR</u> C.2 Place channel(s) in trip.	6 hours 30 days 30 days 6 hours
STD DEP 16.3-38 <u>D. One channel inoperable.</u>	-----NOTE----- <u>Applies only to Function 9 in</u> <u>Table 3.3.4.1-1.</u> ----- <u>D.1</u> Restore channel to <u>OPERABLE status.</u>	<u>30 days</u>
STD DEP 16.3-38 D E. One or more Functions with two channels inoperable.	-----NOTE----- Applies only to Functions 2, 4, and 9 in Table 3.3.4.1-1. ----- D E.1 Restore one inoperable channel to OPERABLE status.	72 hours

ATWS & EOC-RPT Instrumentation
3.3.4.1

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>STD DEP 16.3-38</p> <p>EF. One or more Functions with three or more channels inoperable.</p>	<p>-----NOTE-----</p> <p>Applies only to Functions 2, 4, and 9 in Table 3.3.4.1-1.</p> <p>-----</p> <p>EF.1 Restore at least one inoperable channel to OPERABLE status</p>	<p>[24] hours</p>
<p>STD DEP 16.3-38</p> <p>FG. Required Action and associated Completion Time of Condition C, DE, or EF not met.</p>	<p>-----NOTE-----</p> <p>Applies only to Function 4 in Table 3.3.4.1-1.</p> <p>-----</p> <p>FG.1 Apply the MCPR limit for inoperable EOC-RPT as specified in the COLR.</p> <p>OR</p> <p>FG.2 Reduce power to $\leq 40\%$ RTP.</p>	<p>[2] hours</p> <p>[2] hours</p>
<p>STD DEP 16.3-38</p> <p>GH. One or more Functions with one or more channels inoperable.</p>	<p>-----NOTE-----</p> <p>Applies only to Functions 6, 7, 8, 10, 12, 13, 15, and 16 in Table 3.3.4.1-1.</p> <p>-----</p> <p>GH.1 Restore channels to OPERABLE status.</p>	<p>[24] hours</p>
<p>STD DEP 16.3-38</p> <p>HJ. Required Action and associated Completion time not met.</p>	<p>HJ.1 -----NOTE-----</p> <p>Applies only to Functions 6, 7, 8, and 16 in Table 3.3.4.1-1.</p> <p>-----</p> <p>Declare affected Functions and supported features inoperable. Remove the associated Reactor Internal Pump from service.</p>	<p>Immediately 12 hours</p>

ATWS & EOC-RPT Instrumentation
3.3.4.1

<i>CONDITION</i>	<i>REQUIRED ACTION</i>	<i>COMPLETION TIME</i>
	<p><u>OR</u></p> <p>H₁.2 -----NOTE----- <i>Applies only to Functions 1, 2, 3, 5, 9, 10, <u>11</u>, 12, 13, 14, and 15 in Table 3.3.4.1-1.</i> -----</p> <p><i>Be in MODE 3.</i></p>	<p><i>12 hours</i></p>

ATWS & EOC-RPT Instrumentation
3.3.4.1

Table 3.3.4.1-1 (page 1 of 1)
ATWS and EOC-RPT Instrumentation

FUNCTION	REQUIRED CHANNELS	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUES
STD DEP 16.3-38				
9. RPS Scram Follow Signal.	4	1,2	SR 3.3.4.1.2 SR 3.3.4.1.4 SR 3.3.4.1.6	NA
STD DEP 16.3-38				
14. ATWS-ARI Valve Actuation.	3 2	1,2	SR 3.3.4.1.4	NA

STD DEP 16.3-38

(a) ~~≤ [] seconds for RIPs [A, D, F, J, B, E, & H] and~~ ≤ [] seconds for RIPs [C, G, & K].

Feedwater Pump and Main Turbine Trip Instrumentation
3.3.4.2

3.3 INSTRUMENTATION

3.3.4.2 Feedwater Pump and Main Turbine Trip Instrumentation

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departure and site-specific supplement. The site-specific supplement partially addresses COL License Information Item 16.1

STD DEP 16.3-39

LCO 3.3.4.2 ~~Three channels of~~ The following feedwater pump and main turbine trip instrumentation shall be OPERABLE:-
a. Three instrumentation channels;
b. Three digital controllers; and
c. Two termination modules per operating feedwater pump and the main turbine.

APPLICABILITY:

-----NOTE-----
Separate Condition entry is allowed for each instrumentation channel, digital controller, or termination module.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One feedwater and main turbine trip instrumentation channel inoperable.	<p>A.1 Place channel in trip.</p> <p><u>OR</u></p> <p>A.2.1 Place channel in bypass.</p> <p>AND</p> <p>A.2.2.1 Restore instrumentation channel to OPERABLE status.</p> <p>OR</p> <p>A.2.2.2 Place channel in trip.</p>	<p>6 hours</p> <p>6 hours</p> <p>14 days</p> <p>14 days</p>
B. Two or more feedwater and main turbine trip channels inoperable <u>One digital controller inoperable.</u>	B.1 Restore two channels digital controller to OPERABLE status.	72 hours 14 days

Feedwater Pump and Main Turbine Trip Instrumentation
3.3.4.2

<i>CONDITION</i>	<i>REQUIRED ACTION</i>	<i>COMPLETION TIME</i>
<u>C. Two or more instrumentation channels inoperable.</u>	<u>C.1 Restore two instrumentation channels to OPERABLE status.</u>	<u>72 hours</u>
<u>D. Two or more digital controllers inoperable.</u>	<u>D.1 Restore two digital controllers to OPERABLE status.</u>	<u>72 hours</u>
<u>E. One or more termination modules inoperable.</u>	<u>E.1 Restore termination module to OPERABLE status.</u>	<u>72 hours</u>
E. Required Action and associated Completion Time not met.	E.1 Reduce THERMAL POWER to < 25% RTP.	4 hours

Feedwater Pump and Main Turbine Trip Instrumentation
3.3.4.2

SURVEILLANCE REQUIREMENTS

<i>SURVEILLANCE</i>		<i>FREQUENCY</i>
SR 3.3.4.2.1	Perform SENSOR CHANNEL CHECK.	24 hours
SR 3.3.4.2.2	<p>-----NOTE-----</p> <p><u>When performing the functional test entry into associated Conditions and Required Actions may be delayed up to 2 hours.</u></p> <p>-----</p> <p>Perform CHANNEL FUNCTIONAL TEST.</p>	[92] days
SR 3.3.4.2.3	Perform SENSOR CHANNEL CALIBRATION. The allowable value shall be $\leq []$ inches.	18 months
SR 3.3.4.2.4	Perform LOGIC SYSTEM FUNCTIONAL TEST including valve <u>trip</u> actuation.	18 months

3.3 INSTRUMENTATION

3.3.5.1 Control Rod Block Instrumentation

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departures.

STD DEP 16.3-64

STD DEP 16.3-65

ACTIONS

<i>CONDITION</i>	<i>REQUIRED ACTION</i>	<i>COMPLETION TIME</i>
STD DEP 16.3-64 <i>B. Two ATLM channels inoperable.</i>	<i>B.2 Verify RCIS blocks control rod movement by attempting to withdraw one rod or one gang or of rods.</i>	<i>4 hours <u>AND</u> Once per 4 hours thereafter</i>

SURVEILLANCE REQUIREMENTS

<i>SURVEILLANCE</i>	<i>FREQUENCY</i>
STD DEP 16.3-65 <i>SR 3.3.5.1.1 -----NOTE----- Not required to be performed until 1 hour after THERMAL POWER is > [40 30]% RTP. ----- Perform CHANNEL FUNCTIONAL TEST.</i>	<i>[92] days</i>

3.3 INSTRUMENTATION

3.3.6.1 Post Accident Monitoring (PAM) Instrumentation

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departures.

STD DEP T1 2.3-1
STD DEP T1 2.14-1
STD DEP 7.5-1
STD DEP 16.3-78

The design departure describing the elimination of hydrogen recombiners from the certified design was provided in ABWR Licensing Topical Report (LTR) NEDE-33330P, "Advanced Boiling Water Reactor (ABWR) Hydrogen Recombiner Requirements Elimination," May 2007. The information on pages C-108, C-109, and C-110 is incorporated by reference.

STD DEP T1 2.14-1

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more Functions with two required channels inoperable.	<hr/> <p style="text-align: center;">NOTE</p> <p style="text-align: center;">This Action is not applicable to Functions 11 and 12.</p> <hr/> <p>C.1 Restore at least one inoperable channel to OPERABLE status.</p>	7 days
D. Two required hydrogen/oxygen monitor channels inoperable.	D.1 Restore one required hydrogen/oxygen monitor channel to OPERABLE status.	72 hours
ED. Required Action and associated Completion Time of Condition C or D not met.	ED.1 Enter the Condition referenced in Table 3.3.6.1-1 for the channel.	Immediately
EE. As required by Required Action ED.1 and referenced in Table 3.3.6.1-1.	EE.1 Be in MODE 3.	12 hours

<p>GE. As required by Required Action ED.1 and referenced in Table 3.3.6.1-1.</p>	<p>GE.1 Provide alternate method of monitoring, determine the cause of the inoperability, and submit plans and schedule for restoring the instrumentation channels of the Functions to OPERABLE status to the NRC.</p>	<p>14 days</p>
---	---	----------------

STD DEP 7.5-1
STD DEP T1 2.14-1
STD DEP T1 2.3-1
STD DEP 16.3-78

Table 3.3.6.1-1 (page 1 of 1)
Post Accident Monitoring Instrumentation

FUNCTION	REQUIRED CHANNELS	CONDITIONS REFERENCED FROM REQUIRED ACTION E , 1
1. Reactor Steam Dome Pressure.	2	F E
2. Reactor Vessel Water Level - Wide Range.	2	F E
3. Reactor Vessel Water Level - Fuel Zone.	2	F E
4. Suppression Pool Water Level.	2	F E
5. Containment Pressure.		
5a. Drywell Pressure.	2	F E
5b. Wide Range Containment Wetwell Pressure.	2	F E
6. Drywell Area Radiation.	2	G F
7. Wetwell Area Radiation.	2	G F
8. PCIV Position.	2 per penetration flow path ^{(a),(b)}	F E
9. Startup Range Neutron Monitor - Neutron Flux.	2 ^(c)	F E
10. Average Power Range Monitor - Neutron Flux.	2 ^(d)	F E
11. Containment Atmospheric Monitors - Drywell H₂ & O₂ Analyzer.	2	F
12. Containment Atmospheric Monitors - Wetwell H₂ & O₂ Analyzer.	2	F
13. Containment Water Level.	2	F
14. Suppression Pool Water Temperature.	2 ^(e)	F E
15. Drywell Atmosphere Temperature.	2	F E
16. Main Steam Line Radiation.	2	F
13. Wetwell Atmosphere Temperature	2	E

Remote Shutdown System
3.3.6.2

3.3 INSTRUMENTATION

3.3.6.2 Remote Shutdown System

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departures.

STD DEP T1 2.14-1
STD DEP 8.3-1
STD DEP 16.3-59
STD DEP 16.3-60

STD DEP T1 8.3-1

The design departure describing the elimination of hydrogen recombiners from the certified design was provided in ABWR Licensing Topical Report (LTR) NEDE-33330P, "Advanced Boiling Water Reactor (ABWR) Hydrogen Recombiner Requirements Elimination." The information on pages C-111 is incorporated by reference.

*Table 3.3.6.2-1 (page 1 of 2)
Remote Shutdown System Instrumentation*

<i>FUNCTION (INSTRUMENT OR CONTROL PARAMETER)</i>	<i>REQUIRED NUMBER OF DIVISIONS</i>
STD DEP 16.3-59	
13. RPV Narrow Shutdown Range Water Level.	2
STD DEP T1 2.14-1 STD DEP 16.3-60	
17. Cooling Water Flow to Flammability Control System <u>RSW Strainer Differential Pressure.</u>	2

*Table 3.3.6.2-1 (page 2 of 2)
Remote Shutdown System Instrumentation*

<i>FUNCTION (INSTRUMENT OR CONTROL PARAMETER)</i>	<i>REQUIRED NUMBER OF DIVISIONS</i>
STD DEP 8.3-1	
21. Electric Power Distribution <u>Medium Voltage Power Distribution System Controls.</u>	2(c)

CRHA EF System Instrumentation
3.3.7.1

3.3 INSTRUMENTATION

3.3.7.1 Control Room Habitability Area (CRHA) Emergency Filtration (EF) System Instrumentation

The information in this section of the reference ABWR DCD, including all subsections and tables, is incorporated by reference with the following departure.

STD DEP 16.3-61

Table 3.3.7.1-1 (page 1 of 1)
Control Room Habitability Area – Emergency Filtration System Instrumentation

- ~~(a) During operations with a potential for draining the reactor vessel.~~
- ~~(b) During movement of irradiated fuel assemblies in the secondary containment.~~

Electric Power Monitoring
3.3.8.1

3.3 INSTRUMENTATION

3.3.8.1 Electric Power Monitoring

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

RPV Coolant Temperature Monitoring
3.3.8.2

3.3 INSTRUMENTATION

3.3.8.2 Reactor Coolant Temperature Monitoring-Shutdown

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

RIPs - Operating
3.4.1

3.4 REACTOR COOLANT SYSTEM

3.4.1 Reactor Internal Pumps (RIPs) - Operating

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departure.

STD DEP 16.3-5

SURVEILLANCE REQUIREMENTS

<i>SURVEILLANCE</i>		<i>FREQUENCY</i>
<i>SR 3.4.1.1</i>	<i>Verify at least the required number of RIPs are OPERABLE <u>operating</u> at any THERMAL POWER level.</i>	<i>24 hours</i>

S/RVs
3.4.2

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.2 Safety/Relief Valves (S/RVs)

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departure.

STD DEP T1 2.1-1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY																		
SR 3.4.2.1	<p>Verify the safety function lift setpoints of the required S/RVs are as follows:</p> <table><tr><th><u>Number of Setpoint</u></th><th><u>S/RVs</u></th><th><u>(MPaG)</u></th></tr><tr><td></td><td>2</td><td>7.92 ± 0.0792 <u>8.00± 0.24</u></td></tr><tr><td></td><td>4</td><td>7.99 ± 0.0799 <u>8.07± 0.24</u></td></tr><tr><td></td><td>4</td><td>8.06 ± 0.0806 <u>8.14± 0.24</u></td></tr><tr><td></td><td>4</td><td>8.13 ± 0.0813 <u>8.20± 0.25</u></td></tr><tr><td></td><td>4</td><td>8.19 ± 0.0819 <u>8.27± 0.25</u></td></tr></table> <p>Following testing, lift settings shall be within ± 1%.</p>	<u>Number of Setpoint</u>	<u>S/RVs</u>	<u>(MPaG)</u>		2	7.92 ± 0.0792 <u>8.00± 0.24</u>		4	7.99 ± 0.0799 <u>8.07± 0.24</u>		4	8.06 ± 0.0806 <u>8.14± 0.24</u>		4	8.13 ± 0.0813 <u>8.20± 0.25</u>		4	8.19 ± 0.0819 <u>8.27± 0.25</u>	In accordance with the Inservice Testing Program
<u>Number of Setpoint</u>	<u>S/RVs</u>	<u>(MPaG)</u>																		
	2	7.92 ± 0.0792 <u>8.00± 0.24</u>																		
	4	7.99 ± 0.0799 <u>8.07± 0.24</u>																		
	4	8.06 ± 0.0806 <u>8.14± 0.24</u>																		
	4	8.13 ± 0.0813 <u>8.20± 0.25</u>																		
	4	8.19 ± 0.0819 <u>8.27± 0.25</u>																		

RCS Operational LEAKAGE
3.4.3

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.3 RCS Operational LEAKAGE

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departure.

STD DEP 7.3-12

LCO 3.4.3

RCS operational LEAKAGE shall be limited to:

- a. *No pressure boundary LEAKAGE;*
- b. *≤ 3.785 19 L/min unidentified LEAKAGE; ~~and~~*
- c. *≤ 98.4 114 L/min total LEAKAGE averaged over the previous 24 hour period; and*
- d. *≤ 8 L/min increase in unidentified LEAKAGE within previous 4 hour period in MODE 1.*

RCS Operational LEAKAGE
3.4.3

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>	4 hours
<p><u>B. Unidentified LEAKAGE increase not within limit.</u></p>	<p><u>B.1 Reduce LEAKAGE to within limits.</u></p> <p><u>OR</u></p> <p><u>B.2 Verify source of unidentified LEAKAGE increase is not service sensitive type 304 or type 316 austenitic stainless steel.</u></p>	4 hours
<p>BC. Required Action and associated Completion Time of Condition A <u>or</u> B not met.</p> <p><u>OR</u></p> <p>Pressure boundary LEAKAGE exists.</p>	<p>BC.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>BC.2 Be in MODE 4.</p>	<p>12 hours</p> <p>36 hours</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.4.3.1 Verify RCS unidentified, and total LEAKAGE <u>and</u> <u>unidentified LEAKAGE increase</u> are within limits.</p>	8 hours

RCS PIV Leakage
3.4.4

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.4 RCS Pressure Isolation Valve (PIV) Leakage

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

RCS Leakage Detection Instrumentation
3.4.5

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.5 RCS Leakage Detection Instrumentation

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

RCS Specific Activity
3.4.6

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.6 RCS Specific Activity

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

RHR Shutdown Cooling System-Hot Shutdown
3.4.7

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.7 Residual Heat Removal (RHR) Shutdown Cooling System-Hot Shutdown

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

RHR Shutdown Cooling System-Cold Shutdown
3.4.8

3.4 REACTOR COOLANT SYSTEM (RCS)

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

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

RCS Pressure and Temperature (P/T) Limits

3.4.9

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.9 RCS Pressure and Temperature (P/T) Limits

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following site-specific supplements. The site-specific supplements partially address COL License Information Item 16.1.

SR 3.4.9.4	<p style="text-align: center;">-----NOTE-----</p> <p><i>Not required to be performed until 30 minutes after RCS temperature \leq 27 °C in MODE 4.</i></p> <p style="text-align: center;">-----</p> <p><i>Verify reactor vessel flange and head flange temperatures are within the limits specified in the PTLR.</i></p>	30 minutes
SR 3.4.9.5	<p style="text-align: center;">-----NOTE-----</p> <p><i>Not required to be performed until 12 hours after RCS temperature \leq 38 °C in MODE 4.</i></p> <p style="text-align: center;">-----</p> <p><i>Verify reactor vessel flange and head flange temperatures are within the limits specified in the PTLR.</i></p>	12 hours

Reactor Steam Dome Pressure
3.4.10

3.4 REACTOR COOLANT SYSTEM

3.4.10 Reactor Steam Dome Pressure

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.1 ECCS-Operating

The information in this section of the reference ABWR DCD, including all subsections and figures, is incorporated by reference with the following departure and site-specific supplements. The site-specific supplements partially address COL License Information Item 16.1.

STD DEP 8.3-1

The ABWR plant medium voltage electrical system design change was provided in ABWR Licensing Topical Report (LTR) NEDO-33335, "Plant Medium Voltage Electrical System Design," dated May 2007. The information from the markup of ABWR TS pages 3.5-1 and 3.5-2 is incorporated by reference.

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.2 ECCS-Shutdown

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

Primary Containment
3.6.1.1

3.6 CONTAINMENT SYSTEMS

3.6.1.1 Primary Containment

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

Primary Containment Air Locks
3.6.1.2

3.6 CONTAINMENT SYSTEMS

3.6.1.2 Primary Containment Air Locks

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departure.

STD DEP 16.3-69

<p><i>B. One or more primary containment air locks with primary containment air lock interlock mechanism inoperable.</i></p>	<p>-----NOTES-----</p> <p><i>1. Required Actions B.1, B.2, and B.3 are not applicable if both doors in the same air lock are inoperable and Condition C is entered.</i></p> <p><i>2. Entry into and exit from containment is permissible under the control of a dedicated individual.</i></p> <p>-----</p> <p><i>B.1 Verify an OPERABLE door is closed in the affected air lock(s).</i></p> <p><u><i>AND</i></u></p> <p><i>B.2 Lock an OPERABLE door closed in the affected air lock(s).</i></p> <p><u><i>AND</i></u></p> <p><i>B.3 -----NOTE----- Air lock doors in high radiation areas or areas with limited access due to inerting may be verified locked closed by administrative means.</i></p> <p>-----</p> <p><i>Verify an OPERABLE door is locked closed in the affected air lock(s).</i></p>	<p></p> <p><i>1 hour</i></p> <p><i>24 hours</i></p> <p><i>Once per 31 days</i></p>
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PCIVs

3.6.1.3

3.6 CONTAINMENT SYSTEMS

3.6.1.3 Primary Containment Isolation Valves (PCIVs)

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departures and site-specific supplements. The site-specific supplements partially address COL License Information Item 16.1.

STD DEP 6.2-1

STD DEP 16.3-71

STD DEP 16.3-72

ACTIONS

NOTES

STD DEP 16.3-71

1. *Penetration flow paths ~~except for purge valve penetration flow paths~~ may be unisolated intermittently under administrative controls.*
2. *Separate Condition entry is allowed for each penetration flow path.*
3. *Enter applicable Conditions and Required Actions for systems made inoperable by PCIVs.*
4. *Enter applicable Conditions and Required Actions of LCO 3.6.1.1, "Primary Containment," when PCIV leakage results in exceeding overall containment leakage rate acceptance criteria.*

<i>CONDITION</i>	<i>REQUIRED ACTION</i>	<i>COMPLETION TIME</i>
<p>A. -----NOTE----- Only applicable to penetration flow paths with two PCIVs. -----</p> <p>STD DEP 16.3-71</p> <p>One or more penetration flow paths with one PCIV inoperable except for purge valve leakage, <u>main steam line isolation valve leakage, or hydrostatically tested line leakage, not within limit.</u></p>	<p>A.1 Isolate the affected penetration flow path by use of at least one closed and de- activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.</p> <p><u>AND</u></p>	<p>4 hours except for main steam line</p> <p><u>AND</u></p> <p>8 hours for main steam line</p>

PCIVs
3.6.1.3

ACTIONS

<i>CONDITION</i>	<i>REQUIRED ACTION</i>	<i>COMPLETION TIME</i>
<i>A. (continued)</i>	<p><i>A.2</i></p> <p>-----NOTE----- <i>Valves and blind flanges in high radiation areas may be verified by use of administrative means.</i> -----</p> <p><i>Verify the affected penetration flow path is isolated.</i></p>	<p><i>Once per 31 days for isolation devices outside primary containment, drywell, and steam tunnel</i></p> <p><u><i>AND</i></u></p> <p><i>Prior to entering MODE 2 or 3 from MODE 4, if primary containment was de-inerted while in MODE 4, if not performed within the previous 92 days, for isolation devices inside primary containment</i></p>

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
STD DEP 16.3-71 D. One or more penetration flow paths with one or more containment purge valves not within purge valve leakage limits.	<p>D.1 Isolate the affected penetration flow path by use of at least one [closed and de-activated automatic valve, closed manual valve, or blind flange].</p> <p><u>AND</u></p> <p>D.2 NOTE Valves and blind flanges in high radiation areas may be verified by use of administrative means.</p> <p>Verify the affected penetration flow path is isolated.</p> <p><u>AND</u></p> <p>D.3 Perform SR 3.6.1.3.7 for the resilient seal purge valves closed to comply with Required Action D.1.</p>	<p>24 hours</p> <p>Once per 31 days for isolation devices outside containment</p> <p><u>AND</u></p> <p>Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment</p> <p>Once per [92] days</p>

ACTIONS (continued)

<i>CONDITION</i>	<i>REQUIRED ACTION</i>	<i>COMPLETION TIME</i>
<p>STD DEP 16.3-71</p> <p>D. <u>Purge valve leakage rate, main steam isolation valve leakage, or hydrostatically tested line leakage not within limit.</u></p>	<p>D.1 <u>Restore leakage to within limit.</u></p>	<p>[4 hours except for <u>main steam line isolation valve leakage</u></p> <p><u>AND</u></p> <p><u>8 hours for main steam line isolation valve leakage]</u></p>
<p>E. <i>Required Action and associated Completion Time of Condition A, B, or C, or D not met in MODE 1, 2, or 3.</i></p>	<p>E.1 <i>Be in MODE 3.</i></p> <p><u>AND</u></p> <p>E.2 <i>Be in MODE 4.</i></p>	<p>12 hours</p> <p>36 hours</p>
<p>F. <i>Required Action and associated Completion Time of Condition A, B, <u>or</u> C, or D not met for PCIV(s) required to be OPERABLE during movement of irradiated fuel assemblies in the secondary containment.</i></p>	<p>F.1 -----NOTE----- LCO 3.0.3 is not applicable. -----</p> <p><i>Suspend movement of irradiated fuel assemblies in the secondary containment.</i></p>	<p><i>Immediately</i></p>

ACTIONS (continued)

<p>STD DEP 16.3-71</p> <p>G. Required Action and associated Completion Time of Condition A, B, <u>or</u> C, or D not met for PCIV(s) required to be OPERABLE during CORE ALTERATIONS.</p>	<p>G.1 Suspend CORE ALTERATIONS.</p>	<p>Immediately</p>
<p>H. Required Action and associated Completion Time of Condition A, B, <u>or</u> C, or D not met for PCIV(s) required to be OPERABLE during MODE 4 or 5 or during operations with a potential for draining the reactor vessel (OPDRVs).</p>	<p>H.1 Initiate action to suspend OPDRVs.</p> <p><u>OR</u></p> <p>H.2 Initiate action to restore valve(s) to OPERABLE status.</p>	<p>Immediately</p> <p>Immediately</p>

PCIVs
3.6.1.3

STD DEP 16.3-71

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.6.1.3.1 NOTE</p> <p>Only required to be met in MODES 1, 2, and 3.</p> <p>Verify each 550 mm primary containment purge valve is sealed closed except for one purge valve in a penetration flow path while in Condition D of this LCO.</p>	<p>31 days</p>
<p>STD DEP 6.2-1</p> <p>SR 3.6.1.3.21 -----NOTES-----</p> <ol style="list-style-type: none"> Only required to be met in MODES 1, 2, and 3. Not required to be met when the 550500 mm primary containment purge valves are open for inerting, de-inerting, pressure control, ALARA or air quality considerations for personnel entry, or Surveillances that require the valves to be open. <p>Verify each 550500 mm primary containment purge valve is closed.</p>	<p>31 days</p>
<p>SR 3.6.1.3.32 -----NOTES-----</p> <ol style="list-style-type: none"> Valves and blind flanges in high radiation areas may be verified by use of administrative means. Not required to be met for PCIVs that are open under administrative controls. <p>Verify each primary containment isolation manual valve and blind flange that is located outside primary containment and is required to be closed during accident conditions is closed.</p>	<p>31 days</p>

STD DEP 16.3-71

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.43	<p>-----NOTES-----</p> <ol style="list-style-type: none"> Valves and blind flanges in high radiation areas may be verified by use of administrative means. Not required to be met for PCIVs that are open under administrative controls. <p>-----</p> <p>Verify each primary containment isolation manual valve and blind flange that is located inside primary containment and is required to be closed during accident conditions is closed.</p>	<p>Prior to entering MODE 2 or 3 from MODE 4, if primary containment was de-inerted while in MODE 4, if not performed within the previous 92 days</p>
SR 3.6.1.3.54	Verify continuity of the automatic traversing incore prob (ATIP) shear isolation valve explosive charge.	31 days
SR 3.6.1.3.65	Verify the isolation time of each power operated and each automatic PCIV, except MSIVs, is within limits.	In accordance with the Inservice Testing Program
SR 3.6.1.3.76	<p>-----NOTES-----</p> <ol style="list-style-type: none"> Only required to be met in MODES 1, 2, and 3. Results shall be evaluated against acceptance criteria of SR 3.6.1.1.1 in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions. <p>-----</p> <p>Perform leakage rate testing for each primary containment purge valve with resilient seals.</p>	<p>184 days</p> <p><u>AND</u></p> <p>Once within 92 days after opening the valve</p>

PCIVs
3.6.1.3

SURVEILLANCE REQUIREMENTS (continued)

<i>SURVEILLANCE</i>		<i>FREQUENCY</i>
<i>SR 3.6.1.3.87</i>	<i>Verify the isolation time (i.e., total closure time exclusive of electrical delays) of each MSIV is ≥ 3 seconds and ≤ 4.5 seconds.</i>	<i>3 months</i>
<i>SR 3.6.1.3.98</i>	<i>Verify each automatic PCIV actuates to the isolation position on an actual or simulated isolation signal.</i>	<i>18 months</i>
<i>SR 3.6.1.3.409</i>	<i>Verify each reactor instrumentation line EFCV actuates on a simulated instrument line break to restrict flow to $\leq 1.05 \text{ cm}^3/\text{s}$.</i>	<i>18 months</i>
<i>SR 3.6.1.3.410</i>	<i>Remove and test the explosive squib from each shear isolation valve of the ATIP System.</i>	<i>18 months on a STAGGERED TEST BASIS</i>
<i>SR 3.6.1.3.4211</i>	<p>-----NOTE-----</p> <ol style="list-style-type: none"> <i>Only required to be met in MODES 1, 2, and 3.</i> <i>Results shall be evaluated against acceptance criteria of SR 3.6.1.1.1 in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions.</i> <p>-----</p> <p><i>Verify the combined leakage rate of $0.277 \text{ cm}^3/\text{hr}$ times the total number of PCIVs through hydrostatically tested lines that penetrate the primary containment is not exceeded when these isolation valves are tested at $\geq 0.294 \text{ MPaG}$.</i></p>	<i>18 months</i>

SURVEILLANCE REQUIREMENTS (continued)

<i>SURVEILLANCE</i>	<i>FREQUENCY</i>
<p>STD DEP 16.3-72 SR 3.6.1.3.12</p> <p>-----<i>NOTE</i>----- Results shall be evaluated against acceptance criteria of SR 3.6.1.1.1 in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions.</p> <p>Verify leakage rate through each MSIV is $\leq 1 \text{ m}^3/\text{h}$ when tested at $\geq 0.170 \text{ MPaG}$.</p>	<p>-----<i>NOTE</i>----- SR 3.0.2 is not applicable</p> <p>In accordance with 10 CFR 50, Appendix J, as modified by approved exemptions</p>
<p>SR 3.6.1.3.13</p> <p>-----<i>NOTE</i>----- Only required to be met in MODES 1, 2, and 3.</p> <p>STD DEP 6.2-1</p> <p>Verify each 550500 mm primary containment purge valve is blocked to restrict the valve from opening > [50] %.</p>	<p>18 months</p>

Drywell Pressure
3.6.1.4

3.6 CONTAINMENT SYSTEMS

3.6.1.4 Drywell Pressure

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

Drywell Air Temperature
3.6.1.5

3.6 CONTAINMENT SYSTEMS

3.6.1.5 Drywell Air Temperature

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

Wetwell-to-Drywell Vacuum Breakers
3.6.1.6

3.6 CONTAINMENT SYSTEMS

3.6.1.6 Wetwell-to-Drywell Vacuum Breakers

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departure.

STD DEP 6.2-2

<p>SR 3.6.1.6.3 <i>Verify each required vacuum breaker fully opens at $\leq \underline{3.43-3.45}$ kPaD.</i></p>	<p><i>18 months</i></p>
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Suppression Pool Water Level
3.6.2.2

3.6 CONTAINMENT SYSTEMS

3.6.2.2 Suppression Pool Water Level

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

RHR Suppression Pool Cooling
3.6.2.3

3.6 CONTAINMENT SYSTEMS

3.6.2.3 Residual Heat Removal (RHR) Suppression Pool Cooling

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

RHR Containment Spray
3.6.2.4

3.6 CONTAINMENT SYSTEMS

3.6.2.4 Residual Heat Removal (RHR) Containment Spray

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departure.

STD DEP 6.2-2

SURVEILLANCE REQUIREMENTS

<i>SURVEILLANCE</i>		<i>FREQUENCY</i>
<i>SR 3.6.2.4.2</i>	<i>Verify each associated (i.e., in subsystems B & C) RHR pump develops a flow rate $\geq 114 \text{ m}^3/\text{h}$ and $< 160 \text{ m}^3/\text{h}$ through the wetwell spray sparger.</i>	<i>92 days</i>

Primary Containment Hydrogen Recombiners
3.6.3.1

3.6 CONTAINMENT SYSTEMS

3.6.3.1 Primary Containment Hydrogen Recombiners

The information in this section of the reference ABWR DCD, including all subsections and figures, is incorporated by reference with the following departure.

STD DEP T1 2.14-1

The ABWR hydrogen recombiner elimination evaluation was provided in ABWR Licensing Topical Report (LTR) NEDO-33330P “Hydrogen Recombiner Requirements Elimination,” dated May 2007. The information from pages C-112 and C-113 is incorporated by reference.

Primary Containment Oxygen Concentration
3.6.3.2

3.6 CONTAINMENT SYSTEMS

3.6.3.2 Primary Containment Oxygen Concentration

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

Secondary Containment
3.6.4.1

3.6 CONTAINMENT SYSTEMS

3.6.4.1 Secondary Containment

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departure.

STD DEP 16.3-29

<p>SR 3.6.4.1.4 <i>Verify each standby gas treatment (SGT) subsystem will draw down the secondary containment to ≥ 6.4 mm water gauge vacuum in \leq 120 seconds <u>20 minutes</u>.</i></p>	<p><i>18 months on a STAGGERED TEST BASIS</i></p>
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SCIVs
3.6.4.2

3.6 CONTAINMENT SYSTEMS

3.6.4.2 Secondary Containment Isolation valves (SCIVs)

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

SGT System
3.6.4.3

3.6 CONTAINMENT SYSTEMS

3.6.4.3 Standby Gas Treatment (SGT) System

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

RCW/RSW System and UHS-Operating 3.7.1

3.7 PLANT SYSTEMS

3.7.1 Reactor Building Cooling Water (RCW) System, Reactor Service Water (RSW) System and Ultimate Heat Sink-Operating

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departure and supplements. The site-specific supplements partially address COL License Information Item 16.1.

STD DEP 16.3-16

ACTIONS

[illegible]

RCW/RSW System and UHS-Operating 3.7.1

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Condition A exists in two or more RCW/RSW or UHS [spray network] <u>cooling tower</u> divisions.	C.1 Restore one inoperable RCW/RSW or UHS [spray networks] <u>cooling tower</u> division to OPERABLE status. STD DEP 16.3-16 <u>AND</u>	7 days
	C.2 Restore two inoperable RCW/RSW or UHS [spray network] divisions to OPERABLE status.	14 days
D. Required Action and associated Completion Time of Condition A, B or C not met. <u>OR</u> Two or more RCW/RSW divisions inoperable for reasons other than Condition C. <u>OR</u> UHS inoperable. <u>OR</u> Two or more UHS [spray network] <u>cooling tower</u> divisions inoperable for reasons other than Condition C.	D.1 Be in MODE 3. <u>AND</u> D.2 Be in MODE 4.	12 hours 36 hours

RCW/RSW System and UHS-Operating
3.7.1SURVEILLANCE REQUIREMENTS

<i>SURVEILLANCE</i>		<i>FREQUENCY</i>
SR 3.7.1.1	Verify the water level of each the UHS [spray pond] basin is \geq [] 13.56 m (MSL).	24 hours
SR 3.7.1.2	Verify the water level in each RSW pump well of the intake structure UHS basin is \geq [] m.	24 hours
SR 3.7.1.3	Verify the RSW water temperature at the inlet to the RCW/RSW heat exchangers is \leq [33.3] °C.	24 hours
SR 3.7.1.4	Operate each cooling tower cell fan for \geq 15 minutes.	31 days
SR 3.7.1.45	<p>-----NOTE----- Isolation of flow to individual components does not render RCW/RSW System inoperable. -----</p> <p>Verify each RCW/RSW division and associated UHS [spray network] cooling tower division manual, power operated, and automatic valve in the flow path servicing safety related systems or components, that is not locked, sealed, or otherwise secured in position, is in the correct position.</p>	31 days

RCW/RSW System and UHS-Operating
3.7.1*SURVEILLANCE REQUIREMENTS(continued)*

<i>SURVEILLANCE</i>		<i>FREQUENCY</i>
SR 3.7.1.56	Verify each RCW/RSW division and associated UHS [spray network <u>cooling tower</u>] division actuate on an actual or simulated initiation signal.	18 months

RCW/RSW System and UHS-Shutdown
3.7.2

3.7 PLANT SYSTEMS

3.7.2 Reactor Building Cooling Water (RCW) System, Reactor Service Water (RSW) System and Ultimate Heat Sink-Shutdown

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departures and site-specific supplement. The site-specific supplement partially addresses COL License Information Item 16.1.

STD DEP 16.3-16

STD DEP 16.3-46

LCO 3.7.2 Three RCW/RSW divisions and UHS shall be OPERABLE.

-----NOTE-----
One RCW/RSW division may be inoperable in MODE 5, and after 30 hours from initial entry into MODE 4 from MODE 3.

STD DEP 16.3-46

APPLICABILITY: *MODE 4,
MODE 5 ~~except~~ with irradiated fuel in the reactor pressure vessel (RPV) ~~the~~
~~reactor cavity to dryer/separator storage pool gate removed~~ and water level
~~≥~~ < 7.0 m over the top of the reactor pressure vessel flange.*

RCW/RSW System and UHS-Shutdown
3.7.2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RCW pump and/or one RSW pump and/or one RCW/RSW heat exchanger and/or one spray network cooling tower cell in the UHS in one <u>required</u> division inoperable.	A.1 Restore pump(s) and/or heat exchanger and/or UHS spray network cooling tower cell to OPERABLE status.	14 days
B. Condition A exists in two or more <u>required</u> RCW/RSW or UHS spray network cooling tower divisions.	<p>B.1 Restore one inoperable RCW/RSW or UHS spray network cooling tower division to OPERABLE status.</p> <p>STD DEP 16.3-16</p> <p><u>AND</u></p> <p>B.2 Restore two inoperable RCW/RSW or UHS spray network divisions to OPERABLE status.</p>	<p>7 days</p> <p>14 days</p>

RCW/RSW System and UHS-Shutdown
3.7.2

ACTIONS (continued)

<i>CONDITION</i>	<i>REQUIRED ACTION</i>	<i>COMPLETION TIME</i>
<p>C. One or more required RCW/RSW or UHS spray network cooling tower divisions inoperable for reasons other than Condition A or B.</p> <p><u>OR</u></p> <p>UHS inoperable.</p> <p><u>OR</u></p> <p>Required Action and associated Completion Time of Condition A or B not met.</p>	<p>C.1 Enter applicable Conditions and Required Actions of LCO 3.8.11, "AC Sources – Shutdown (Low Water Level)" for diesel generator(s) made inoperable by RCW/RSW.</p> <p><u>AND</u></p> <p>C.2 Enter applicable Conditions and Required Actions of LCO 3.4.8, "Residual Heat Removal (RHR) – MODE 4," or LCO 3.9.8, "RHR – Low Water Level", for RHR shutdown cooling made inoperable by RCW/RSW.</p>	<p>Immediately</p> <p>Immediately</p>

RCW/RSW System and UHS-Shutdown
3.7.2SURVEILLANCE REQUIREMENTS

<i>SURVEILLANCE</i>		<i>FREQUENCY</i>
SR 3.7.2.1	Verify the water level of each the UHS [spray pond] basin is \geq 13.56 m (MSL).	24 hours
SR 3.7.2.2	Verify the water level in each RSW pump well of the intake structure UHS basin is \geq [] m.	24 hours
SR 3.7.2.3	Verify the RSW water temperature at the inlet to the RCW/RSW heat exchangers is \leq [33.3] °C.	24 hours
SR 3.7.2.4	Operate each cooling tower cell fan for \geq 15 minutes.	31 days
SR 3.7.2.45	<p>-----NOTE-----</p> <p>Isolation of flow to individual components does not render RCW/RSW System inoperable.</p> <p>-----</p> <p>Verify each RCW/RSW division and associated UHS [spray network] cooling tower division manual, power operated, and automatic valve in the flow path servicing safety related systems or components, that is not locked, sealed, or otherwise secured in position, is in the correct position.</p>	31 days
SR 3.7.2.56	Verify each RCW/RSW division and associated UHS [spray network-cooling tower] division actuate on an actual or simulated initiation signal.	18 months

RCW/RSW System and UHS- Refueling
3.7.3

3.7 PLANT SYSTEMS

3.7.3 Reactor Building Cooling Water (RCW) System, Reactor Service Water (RSW) System and Ultimate Heat Sink-Refueling

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departures and site-specific supplement. The site-specific supplement partially addresses COL License Information Item 16.1.

STD DEP 16.3-46

LCO 3.7.3 One RCW/RSW division and UHS shall be OPERABLE.

*APPLICABILITY: MODE 5 with ~~the reactor cavity to dryer/separator storage pool gate removed~~
irradiated fuel in the reactor pressure vessel and water level ≥ 7.0 m over the
top of the reactor pressure vessel flange.*

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. No RCW/RSW division OPERABLE.</p> <p><u>OR</u></p> <p>UHS inoperable.</p> <p><u>OR</u></p> <p>Associated divisional UHS [spray networks] <u>cooling tower</u> inoperable.</p>	<p>A.1 Enter applicable Conditions and Required Actions of LCO 3.8.2, "AC Sources-Refueling" for the diesel generator made inoperable by RCW/RSW.</p> <p><u>AND</u></p> <p>A.2 Enter applicable Conditions and Required Actions of LCO 3.9.7, "RHR-High Water Level", for RHR-Shutdown Cooling made inoperable by RCW/RSW.</p>	<p>Immediately</p> <p>Immediately</p>

RCW/RSW System and UHS- Refueling
3.7.3SURVEILLANCE REQUIREMENTS

<i>SURVEILLANCE</i>		<i>FREQUENCY</i>
SR 3.7.3.1	Verify the water level of each <u>the</u> UHS [spray pond] <u>basin</u> is \geq 13.56 <u>13.56</u> m (MSL) .	24 hours
SR 3.7.3.2	Verify the water level in each RSW pump well of the intake structure <u>UHS basin</u> is \geq [] m.	24 hours
SR 3.7.3.3	Verify the RSW water temperature at the inlet to the RCW/RSW heat exchangers is \leq [33.3] °C.	24 hours
SR 3.7.3.4	Operate each cooling tower cell fan for \geq 15 minutes.	<u>31 days</u>
SR 3.7.3.45	<p>-----NOTE-----</p> <p>Isolation of flow to individual components does not render RCW/RSW System inoperable.</p> <p>-----</p> <p>Verify <u>each</u> RCW/RSW division and associated UHS [spray network] <u>cooling tower</u> division manual, power operated, and automatic valve in the flow path servicing safety related systems or components, that is not locked, sealed, or otherwise secured in position is in the correct position.</p>	31 days
SR 3.7.3.56	Verify each RCW/RSW division and associated UHS [spray network-cooling tower] division actuate on an actual or simulated initiation signal.	18 months

CRHA EF System
3.7.4

3.7 PLANT SYSTEMS

3.7.4 Control Room Habitability Area (CRHA)-Emergency Filtration (EF) System

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departure.

STD DEP 16.3-47

SURVEILLANCE REQUIREMENTS(continued)

<i>SURVEILLANCE</i>		<i>FREQUENCY</i>
<i>SR 3.7.4.4</i>	<i>Verify each EF division can maintain a positive pressure of ≥ 3.2 mm water gauge relative to the atmosphere during the isolation mode of operation at a flow rate of $\leq \underline{360-3400}$ m³/h.</i>	<i>18 months on a STAGGERED TEST BASIS</i>

Control Room AC System
3.7.5

3.7 PLANT SYSTEMS

3.7.5 Control Room Habitability Area (CRHA) – Air Conditioning (AC) System

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

Main Condenser Offgas
3.7.6

3.7 PLANT SYSTEMS

3.7.6 Main Condenser Offgas

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

Main Turbine Bypass System
3.7.7

3.7 PLANT SYSTEMS

3.7.7 Main Turbine Bypass System

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

Fuel Pool Water Level
3.7.8

3.7 PLANT SYSTEMS

3.7.8 Fuel Pool Water Level

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources-Operating

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departures.

STD DEP 8.3-1

STD DEP 16.3-49

STD DEP 8.3-1

The ABWR plant medium voltage electrical system design change was provided in ABWR Licensing Topical Report (LTR) NEDO-33335 "Plant Medium Voltage Electrical System Design," Rev. 0, dated May 2007. LTR pages 3.8-1, 2, 4, 6-15, 17 and 18 are incorporated by reference.

STD DEP 16.3-49

*Table 3.8.1-1 (page 1 of 1)
Diesel Generator Test Schedule*

- (b) *This test frequency shall be maintained until seven consecutive failure free starts from standby conditions and load and run tests have been performed. ~~This is consistent with Regulatory Position [], of Regulatory Guide 1.9, Revision 3.~~ If, subsequent to the 7 failure free tests, 1 or more additional failures occur such that there are again 4 or more failures in the last 25 tests, the testing interval shall again be reduced as noted above and maintained until 7 consecutive failure free tests have been performed.*

3.8 ELECTRICAL POWER SYSTEMS

3.8.2 AC Sources-Refueling

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departure.

STD DEP 16.3-41

ACTIONS

<i>CONDITION</i>	<i>REQUIRED ACTION</i>	<i>COMPLETION TIME</i>
<i>A. Required offsite circuit inoperable.</i>	<p>-----NOTE----- Enter applicable Condition and Required Actions of LCO 3.8.10, with one required division de-energized as a result of Condition BA<u>A</u>. -----</p>	

Diesel Fuel Oil, Lube Oil, and Starting Air
3.8.3

3.8 ELECTRICAL POWER SYSTEMS

3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departure.

STD DEP 16.3-51

ACTIONS

<i>CONDITION</i>	<i>REQUIRED ACTION</i>	<i>COMPLETION TIME</i>
<i>E. One or more DGs with <u>pressure in at least one starting air receiver</u> pressure < [] kPaG and ≥ [] kPaG.</i>	<i>E.1 Restore starting air receiver pressure to ≥ [] kPaG.</i>	<i>48 hours</i>

3.8 ELECTRICAL POWER SYSTEMS

3.8.4 DC Sources-Operating

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departure.

STD DEP 8.3-1

The ABWR plant medium voltage electrical system design change was provided in ABWR Licensing Topical Report (LTR) NEDO-33335 "Plant Medium Voltage Electrical System Design," Rev. 0, dated May 2007. LTR page 3.8-27 is incorporated by reference.

DC Sources-Shutdown
3.8.5

3.8 ELECTRICAL POWER SYSTEMS

3.8.5 DC Sources-Shutdown

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

Battery Cell Parameters
3.8.6

3.8 ELECTRICAL POWER SYSTEMS

3.8.6 Battery Cell Parameters

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departure.

STD DEP 16.3-58

<i>CONDITION</i>	<i>REQUIRED ACTION</i>	<i>COMPLETION TIME</i>
<i>A. One or more batteries with one or more battery cell parameters not within <u>Table 3.8.6-1 Category A or B</u> limits.</i>	<i>A.1 Verify pilot cells electrolyte level and float voltage meet Table 3.8.6-1 Category C limits.</i>	<i>1 hour</i>

Inverters-Operating
3.8.7

3.8 ELECTRICAL POWER SYSTEMS

3.8.7 Inverters-Operating

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

Inverters-Shutdown
3.8.8

3.8 ELECTRICAL POWER SYSTEMS

3.8.8 Inverters-Shutdown

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

3.8 ELECTRICAL POWER SYSTEMS

3.8.9 Distribution Systems - Operating

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departure.

STD DEP 8.3-1

The ABWR plant medium voltage electrical system design change was provided in ABWR Licensing Topical Report (LTR) NEDO-33335 "Plant Medium Voltage Electrical System Design," Rev. 0, dated May 2007. LTR pages 3.8-42 and 44 are incorporated by reference.

Distribution Systems - Shutdown
3.8.10

3.8 ELECTRICAL POWER SYSTEMS

3.8.10 Distribution Systems - Shutdown

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

AC Sources-Shutdown (Low Water Level)
3.8.11

3.8 ELECTRICAL POWER SYSTEMS

3.8.11 AC Sources-Shutdown (Low Water Level)

The information in this section of the reference ABWR DCD, including all subsections and figures, is incorporated by reference with the following departure.

STD DEP 8.3-1

The ABWR plant medium voltage electrical system design change was provided in ABWR Licensing Topical Report (LTR) NEDO-33335 "Plant Medium Voltage Electrical System Design," Rev. 0, dated May 2007. LTR page 3.8-50 is incorporated by reference.

Refueling Equipment Interlocks
3.9.1

3.9 REFUELING OPERATIONS

3.9.1 Refueling Equipment Interlocks

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departure.

STD DEP 16.3-25

LCO 3.9.1 The refueling equipment interlocks associated with the reactor mode switch in the refuel position shall be OPERABLE.

APPLICABILITY: During in-vessel fuel movement with equipment associated with the interlocks when the reactor mode switch is in the refuel position.

Refuel Position Rod-Out Interlock
3.9.2

3.9 REFUELING OPERATIONS

3.9.2 Refuel Position Rod-Out Interlock

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

Control Rod Position
3.9.3

3.9 REFUELING OPERATIONS

3.9.3 Control Rod Position

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

Control Rod Position Indication
3.9.4

3.9 REFUELING OPERATIONS

3.9.4 Control Rod Position Indication

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

Control Rod OPERABILITY
3.9.5

3.9 REFUELING OPERATIONS

3.9.5 Control Rod OPERABILITY

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departure.

STD DEP 16.3-15

SURVEILLANCE REQUIREMENTS

<i>SURVEILLANCE</i>		<i>FREQUENCY</i>
<i>SR 3.9.5.1</i>	<i>Insert each withdrawn control rod at least one step.</i>	<i>7 days</i>
<i>SR 3.9.5.2</i>	<i>Verify each withdrawn control rod scram accumulator pressure is ≥ 40.49 <u>12.75</u> MPaG.</i>	<i>7 days</i>

RPV Water Level
3.9.6

3.9 REFUELING OPERATIONS

3.9.6 Reactor Pressure Vessel (RPV) Water Level

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

RHR-High Water Level
3.9.7

3.9 REFUELING OPERATIONS

3.9.7 Residual Heat Removal (RHR)-High Water Level

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

RHR - Low Water Level
3.9.8

3.9 REFUELING OPERATIONS

3.9.8 Residual Heat Removal (RHR)-Low Water Level

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

Inservice Leak and Hydrostatic Testing Operation
3.10.1

3.10 SPECIAL OPERATIONS

3.10.1 Inservice Leak and Hydrostatic Testing Operation

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

Reactor Mode Switch Interlock Testing
3.10.2

3.10 SPECIAL OPERATIONS

3.10.2 Reactor Mode Switch Interlock Testing

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

Control Rod Withdrawal – Hot Shutdown
3.10.3

3.10 SPECIAL OPERATIONS

3.10.3 Control Rod Withdrawal – Hot Shutdown

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

Control Rod Withdrawal-Cold Shutdown
3.10.4

3.10 SPECIAL OPERATIONS

3.10.4 Control Rod Withdrawal-Cold Shutdown

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departure.

STD 16.3-19

LCO 3.10.4

The reactor mode switch position specified in Table 1.1-1 for MODE 4 may be changed to include the refuel position, and operation considered not to be in MODE 2, to allow withdrawal of a single control rod or control rod pair, and subsequent removal of the associated control rod drives (CRD) if desired, provided the following requirements are met:

- a. *All other control rods are fully inserted;*
 - b.
 - 1. *LCO 3.9.2, "Refuel Position Rod-Out Interlock," and*
LCO 3.9.4, "Control Rod Position Indication,"
- OR
- 2. *A control rod withdrawal block is inserted; and*
 - c.
 - 1. *LCO 3.3.1.1, "SSLC Sensor Instrumentation," MODE 5 requirements for Functions 1.a, 1.d, 2.a, and 2.d., of Table 3.3.1.1-1,*
LCO 3.3.1.2, "RPS and MSIV Trip Actuation," Functions 1.a, 1.b, 3, and 4; and
LCO 3.9.5, "Control Rod OPERABILITY – Refueling,"

OR

- 2. *All other control rods in a five by five array centered on the control rod or control rod pair being withdrawn are disarmed, and*
LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," MODE 5 requirements, except the single control rod or control rod pair to be withdrawn may be assumed to be the highest worth control rod or control rod pair.

Control Rod Drive (CRD) Removal-Refueling
3.10.5

3.10 SPECIAL OPERATIONS (RCS)

3.10.5 Control Rod Drive (CRD) Removal-Refueling

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departures.

STD DEP 16.3-21

STD DEP 16.3-22

- LCO 3.10.5 The requirements of Functions 1.a, 1.b, 1.d, ~~2.a, 2.d~~ and 12 of LCO 3.3.1.1, "SSLC Sensor Instrumentation"; Functions 1.a, 1.b, 3, and 4 of LCO 3.3.1.2, "RPS and MSIV Actuation", LCO 3.3.8.1, "Electric Power Monitoring"; LCO 3.9.1, "Refueling Equipment Interlocks"; LCO 3.9.2, "Refueling Position Rod-Out Interlock"; LCO 3.9.4, "Control Rod Position Indication"; and LCO 3.9.5, "Control Rod OPERABILITY – Refueling," may be suspended in MODE 5 to allow the removal of a single CRD or CRD pair associated with control rod(s) withdrawn from core cell(s) containing one or more fuel assemblies, provided the following requirements are met:*
- a. All other control rods are fully inserted;*
 - b. All other control rods in a five by five array centered on the control rod being removed are disarmed;*
 - c. A control rod withdrawal block is inserted;*
 - d. LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," MODE 5 requirements, except the single control rod (or pair) to be withdrawn may be assumed to be the highest worth control rod pair; and*
 - e. No other CORE ALTERATIONS are in progress.*

Control Rod Drive (CRD) Removal-Refueling
3.10.5

3.10 SPECIAL OPERATIONS (RCS)

3.10.5 Control Rod Drive (CRD) Removal-Refueling

STD DEP 16.3-22

SURVEILLANCE		FREQUENCY
SR 3.10.5.1	<i>Verify all control rods, other than the control rod(s) withdrawn for the removal of the associated CRD(s), are fully inserted.</i>	24 hours
SR 3.10.5.2	<i>Verify all control rods, other than the control rod(s) withdrawn for the removal of the associated CRD(s), in a five by five array centered on each control rod withdrawn for the removal of the associated CRD, are disarmed.</i>	24 hours

Multiple Control Rod Withdrawal-Refueling
3.10.6

3.10 SPECIAL OPERATIONS

3.10.6 Multiple Control Rod Withdrawal-Refueling

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

Control Rod Testing-Operating
3.10.7

3.10 SPECIAL OPERATIONS

3.10.7 Control Rod Testing-Operating

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departure.

STD DEP 16.3-4

LCO 3.10.7 The requirements of LCO 3.1.6, "Rod Pattern Control," may be suspended ~~and~~ control rods bypassed in the Rod Action and Position Information (RAPI) Subsystem as allowed by SR 3.3.5.1.7, to allow performance of SDM demonstrations, control rod scram time testing, control rod friction testing, and the Startup Test Program, provided LCO 3.3.5.1, "Control Rod Block Instrumentation" for Function 1.b of Table 3.3.5.1-1 is met with the approved control rod sequence or conformance to the approved control rod sequence for the specified test is verified by a second licensed operator or other qualified member of the technical staff.

SURVEILLANCE REQUIREMENTS

<i>SURVEILLANCE</i>		<i>FREQUENCY</i>
<i>SR 3.10.7.1</i>	<p>-----<u>NOTE</u>-----</p> <p><u>Not required to be met if SR 3.10.7.2 is satisfied.</u></p> <p>-----</p> <p><i>Verify movement of control rods is in compliance with the approved control rod sequence for the specified test by a second licensed operator or other qualified member of the technical staff.</i></p>	<i>During control rod movement</i>
<u>SR 3.10.7.2</u>	<p>-----<u>NOTE</u>-----</p> <p><u>Not required to be met if SR 3.10.7.1 is satisfied.</u></p> <p>-----</p> <p><u>Perform the applicable SRs for LCO 3.3.5.1 Function 1.b.</u></p>	<u>According to the applicable SRs</u>

SHUTDOWN MARGIN (SDM) Test-Refueling
3.10.8

3.10 SPECIAL OPERATIONS

3.10.8 SHUTDOWN MARGIN (SDM) Test-Refueling

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

Reactor Internal Pumps (RIPs)-Testing
3.10.9

3.10 SPECIAL OPERATIONS

3.10.9 Reactor Internal Pumps (RIPs)-Testing

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

Training Startups
3.10.10

3.10 SPECIAL OPERATIONS

3.10.10 Training Startups

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

Low Power PHYSICS TEST
3.10.11

3.10 SPECIAL OPERATIONS

3.10.11 Low Power PHYSICS TEST

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with no departures or supplements.

Multiple Control Rod Drive Subassembly Removal-Refueling
3.10.12

3.10 SPECIAL OPERATIONS

3.10.12 Multiple Control Rod Drive Subassembly Removal-Refueling

The information in this section of the reference ABWR DCD, including all subsections, is incorporated by reference with the following departure.

STD DEP 16.3-17

LCO 3.10.12 The requirements of LCO 3.9.3, "Control Rod Position"; LCO 3.9.4, "Control Rod Position Indication"; and LCO 3.9.5, "Control Rod OPERABILITY – Refueling," may be suspended, and the "full in" position indicators may be bypassed for any number of control rods in MODE 5, to allow removal of control rod drive subassemblies with the control rods maintained fully inserted by their applicable anti-rotation devices, provided the following requirements are met:

SURVEILLANCE REQUIREMENTS

<i>SURVEILLANCE</i>		<i>FREQUENCY</i>
<i>SR 3.10.12.1</i>	<i>Verify the <u>applicable</u> anti-rotation devices associated with each CRD subassembly removed removal are in the correct position to maintain the control rod fully inserted.</i>	<i>24 hours</i>