



APR 22 2002

SERIAL: BSEP 02-0086

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2  
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62  
TYPED TECHNICAL SPECIFICATION PAGES SUPPORTING  
REQUEST FOR LICENSE AMENDMENTS - EXTENDED POWER UPRATE  
(NRC TAC NOS. MB2700 AND MB2701)

Ladies and Gentlemen:

On August 9, 2001 (i.e., Serial: BSEP 01-0086), Carolina Power & Light (CP&L) Company requested a revision to the Operating Licenses (OLs) and the Technical Specifications (TSs) for the Brunswick Steam Electric Plant (BSEP), Units 1 and 2. The proposed license amendments increase the maximum power level authorized by Section 2.C.(1) of OLs DPR-71 and DPR-62 from 2558 megawatts thermal (MWt) to 2923 MWt. The purpose of this letter is to provide typed TS pages in support of issuance of the requested amendments. Enclosure 1 provides page change instructions. Enclosures 2 and 3 provide typed TS pages for Unit 1 and 2, respectively.

In addition to the TS changes supporting extended power uprate, an administrative correction has been made on TS page 3.3-9, for each unit. Specifically, a Surveillance Requirement (SR), listed in Table 3.3.1.1-1, for Function 1.b, "Intermediate Range Monitors - Inop," was changed from "SR 3.3.2.2.15" to "SR 3.3.1.1.15." This change is purely administrative; no SR 3.3.2.2.15 exists in the BSEP TSs. As such, the change does not affect CP&L's conclusion that the proposed amendments do not involve a significant hazards consideration.

Please refer any questions regarding this submittal to Mr. Leonard R. Beller, Supervisor - Licensing/Regulatory Programs, at (910) 457-2073.

Sincerely,

Edward T. O'Neil  
Manager - Regulatory Affairs  
Brunswick Steam Electric Plant

MAT/mat

Enclosures:

1. Page Change Instructions
2. Typed Technical Specification Pages - Unit 1
3. Typed Technical Specification Pages - Unit 2

cc:

U. S. Nuclear Regulatory Commission, Region II  
ATTN: Mr. Luis A. Reyes, Regional Administrator  
Sam Nunn Atlanta Federal Center  
61 Forsyth Street, SW, Suite 23T85  
Atlanta, GA 30303-8931

U. S. Nuclear Regulatory Commission  
ATTN: Mr. Theodore A. Easlick, NRC Senior Resident Inspector  
8470 River Road  
Southport, NC 28461-8869

U. S. Nuclear Regulatory Commission (**Electronic Copy Only**)  
ATTN: Ms. Brenda L. Mozafari (Mail Stop OWFN 8G9)  
11555 Rockville Pike  
Rockville, MD 20852-2738

U. S. Nuclear Regulatory Commission  
ATTN: Mr. Mohammed Shuaibi (Mail Stop OWFN 8H4A)  
11555 Rockville Pike  
Rockville, MD 20852-2738

Ms. Jo A. Sanford  
Chair - North Carolina Utilities Commission  
P.O. Box 29510  
Raleigh, NC 27626-0510

Mr. Mel Fry  
Director - Division of Radiation Protection  
North Carolina Department of Environment and Natural Resources  
3825 Barrett Drive  
Raleigh, NC 27609-7221

ENCLOSURE 1

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2  
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62  
TYPED TECHNICAL SPECIFICATION PAGES SUPPORTING  
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(NRC TAC NOS. MB2700 AND MB2701)

**Page Change Instructions**

**Unit 1 Page Change Instructions**

<b>Remove</b>	<b>Insert</b>
1.1-5	1.1-5
2.0-1	2.0-1
3.1-9	3.1-9
3.1-18	3.1-18
3.2-1	3.2-1
3.2-2	3.2-2
3.3-2	3.3-2
3.3-4	3.3-4
3.3-7	3.3-7
3.3-9	3.3-9
3.3-11	3.3-11
3.3-21	3.3-21
3.3-22	3.3-22
3.3-23	3.3-23
3.3-24	3.3-24
3.7-20	3.7-20

**Unit 2 Page Change Instructions**

<b>Remove</b>	<b>Insert</b>
1.1-5	1.1-5
2.0-1	2.0-1
3.1-9	3.1-9
3.1-18	3.1-18
3.2-1	3.2-1
3.2-2	3.2-2
3.3-2	3.3-2
3.3-4	3.3-4
3.3-7	3.3-7
3.3-9	3.3-9
3.3-11	3.3-11
3.3-21	3.3-21
3.3-22	3.3-22
3.3-23	3.3-23
3.3-24	3.3-24
3.7-20	3.7-20

ENCLOSURE 2

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2  
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62  
TYPED TECHNICAL SPECIFICATION PAGES SUPPORTING  
REQUEST FOR LICENSE AMENDMENTS - EXTENDED POWER UPRATE  
(NRC TAC NOS. MB2700 AND MB2701)

**Typed Technical Specification Pages - Unit 1**

1.1 Definitions (continued)

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OPERABLE—OPERABILITY	A system, subsystem, division, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, division, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).
RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of 2923 MWt.
REACTOR PROTECTION SYSTEM (RPS) RESPONSE TIME	The RPS RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its RPS trip setpoint at the channel sensor until de-energization of the scram pilot valve solenoids. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured.
SHUTDOWN MARGIN (SDM)	SDM shall be the amount of reactivity by which the reactor is subcritical or would be subcritical assuming that: <ol style="list-style-type: none"><li>The reactor is xenon free;</li><li>The moderator temperature is 68°F; and</li><li>All control rods are fully inserted except for the single control rod of highest reactivity worth, which is assumed to be fully withdrawn.</li></ol> With control rods not capable of being fully inserted, the reactivity worth of these control rods must be accounted for in the determination of SDM.

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(continued)

## 2.0 SAFETY LIMITS (SLs)

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### 2.1 SLs

#### 2.1.1 Reactor Core SLs

2.1.1.1 With the reactor steam dome pressure < 785 psig or core flow < 10% rated core flow:

THERMAL POWER shall be  $\leq$  23% RTP. |

2.1.1.2 With the reactor steam dome pressure  $\geq$  785 psig and core flow  $\geq$  10% rated core flow:

MCPR shall be  $\geq$  1.12 for two recirculation loop operation or  $\geq$  1.14 for single recirculation loop operation.

2.1.1.3 Reactor vessel water level shall be greater than the top of active irradiated fuel.

#### 2.1.2 Reactor Coolant System Pressure SL

Reactor steam dome pressure shall be  $\leq$  1325 psig.

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### 2.2 SL Violations

With any SL violation, the following actions shall be completed within 2 hours:

2.2.1 Restore compliance with all SLs; and

2.2.2 Insert all insertable control rods.

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3.1 REACTIVITY CONTROL SYSTEMS

3.1.6 Rod Pattern Control

LCO 3.1.6 OPERABLE control rods shall comply with the requirements of the banked position withdrawal sequence (BPWS).

APPLICABILITY: MODES 1 and 2 with THERMAL POWER  $\leq$  8.75% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One or more OPERABLE control rods not in compliance with BPWS.</p>	<p>A.1 -----NOTE----- Control rod may be bypassed in the rod worth minimizer (RWM) or RWM may be bypassed as allowed by LCO 3.3.2.1, "Control Rod Block Instrumentation." ----- Move associated control rod(s) to correct position.</p>	<p>8 hours</p>
	<p><u>OR</u> A.2 Declare associated control rod(s) inoperable.</p>	<p>8 hours</p>

(continued)

3.2 POWER DISTRIBUTION LIMITS

3.2.1 AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)

LCO 3.2.1 All APLHGRs shall be less than or equal to the limits specified in the COLR.

APPLICABILITY: THERMAL POWER  $\geq$  23% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Any APLHGR not within limits.	A.1 Restore APLHGR(s) to within limits.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to < 23% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.2.1.1 Verify all APLHGRs are less than or equal to the limits specified in the COLR.	Once within 12 hours after $\geq$ 23% RTP  <u>AND</u> 24 hours thereafter

3.2 POWER DISTRIBUTION LIMITS

3.2.2 MINIMUM CRITICAL POWER RATIO (M CPR)

LCO 3.2.2 All M CPRs shall be greater than or equal to the M CPR operating limits specified in the COLR.

APPLICABILITY: THERMAL POWER  $\geq$  23% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Any M CPR not within limits.	A.1 Restore M CPR(s) to within limits.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to < 23% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.2.2.1 Verify all M CPRs are greater than or equal to the limits specified in the COLR.	Once within 12 hours after $\geq$ 23% RTP  <u>AND</u> 24 hours thereafter

(continued)



SURVEILLANCE REQUIREMENTS

- NOTES-----
1. Refer to Table 3.3.1.1-1 to determine which SRs apply for each RPS Function.
  2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains RPS trip capability.
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SURVEILLANCE	FREQUENCY
SR 3.3.1.1.1 (Not used.)	
SR 3.3.1.1.2 Perform CHANNEL CHECK.	24 hours
SR 3.3.1.1.3 -----NOTE----- Not required to be performed until 12 hours after THERMAL POWER $\geq$ 23% RTP. ----- Adjust the average power range monitor (APRM) channels to conform to the calculated power while operating at $\geq$ 23% RTP.	7 days
SR 3.3.1.1.4 -----NOTE----- Not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. ----- Perform CHANNEL FUNCTIONAL TEST.	7 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.3.1.1.16 Verify Turbine Stop Valve—Closure and Turbine Control Valve Fast Closure, Trip Oil Pressure—Low Functions are not bypassed when THERMAL POWER is $\geq$ 26% RTP.	24 months
SR 3.3.1.1.17 -----NOTES----- 1. Neutron detectors are excluded. 2. For Functions 3 and 4, the sensor response time may be assumed to be the design sensor response time. 3. For Function 5, "n" equals 4 channels for the purpose of determining the STAGGERED TEST BASIS Frequency. 4. For Function 2.e, "n" equals 8 channels for the purpose of determining the STAGGERED TEST BASIS Frequency. Testing of APRM and Oscillation Power Range Monitor (OPRM) outputs shall alternate. ----- Verify the RPS RESPONSE TIME is within limits.	24 months on a STAGGERED TEST BASIS
SR 3.3.1.1.18 Adjust recirculation drive flow to conform to reactor core flow.	Once within 7 days after reaching equilibrium conditions following refueling outage

(continued)

Table 3.3.1.1-1 (page 1 of 3)  
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
<b>1. Intermediate Range Monitors</b>					
a. Neutron Flux —High	2	3	G	SR 3.3.1.1.2 SR 3.3.1.1.4 SR 3.3.1.1.5 SR 3.3.1.1.6 SR 3.3.1.1.7 SR 3.3.1.1.13 SR 3.3.1.1.15	≤ 120/125 divisions of full scale
	5(a)	3	H	SR 3.3.1.1.2 SR 3.3.1.1.4 SR 3.3.1.1.5 SR 3.3.1.1.13 SR 3.3.1.1.15	≤ 120/125 divisions of full scale
b. Inop	2	3	G	SR 3.3.1.1.4 SR 3.3.1.1.5 SR 3.3.1.1.15	NA
	5(a)	3	H	SR 3.3.1.1.4 SR 3.3.1.1.5 SR 3.3.1.1.15	NA
<b>2. Average Power Range Monitors</b>					
a. Neutron Flux —High (Setdown)	2	3(c)	G	SR 3.3.1.1.2 SR 3.3.1.1.5 SR 3.3.1.1.7 SR 3.3.1.1.8 SR 3.3.1.1.11 SR 3.3.1.1.13	≤ 22.7% RTP
b. Simulated Thermal Power —High	1	3(c)	F	SR 3.3.1.1.2 SR 3.3.1.1.3 SR 3.3.1.1.5 SR 3.3.1.1.8 SR 3.3.1.1.11 SR 3.3.1.1.13 SR 3.3.1.1.18	≤ 0.55W + 62.6% RTP <sup>(b)</sup> and ≤ 117.1% RTP

(continued)

(a) With any control rod withdrawn from a core cell containing one or more fuel assemblies.

(b) ≤ [0.55 (W - ΔW) + 62.6% RTP] when reset for single loop operation per LCO 3.4.1, "Recirculation Loops Operating." The value of ΔW is defined in plant procedures.

(c) Each APRM channel provides inputs to both trip systems.

Table 3.3.1.1-1 (page 3 of 3)  
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
7. Scram Discharge Volume Water Level —High	1,2	2	G	SR 3.3.1.1.5 SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15	≤ 108 gallons
	5(a)	2	H	SR 3.3.1.1.5 SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15	≤ 108 gallons
8. Turbine Stop Valve —Closure	≥ 26% RTP	4	E	SR 3.3.1.1.5 SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.16 SR 3.3.1.1.17	≤ 10% closed
9. Turbine Control Valve Fast Closure, Control Oil Pressure —Low	≥ 26% RTP	2	E	SR 3.3.1.1.5 SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.16 SR 3.3.1.1.17	≥ 500 psig
10. Reactor Mode Switch — Shutdown Position	1,2	1	G	SR 3.3.1.1.12 SR 3.3.1.1.15	NA
	5(a)	1	H	SR 3.3.1.1.12 SR 3.3.1.1.15	NA
11. Manual Scram	1,2	1	G	SR 3.3.1.1.9 SR 3.3.1.1.15	NA
	5(a)	1	H	SR 3.3.1.1.9 SR 3.3.1.1.15	NA

(a) With any control rod withdrawn from a core cell containing one or more fuel assemblies.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.3.2.1.2 -----NOTE----- Not required to be performed until 1 hour after any control rod is withdrawn at <math>\leq 8.75\%</math> RTP in MODE 2. ----- Perform CHANNEL FUNCTIONAL TEST.</p>	<p>92 days</p>
<p>SR 3.3.2.1.3 -----NOTE----- Not required to be performed until 1 hour after THERMAL POWER is <math>\leq 8.75\%</math> RTP in MODE 1. ----- Perform CHANNEL FUNCTIONAL TEST.</p>	<p>92 days</p>
<p>SR 3.3.2.1.4 Verify the RBM:</p> <ul style="list-style-type: none"> <li>a. Low Power Range—Upscale Function OR Intermediate Power Range—Upscale Function OR High Power Range—Upscale Function is enabled (not bypassed) when APRM Simulated Thermal Power is <math>\geq 29\%</math>.</li> <li>b. Intermediate Power Range—Upscale Function OR High Power Range—Upscale Function is enabled (not bypassed) when APRM Simulated Thermal Power is <math>\geq</math> Intermediate Power Range Setpoint specified in the COLR.</li> <li>c. High Power Range—Upscale Function is enabled (not bypassed) when APRM Simulated Thermal Power is <math>\geq</math> High Power Range Setpoint specified in the COLR.</li> </ul>	<p>24 months</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.2.1.5	Verify the RWM is not bypassed when THERMAL POWER is $\leq$ 8.75% RTP.	24 months
SR 3.3.2.1.6	-----NOTE----- Not required to be performed until 1 hour after reactor mode switch is in the shutdown position. -----  Perform CHANNEL FUNCTIONAL TEST.	24 months
SR 3.3.2.1.7	-----NOTE----- Neutron detectors are excluded. -----  Perform CHANNEL CALIBRATION.	24 months
SR 3.3.2.1.8	Verify control rod sequences input to the RWM are in conformance with BPWS.	Prior to declaring RWM OPERABLE following loading of sequence into RWM

Table 3.3.2.1-1 (page 1 of 1)  
Control Rod Block Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Rod Block Monitor				
a. Low Power Range —Upscale	(a)	2	SR 3.3.2.1.1 SR 3.3.2.1.4 SR 3.3.2.1.7	(h)
b. Intermediate Power Range —Upscale	(b)	2	SR 3.3.2.1.1 SR 3.3.2.1.4 SR 3.3.2.1.7	(h)
c. High Power Range —Upscale	(c),(d)	2	SR 3.3.2.1.1 SR 3.3.2.1.4 SR 3.3.2.1.7	(h)
d. Inop	(d),(e)	2	SR 3.3.2.1.1	NA
2. Rod Worth Minimizer				
	1 <sup>(f)</sup> ,2 <sup>(f)</sup>	1	SR 3.3.2.1.2 SR 3.3.2.1.3 SR 3.3.2.1.5 SR 3.3.2.1.8	NA
3. Reactor Mode Switch —Shutdown Position				
	(g)	2	SR 3.3.2.1.6	NA

- (a) THERMAL POWER is  $\geq$  29% RTP and MCPR less than the limit specified in the COLR except not required to be OPERABLE if the Intermediate Power Range —Upscale Function or High Power Range —Upscale Function is OPERABLE.
- (b) THERMAL POWER is  $\geq$  Intermediate Power Range Setpoint specified in the COLR and MCPR less than the limit specified in the COLR except not required to be OPERABLE if the High Power Range —Upscale Function is OPERABLE.
- (c) THERMAL POWER  $\geq$  High Power Range Setpoint specified in the COLR and  $<$  90% RTP and MCPR less than the limit specified in the COLR.
- (d) THERMAL POWER  $\geq$  90% RTP and MCPR less than the limit specified in the COLR.
- (e) THERMAL POWER  $\geq$  29% and  $<$  90% RTP and MCPR less than the limit specified in the COLR.
- (f) With THERMAL POWER  $\leq$  8.75% RTP.
- (g) Reactor mode switch in the shutdown position.
- (h) Allowable Value specified in the COLR.

3.3 INSTRUMENTATION

3.3.2.2 Feedwater and Main Turbine High Water Level Trip Instrumentation

LC0 3.3.2.2 Three channels of feedwater and main turbine high water level trip instrumentation shall be OPERABLE.

APPLICABILITY: THERMAL POWER  $\geq$  23% RTP.

ACTIONS

-----NOTE-----  
Separate Condition entry is allowed for each channel.  
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CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One feedwater and main turbine high water level trip channel inoperable.	A.1 Place channel in trip.	7 days
B. Two or more feedwater and main turbine high water level trip channels inoperable.	B.1 Restore feedwater and main turbine high water level trip capability.	4 hours
C. Required Action and associated Completion Time not met.	C.1 Reduce THERMAL POWER to < 23% RTP.	4 hours

3.7 PLANT SYSTEMS

3.7.6 The Main Turbine Bypass System

LCO 3.7.6 The Main Turbine Bypass System shall be OPERABLE.

OR

The following limits are made applicable:

- a. LCO 3.2.1, "AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)," limits for an inoperable Main Turbine Bypass System, as specified in the COLR; and
- b. LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," limits for an inoperable Main Turbine Bypass System, as specified in the COLR.

APPLICABILITY: THERMAL POWER  $\geq$  23% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	A.1 Satisfy the requirements of the LCO.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to < 23% RTP.	4 hours

ENCLOSURE 3

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2  
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62  
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**Typed Technical Specification Pages - Unit 2**

1.1 Definitions (continued)

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OPERABLE-OPERABILITY

A system, subsystem, division, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, division, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).

RATED THERMAL POWER (RTP)

RTP shall be a total reactor core heat transfer rate to the reactor coolant of 2923 MWt. |

REACTOR PROTECTION SYSTEM (RPS) RESPONSE TIME

The RPS RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its RPS trip setpoint at the channel sensor until de-energization of the scram pilot valve solenoids. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured.

SHUTDOWN MARGIN (SDM)

SDM shall be the amount of reactivity by which the reactor is subcritical or would be subcritical assuming that:

- a. The reactor is xenon free;
- b. The moderator temperature is 68°F; and
- c. All control rods are fully inserted except for the single control rod of highest reactivity worth, which is assumed to be fully withdrawn.

With control rods not capable of being fully inserted, the reactivity worth of these control rods must be accounted for in the determination of SDM.

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## 2.0 SAFETY LIMITS (SLs)

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### 2.1 SLs

#### 2.1.1 Reactor Core SLs

2.1.1.1 With the reactor steam dome pressure < 785 psig or core flow < 10% rated core flow:

THERMAL POWER shall be  $\leq$  23% RTP. |

2.1.1.2 With the reactor steam dome pressure  $\geq$  785 psig and core flow  $\geq$  10% rated core flow:

MCPR shall be  $\geq$  1.09 for two recirculation loop operation or  $\geq$  1.10 for single recirculation loop operation.

2.1.1.3 Reactor vessel water level shall be greater than the top of active irradiated fuel.

#### 2.1.2 Reactor Coolant System Pressure SL

Reactor steam dome pressure shall be  $\leq$  1325 psig.

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### 2.2 SL Violations

With any SL violation, the following actions shall be completed within 2 hours:

2.2.1 Restore compliance with all SLs; and

2.2.2 Insert all insertable control rods.

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3.1 REACTIVITY CONTROL SYSTEMS

3.1.6 Rod Pattern Control

LCO 3.1.6 OPERABLE control rods shall comply with the requirements of the banked position withdrawal sequence (BPWS).

APPLICABILITY: MODES 1 and 2 with THERMAL POWER  $\leq$  8.75% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One or more OPERABLE control rods not in compliance with BPWS.</p>	<p>A.1 -----NOTE----- Control rod may be bypassed in the rod worth minimizer (RWM) or RWM may be bypassed as allowed by LCO 3.3.2.1, "Control Rod Block Instrumentation." ----- Move associated control rod(s) to correct position.</p>	<p>8 hours</p>
	<p><u>OR</u> A.2 Declare associated control rod(s) inoperable.</p>	<p>8 hours</p>

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3.2 POWER DISTRIBUTION LIMITS

3.2.1 AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)

LCO 3.2.1 All APLHGRs shall be less than or equal to the limits specified in the COLR.

APPLICABILITY: THERMAL POWER  $\geq$  23% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Any APLHGR not within limits.	A.1 Restore APLHGR(s) to within limits.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to < 23% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.2.1.1 Verify all APLHGRs are less than or equal to the limits specified in the COLR.	Once within 12 hours after $\geq$ 23% RTP  <u>AND</u> 24 hours thereafter

3.2 POWER DISTRIBUTION LIMITS

3.2.2 MINIMUM CRITICAL POWER RATIO (MCP)

LCO 3.2.2 All MCPs shall be greater than or equal to the MCP operating limits specified in the COLR.

APPLICABILITY: THERMAL POWER  $\geq$  23% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Any MCP not within limits.	A.1 Restore MCP(s) to within limits.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to < 23% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.2.2.1 Verify all MCPs are greater than or equal to the limits specified in the COLR.	Once within 12 hours after $\geq$ 23% RTP  <u>AND</u> 24 hours thereafter

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. -----NOTE----- Not applicable for Functions 2.a, 2.b, 2.c, 2.d, or 2.f. -----</p> <p>One or more Functions with one or more required channels inoperable in both trip systems.</p>	<p>B.1 Place channel in one trip system in trip.</p> <p>OR</p> <p>B.2 Place one trip system in trip.</p>	<p>6 hours</p> <p>6 hours</p>
<p>C. One or more Functions with RPS trip capability not maintained.</p>	<p>C.1 Restore RPS trip capability.</p>	<p>1 hour</p>
<p>D. Required Action and associated Completion Time of Condition A, B, or C not met.</p>	<p>D.1 Enter the Condition referenced in Table 3.3.1.1-1 for the channel.</p>	<p>Immediately</p>
<p>E. As required by Required Action D.1 and referenced in Table 3.3.1.1-1.</p>	<p>E.1 Reduce THERMAL POWER to &lt; 26% RTP.</p>	<p>4 hours</p>

(continued)

SURVEILLANCE REQUIREMENTS

-----NOTES-----

1. Refer to Table 3.3.1.1-1 to determine which SRs apply for each RPS Function.
  2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains RPS trip capability.
- 

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.1	(Not used.)	
SR 3.3.1.1.2	Perform CHANNEL CHECK.	24 hours
SR 3.3.1.1.3	<p>-----NOTE----- Not required to be performed until 12 hours after THERMAL POWER <math>\geq</math> 23% RTP. -----</p> <p>Adjust the average power range monitor (APRM) channels to conform to the calculated power while operating at <math>\geq</math> 23% RTP.</p>	7 days
SR 3.3.1.1.4	<p>-----NOTE----- Not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. -----</p> <p>Perform CHANNEL FUNCTIONAL TEST.</p>	7 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.3.1.1.16 Verify Turbine Stop Valve—Closure and Turbine Control Valve Fast Closure, Trip Oil Pressure—Low Functions are not bypassed when THERMAL POWER is <math>\geq</math> 26% RTP.</p>	<p>24 months</p>
<p>SR 3.3.1.1.17 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. Neutron detectors are excluded.</li> <li>2. For Functions 3 and 4, the sensor response time may be assumed to be the design sensor response time.</li> <li>3. For Function 5, "n" equals 4 channels for the purpose of determining the STAGGERED TEST BASIS Frequency.</li> <li>4. For Function 2.e, "n" equals 8 channels for the purpose of determining the STAGGERED TEST BASIS Frequency. Testing of APRM and Oscillation Power Range Monitor (OPRM) outputs shall alternate.</li> </ol> <p>-----</p> <p>Verify the RPS RESPONSE TIME is within limits.</p>	<p>24 months on a STAGGERED TEST BASIS</p>
<p>SR 3.3.1.1.18 Adjust recirculation drive flow to conform to reactor core flow.</p>	<p>Once within 7 days after reaching equilibrium conditions following refueling outage</p>

(continued)

Table 3.3.1.1-1 (page 1 of 3)  
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
<b>1. Intermediate Range Monitors</b>					
a. Neutron Flux —High	2	3	G	SR 3.3.1.1.2 SR 3.3.1.1.4 SR 3.3.1.1.5 SR 3.3.1.1.6 SR 3.3.1.1.7 SR 3.3.1.1.13 SR 3.3.1.1.15	≤ 120/125 divisions of full scale
	5(a)	3	H	SR 3.3.1.1.2 SR 3.3.1.1.4 SR 3.3.1.1.5 SR 3.3.1.1.13 SR 3.3.1.1.15	≤ 120/125 divisions of full scale
b. Inop	2	3	G	SR 3.3.1.1.4 SR 3.3.1.1.5 SR 3.3.1.1.15	NA
	5(a)	3	H	SR 3.3.1.1.4 SR 3.3.1.1.5 SR 3.3.1.1.15	NA
<b>2. Average Power Range Monitors</b>					
a. Neutron Flux —High (Setdown)	2	3(c)	G	SR 3.3.1.1.2 SR 3.3.1.1.5 SR 3.3.1.1.7 SR 3.3.1.1.8 SR 3.3.1.1.11 SR 3.3.1.1.13	≤ 22.7% RTP
	1	3(c)	F	SR 3.3.1.1.2 SR 3.3.1.1.3 SR 3.3.1.1.5 SR 3.3.1.1.8 SR 3.3.1.1.11 SR 3.3.1.1.13 SR 3.3.1.1.18	≤ 0.55W + 62.6% RTP <sup>(b)</sup> and ≤ 117.1% RTP

(continued)

- (a) With any control rod withdrawn from a core cell containing one or more fuel assemblies.
- (b)  $\leq [0.55(W - \Delta W) + 62.6\% \text{ RTP}]$  when reset for single loop operation per LCO 3.4.1, "Recirculation Loops Operating." The value of  $\Delta W$  is defined in plant procedures.
- (c) Each APRM channel provides inputs to both trip systems.

Table 3.3.1.1-1 (page 3 of 3)  
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
7. Scram Discharge Volume Water Level —High	1,2	2	G	SR 3.3.1.1.5 SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15	≤ 108 gallons
	5(a)	2	H	SR 3.3.1.1.5 SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15	≤ 108 gallons
8. Turbine Stop Valve —Closure	≥ 26% RTP	4	E	SR 3.3.1.1.5 SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.16 SR 3.3.1.1.17	≤ 10% closed
9. Turbine Control Valve Fast Closure, Control Oil Pressure —Low	≥ 26% RTP	2	E	SR 3.3.1.1.5 SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.16 SR 3.3.1.1.17	≥ 500 psig
10. Reactor Mode Switch — Shutdown Position	1,2	1	G	SR 3.3.1.1.12 SR 3.3.1.1.15	NA
	5(a)	1	H	SR 3.3.1.1.12 SR 3.3.1.1.15	NA
11. Manual Scram	1,2	1	G	SR 3.3.1.1.9 SR 3.3.1.1.15	NA
	5(a)	1	H	SR 3.3.1.1.9 SR 3.3.1.1.15	NA

(a) With any control rod withdrawn from a core cell containing one or more fuel assemblies.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.3.2.1.2 -----NOTE----- Not required to be performed until 1 hour after any control rod is withdrawn at <math>\leq 8.75\%</math> RTP in MODE 2. ----- Perform CHANNEL FUNCTIONAL TEST.</p>	<p>92 days</p>
<p>SR 3.3.2.1.3 -----NOTE----- Not required to be performed until 1 hour after THERMAL POWER is <math>\leq 8.75\%</math> RTP in MODE 1. ----- Perform CHANNEL FUNCTIONAL TEST.</p>	<p>92 days</p>
<p>SR 3.3.2.1.4 Verify the RBM:</p> <ul style="list-style-type: none"> <li>a. Low Power Range—Upscale Function OR Intermediate Power Range—Upscale Function OR High Power Range—Upscale Function is enabled (not bypassed) when APRM Simulated Thermal Power is <math>\geq 29\%</math>.</li> <li>b. Intermediate Power Range—Upscale Function OR High Power Range—Upscale Function is enabled (not bypassed) when APRM Simulated Thermal Power is <math>\geq</math> Intermediate Power Range Setpoint specified in the COLR.</li> <li>c. High Power Range—Upscale Function is enabled (not bypassed) when APRM Simulated Thermal Power is <math>\geq</math> High Power Range Setpoint specified in the COLR.</li> </ul>	<p>24 months</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.3.2.1.5      Verify the RWM is not bypassed when THERMAL POWER is $\leq$ 8.75% RTP.	24 months
SR 3.3.2.1.6      -----NOTE----- Not required to be performed until 1 hour after reactor mode switch is in the shutdown position. -----  Perform CHANNEL FUNCTIONAL TEST.	24 months
SR 3.3.2.1.7      -----NOTE----- Neutron detectors are excluded. -----  Perform CHANNEL CALIBRATION.	24 months
SR 3.3.2.1.8      Verify control rod sequences input to the RWM are in conformance with BPWS.	Prior to declaring RWM OPERABLE following loading of sequence into RWM

Table 3.3.2.1-1 (page 1 of 1)  
Control Rod Block Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Rod Block Monitor				
a. Low Power Range —Upscale	(a)	2	SR 3.3.2.1.1 SR 3.3.2.1.4 SR 3.3.2.1.7	(h)
b. Intermediate Power Range —Upscale	(b)	2	SR 3.3.2.1.1 SR 3.3.2.1.4 SR 3.3.2.1.7	(h)
c. High Power Range —Upscale	(c),(d)	2	SR 3.3.2.1.1 SR 3.3.2.1.4 SR 3.3.2.1.7	(h)
d. Inop	(d),(e)	2	SR 3.3.2.1.1	NA
2. Rod Worth Minimizer	1(f),2(f)	1	SR 3.3.2.1.2 SR 3.3.2.1.3 SR 3.3.2.1.5 SR 3.3.2.1.8	NA
3. Reactor Mode Switch —Shutdown Position	(g)	2	SR 3.3.2.1.6	NA

- (a) THERMAL POWER is  $\geq$  29% RTP and MCPR less than the limit specified in the COLR except not required to be OPERABLE if the Intermediate Power Range —Upscale Function or High Power Range —Upscale Function is OPERABLE.
- (b) THERMAL POWER is  $\geq$  Intermediate Power Range Setpoint specified in the COLR and MCPR less than the limit specified in the COLR except not required to be OPERABLE if the High Power Range —Upscale Function is OPERABLE.
- (c) THERMAL POWER  $\geq$  High Power Range Setpoint specified in the COLR and  $<$  90% RTP and MCPR less than the limit specified in the COLR.
- (d) THERMAL POWER  $\geq$  90% RTP and MCPR less than the limit specified in the COLR.
- (e) THERMAL POWER  $\geq$  29% and  $<$  90% RTP and MCPR less than the limit specified in the COLR.
- (f) With THERMAL POWER  $\leq$  8.75% RTP.
- (g) Reactor mode switch in the shutdown position.
- (h) Allowable Value specified in the COLR.

3.3 INSTRUMENTATION

3.3.2.2 Feedwater and Main Turbine High Water Level Trip Instrumentation

LC0 3.3.2.2 Three channels of feedwater and main turbine high water level trip instrumentation shall be OPERABLE.

APPLICABILITY: THERMAL POWER  $\geq$  23% RTP.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One feedwater and main turbine high water level trip channel inoperable.	A.1 Place channel in trip.	7 days
B. Two or more feedwater and main turbine high water level trip channels inoperable.	B.1 Restore feedwater and main turbine high water level trip capability.	4 hours
C. Required Action and associated Completion Time not met.	C.1 Reduce THERMAL POWER to < 23% RTP.	4 hours

3.7 PLANT SYSTEMS

3.7.6 The Main Turbine Bypass System

LCO 3.7.6 The Main Turbine Bypass System shall be OPERABLE.

OR

The following limits are made applicable:

- a. LCO 3.2.1, "AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)," limits for an inoperable Main Turbine Bypass System, as specified in the COLR; and
- b. LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," limits for an inoperable Main Turbine Bypass System, as specified in the COLR.

APPLICABILITY: THERMAL POWER  $\geq$  23% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	A.1 Satisfy the requirements of the LCO.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to < 23% RTP.	4 hours