

## **ATTACHMENT 2**

### **Proposed Technical Specification Markups**

- (3) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use at any time any byproduct, source, and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
- (4) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use in amounts as required any byproduct, source, or special nuclear material without restriction to chemical or physical form for sample analysis or equipment and instrument calibration or associated with radioactive apparatus or components;
- (5) Pursuant to the Act and 10 CFR Parts 30 and 70, to possess but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This renewed operating license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The licensee is authorized to operate the facility at steady state reactor core power levels not in excess of ~~3458~~ megawatts thermal.

(2) Technical Specifications

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The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 288, are hereby incorporated in the renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

For Surveillance Requirements (SRs) that are new in Amendment 234 to Facility Operating License DPR-33, the first performance is due at the end of the first surveillance interval that begins at implementation of the Amendment 234. For SRs that existed prior to Amendment 234, including SRs with modified acceptance criteria and SRs whose frequency of performance is being extended, the first performance is due at the end of the first surveillance interval that begins on the date the surveillance was last performed prior to implementation of Amendment 234.

- (3) The licensee is authorized to relocate certain requirements included in Appendix A and the former Appendix B to licensee-controlled documents. Implementation of this amendment shall include the relocation of these requirements to the appropriate documents, as described in the licensee's application dated September 6, 1996, as supplemented December 11, 1996; April 11, May 1; August 14, October 15, November 5 and 14, December 3, 4, 11, 22, 23, 29, and 30, 1997; January 23, March 12 and 13, April 16, 20, and 28, May 7, 14, 19, and 27, and June 2, 5, 10 and 19, 1998; evaluated in the NRC staff's Safety Evaluation enclosed with this amendment. This amendment is effective immediately and shall be implemented within 90 days of the date of this amendment.

(4) Mitigation Strategy License Condition

Develop and maintain strategies for addressing large fires and explosions and that include the following key areas:

(a) Fire fighting response strategy with the following elements:

1. Pre-defined coordinated fire response strategy and guidance
2. Assessment of mutual aid fire fighting assets
3. Designated staging areas for equipment and materials
4. Command and control
5. Training of response personnel

(b) Operations to mitigate fuel damage considering the following:

1. Protection and use of personnel assets
2. Communications
3. Minimizing fire spread
4. Procedures for implementing integrated fire response strategy
5. Identification of readily-available pre-staged equipment
6. Training on integrated fire response strategy
7. Spent fuel pool mitigation measures

(c) Actions to minimize release to include consideration of:

1. Water spray scrubbing
2. Dose to onsite responders

- (5) The licensee shall implement and maintain all Actions required by Attachment 2 to NRC Order EA-06-137, issued June 20, 2006, except the last action that requires incorporation of the strategies into the site security plan, contingency plan, emergency plan and/or guard training and qualification plan, as appropriate.

- (6) Deleted. ← INSERT A

- (7) Deleted.



## INSERT A

### 2.C.(6) Potential Adverse Flow Effects

In conjunction with the license amendment to revise paragraph 2.C.(1) of Renewed Facility Operating License No. DPR-33, for Browns Ferry Nuclear Plant Unit 1, to reflect the new maximum licensed reactor core power level of 3952 megawatts thermal (MWt), the license is also amended to add the following license condition. This license condition provides for monitoring and evaluating potential adverse flow effects as a result of extended power uprate (EPU) operation on plant structures, systems, and components (including verifying the continued structural integrity of the replacement steam dryer).

- a) The following requirements are placed on the initial operation of the facility, above the thermal power level of 3458 MWt, for the power ascension to 3952 MWt. These conditions are applicable until the first time full EPU conditions (3952 MWt) are achieved.
  1. During power ascension greater than 3458 MWt, at test increments that do not exceed 5% of 3458 MWt, the main steam line strain gauges shall be monitored against established acceptance limits to assure steam dryer structural integrity is maintained. If flow-induced resonances are identified and the strains or vibrations increase above the predetermined criteria, power ascension shall be stopped until analysis demonstrating acceptable results is performed.
  2. During power ascension greater than 3458 MWt, hold points, in increments that do not exceed 5% of 3458 MWt, shall be established for NRC review of power ascension data. Power shall not be increased above each hold point until 96 hours after the NRC confirms receipt of the evaluations unless, prior to the expiration of the 96 hour period, the NRC communicates that the NRC staff has no objections to the continuation of power ascension.
- b) After full EPU power has been achieved, replacement steam dryer data at the full power level shall be provided to the NRC within 96 hours.
- c) Following power ascension to full EPU conditions, a vibration summary report for piping and valve vibration data collected at full EPU power level shall be provided to the NRC. Vibration data shall be collected for piping and valve locations deemed prone to vibration identified in Attachment 45 to the EPU License Amendment Request, including the identified locations associated with the main steam (MS) system, the feedwater system, the condensate system, the extraction steam system, the heater drain system, safety relief valves, main steam isolation valves, the inboard isolation valve for MS drain piping, the inboard isolation valve for the reactor core isolation cooling turbine steam supply line, and the inboard isolation valve for the high pressure coolant injection turbine steam supply line. The report shall also include an evaluation of the measured vibration data collected during power ascension compared against established acceptance limits. The report shall be submitted to the NRC staff in accordance with 10 CFR 50.4. The report shall be submitted within 90 days of reaching the full EPU power level.
- d) Following power ascension to full EPU conditions, a confirmatory analysis shall be performed for the replacement steam dryer. This analysis shall include a final load definition and stress re-analysis of the replacement steam dryer using the biases and uncertainties determined at EPU conditions and a comparison of predicted and measured pressures and strains on the replacement steam dryer. The report shall be submitted to the NRC staff in accordance with 10 CFR 50.4. The report shall be submitted within 90 days of reaching the full EPU power level.
- e) During the first two scheduled refueling outages after reaching EPU conditions, a visual inspection shall be performed of all accessible, susceptible locations of the replacement steam dryer in accordance with BWRVIP-139A and General Electric inspection guidelines. The results of the visual inspections of the steam dryer shall be submitted to the NRC staff in a report in accordance with 10 CFR 50.4. The report shall be submitted within 90 days following startup from each of the first two respective refueling outages.



## 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).

**PHYSICS TESTS** PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation. These tests are:

- a. Described in Section 13.10, Refueling Test Program; of the FSAR;
- b. Authorized under the provisions of 10 CFR 50.59; or
- c. Otherwise approved by the Nuclear Regulatory Commission.

**RATED THERMAL POWER (RTP)** RTP shall be a total reactor core heat transfer rate to the reactor coolant of ~~3458~~ MWt.

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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  $\leq 25\%$  RTP.

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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  $\geq 1.11$  for single 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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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>Verify the concentration and temperature of boron in solution are within the limits of Figure 3.1.7-1.</p>	<p>Once within 8 hours after discovery that SPB concentration is &gt; 9.2% by weight</p> <p><u>AND</u></p> <p>12 hours thereafter</p>
<p>SR 3.1.7.5      Verify the minimum quantity of Boron-10 in the SLC solution tank and available for injection is ≥ 203 pounds.</p>	<p>31 days</p>
<p>SR 3.1.7.6      Verify the SLC conditions satisfy the following equation:</p> $\frac{(C)(Q)(E)}{(\text{13 wt. \%})(86 \text{ gpm})(19.8 \text{ atom\%})} \geq 1$ <p>where,</p> <p>C = sodium pentaborate solution concentration (weight percent)</p> <p>Q = pump flow rate (gpm)</p> <p>E = Boron-10 enrichment (atom percent Boron-10)</p>	<p>31 days</p> <p><u>AND</u></p> <p>Once within 24 hours after water or boron is added to the solution</p>
<p>SR 3.1.7.7      Verify each pump develops a flow rate ≥ 39 gpm at a discharge pressure ≥ 1325 psig.</p>	<p>24 months</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  $\geq$  ~~25~~<sup>23</sup>% RTP.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Any APLHGR not within limits.	A.1 Restore APLHGR(s) to within limits.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to $<$ <del>25</del> <sup>23</sup> % 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 ≥ <del>25</del> RTP <sup>23</sup> <u>AND</u> 24 hours thereafter

## 3.2 POWER DISTRIBUTION LIMITS

### 3.2.2 MINIMUM CRITICAL POWER RATIO (MCPR)

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

APPLICABILITY: THERMAL POWER  $\geq$  25% RTP.

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#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Any MCPR not within limits.	A.1 Restore MCPR(s) to within limits.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to < 25% RTP.	4 hours

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# SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.2.1	Verify all MCPRs are greater than or equal to the limits specified in the COLR.	Once within 12 hours after $\geq 25\%$ RTP <div style="position: relative; top: -10px; left: 100px;"> <div style="border: 1px solid black; padding: 2px;">23</div> </div> <u>AND</u> 24 hours thereafter
SR 3.2.2.2	Determine the MCPR limits.	Once within 72 hours after each completion of SR 3.1.4.1 <u>AND</u> Once within 72 hours after each completion of SR 3.1.4.2

## 3.2 POWER DISTRIBUTION LIMITS

### 3.2.3 LINEAR HEAT GENERATION RATE (LHGR)

LCO 3.2.3 All LHGRs shall be less than or equal to the limits specified in the COLR.

APPLICABILITY: THERMAL POWER  $\geq$  25% RTP.

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#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Any LHGR not within limits.	A.1 Restore LHGR(s) to within limits.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to < 25% RTP.	4 hours

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**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
<p>SR 3.2.3.1      Verify all LHGRs are less than or equal to the limits specified in the COLR.</p>	<p>Once within 12 hours after ≥ <del>25</del><sup>23</sup>% RTP <u>AND</u> 24 hours thereafter</p>



ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more Functions with RPS trip capability not maintained.	C.1 Restore RPS trip capability.	1 hour
D. Required Action and associated Completion Time of Condition A, B, or C not met.	D.1 Enter the Condition referenced in Table 3.3.1.1-1 for the channel.	Immediately
E. As required by Required Action D.1 and referenced in Table 3.3.1.1-1.	E.1 Reduce THERMAL POWER to < 30% RTP. <span style="border: 1px solid blue; padding: 0 2px;">26</span>	4 hours
F. As required by Required Action D.1 and referenced in Table 3.3.1.1-1.	F.1 Be in MODE 2.	6 hours
G. As required by Required Action D.1 and referenced in Table 3.3.1.1-1.	G.1 Be in MODE 3.	12 hours
H. As required by Required Action D.1 and referenced in Table 3.3.1.1-1.	H.1 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately

## 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	Perform CHANNEL CHECK.	24 hours
SR 3.3.1.1.2	<p>-----NOTE----- Not required to be performed until 12 hours after THERMAL POWER <math>\geq</math> 25% RTP. -----23-----</p> <p>Verify the absolute difference between the average power range monitor (APRM) channels and the calculated power is <math>\leq</math> 2% RTP while operating at <math>\geq</math> 25% RTP. -----23-----</p>	7 days
SR 3.3.1.1.3	<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
SR 3.3.1.1.10	Perform CHANNEL CALIBRATION.	184 days
SR 3.3.1.1.11	(Deleted)	
SR 3.3.1.1.12	Perform CHANNEL FUNCTIONAL TEST.	24 months
SR 3.3.1.1.13	<p>-----NOTE----- Neutron detectors are excluded. -----</p> <p>Perform CHANNEL CALIBRATION.</p>	24 months
SR 3.3.1.1.14	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 months
SR 3.3.1.1.15	Verify Turbine Stop Valve — Closure and Turbine Control Valve Fast Closure, Trip Oil Pressure — Low Functions are not bypassed when THERMAL POWER is $\geq 30\%$ RTP. <span style="border: 1px solid black; padding: 0 2px;">26</span>	24 months
SR 3.3.1.1.16	<p>-----NOTE----- For Function 2.a, 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>	184 days
SR 3.3.1.1.17	Verify OPRM is not bypassed when APRM Simulated Thermal Power is $\geq 25\%$ and recirculation drive flow is $< 60\%$ of rated recirculation drive flow. <span style="border: 1px solid black; padding: 0 2px;">23</span>	24 months



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
1. Intermediate Range Monitors					
a. Neutron Flux - High	2	3	G	SR 3.3.1.1.1 SR 3.3.1.1.3 SR 3.3.1.1.5 SR 3.3.1.1.6 SR 3.3.1.1.9 SR 3.3.1.1.14	≤ 120/125 divisions of full scale
	5(a)	3	H	SR 3.3.1.1.1 SR 3.3.1.1.4 SR 3.3.1.1.9 SR 3.3.1.1.14	≤ 120/125 divisions of full scale
b. Inop	2	3	G	SR 3.3.1.1.3 SR 3.3.1.1.14	NA
	5(a)	3	H	SR 3.3.1.1.4 SR 3.3.1.1.14	NA
2. Average Power Range Monitors					
a. Neutron Flux - High, Setdown	2	3(b)	G	SR 3.3.1.1.1 SR 3.3.1.1.6 SR 3.3.1.1.7 SR 3.3.1.1.13 SR 3.3.1.1.16	13 ↓ ≤ 15% RTP
b. Flow Biased Simulated Thermal Power - High	1	3(b)	F	SR 3.3.1.1.1 SR 3.3.1.1.2 SR 3.3.1.1.7 SR 3.3.1.1.13 SR 3.3.1.1.16	0.55 ↓ ≤ 0.66 W + 66% RTP and ≤ 120% RTP(c) 65.5
c. Neutron Flux - High	1	3(b)	F	SR 3.3.1.1.1 SR 3.3.1.1.2 SR 3.3.1.1.7 SR 3.3.1.1.13 SR 3.3.1.1.16	≤ 120% RTP
(continued)					



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

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

(c)  $[0.66 \text{ W} + 66\% - 0.66 \Delta \text{ W}]$  RTP when reset for single loop operation per LCO 3.4.1, "Recirculation Loops Operating."

0.55 65.5 0.55

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 (continued)					
b. Float Switch	1,2	2	G	SR 3.3.1.1.8 SR 3.3.1.1.13 SR 3.3.1.1.14	≤ 46 gallons
	5(a)	2	H	SR 3.3.1.1.8 SR 3.3.1.1.13 SR 3.3.1.1.14	≤ 46 gallons
8. Turbine Stop Valve - Closure	≥ 30% RTP 	4	E	SR 3.3.1.1.8 SR 3.3.1.1.13 SR 3.3.1.1.14 SR 3.3.1.1.15	≤ 10% closed
9. Turbine Control Valve Fast Closure, Trip Oil Pressure - Low(d)	≥ 30% RTP 	2	E	SR 3.3.1.1.8 SR 3.3.1.1.13 SR 3.3.1.1.14 SR 3.3.1.1.15	≥ 550 psig
10. Reactor Mode Switch - Shutdown Position	1,2	1	G	SR 3.3.1.1.12 SR 3.3.1.1.14	NA
	5(a)	1	H	SR 3.3.1.1.12 SR 3.3.1.1.14	NA
11. Manual Scram	1,2	1	G	SR 3.3.1.1.8 SR 3.3.1.1.14	NA
	5(a)	1	H	SR 3.3.1.1.8 SR 3.3.1.1.14	NA
12. RPS Channel Test Switches	1,2	2	G	SR 3.3.1.1.4	NA
	5(a)	2	H	SR 3.3.1.1.4	NA

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

(d) During instrument calibrations, if the As Found channel setpoint is conservative with respect to the Allowable Value but outside its acceptable As Found band as defined by its associated Surveillance Requirement procedure, then there shall be an initial determination to ensure confidence that the channel can perform as required before returning the channel to service in accordance with the Surveillance. If the As Found instrument channel setpoint is not conservative with respect to the Allowable Value, the channel shall be declared inoperable.

Prior to returning a channel to service, the instrument channel setpoint shall be calibrated to a value that is within the acceptable As Left tolerance of the setpoint; otherwise, the channel shall be declared inoperable.

The nominal Trip Setpoint shall be specified on design output documentation which is incorporated by reference in the Updated Final Safety Analysis Report. The methodology used to determine the nominal Trip Setpoint, the predefined As Found Tolerance, and the As Left Tolerance band, and a listing of the setpoint design output documentation shall be specified in Chapter 7 of the Updated Final Safety Analysis Report.

### 3.3 INSTRUMENTATION

#### 3.3.2.2. Feedwater and Main Turbine High Water Level Trip Instrumentation

LCO 3.3.2.2 Two channels of feedwater and main turbine high water level trip instrumentation per trip system shall be OPERABLE.

APPLICABILITY: THERMAL POWER  $\geq$  25% RTP.

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#### ACTIONS

#### NOTE

Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more feedwater and main turbine high water level trip channels inoperable, in one trip system.	A.1 Place channel(s) in trip.	7 days
B. One or more feedwater and main turbine high water level trip channels inoperable in each trip system.	B.1 Restore feedwater and main turbine high water level trip capability.	2 hours
C. Required Action and associated Completion Time not met.	C.1 Reduce THERMAL POWER to < 25% RTP.	4 hours

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### 3.3 INSTRUMENTATION

#### 3.3.4.1 End of Cycle Recirculation Pump Trip (EOC-RPT) Instrumentation

LCO 3.3.4.1

- a. Two channels per trip system for each EOC-RPT instrumentation Function listed below shall be OPERABLE:
1. Turbine Stop Valve (TSV) - Closure; and
  2. Turbine Control Valve (TCV) Fast Closure, Trip Oil Pressure - Low.

OR

- b. LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," limits for inoperable EOC-RPT as specified in the COLR are made applicable; and
- c. LCO 3.2.3, "LINEAR HEAT GENERATION RATE (LHGR)," limits for an inoperable EOC-RPT, as specified in the COLR, are made applicable.

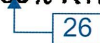
APPLICABILITY: THERMAL POWER  $\geq$  30% RTP.

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ACTIONS

~~NOTE~~

Separate Condition entry is allowed for each channel.


CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Restore channel to OPERABLE status.	72 hours
	OR A.2 <del>NOTE</del> Not applicable if inoperable channel is the result of an inoperable breaker.	
	Place channel in trip.	72 hours
B. One or more Functions with EOC-RPT trip capability not maintained.  <u>AND</u> MCPR and LHGR limits for inoperable EOC-RPT not made applicable.	B.1 Restore EOC-RPT trip capability.	2 hours
	OR B.2 Apply MCPR and LHGR limits for inoperable EOC-RPT as specified in the COLR.	2 hours
C. Required Action and associated Completion Time not met.	C.1 Reduce THERMAL POWER to < 30% RTP. 	4 hours



## SURVEILLANCE REQUIREMENTS

### NOTE

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 EOC-RPT trip capability.

SURVEILLANCE		FREQUENCY
SR 3.3.4.1.1	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.4.1.2	Verify TSV - Closure and TCV Fast Closure, Trip Oil Pressure - Low Functions are not bypassed when THERMAL POWER is $\geq 30\%$ RTP. 	24 months
SR 3.3.4.1.3	Perform CHANNEL CALIBRATION. The Allowable Values shall be:  TSV - Closure: $\leq 10\%$ closed; and  TCV Fast Closure, Trip Oil Pressure - Low: $\geq 550$ psig.	24 months
SR 3.3.4.1.4	Perform LOGIC SYSTEM FUNCTIONAL TEST including breaker actuation.	24 months

# SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.4.2.1</p> <p>NOTES</p> <ol style="list-style-type: none"> <li>1. Not required to be performed until 4 hours after associated recirculation loop is in operation.</li> <li>2. Not required to be performed until 24 hours after &gt; 25% RTP.</li> </ol> <p>23</p> <p>Verify at least one of the following criteria (a, b, or c) is satisfied for each operating recirculation loop:</p> <ol style="list-style-type: none"> <li>a. Recirculation pump flow to speed ratio differs by <math>\leq 5\%</math> from established patterns, and jet pump loop flow to recirculation pump speed ratio differs by <math>\leq 5\%</math> from established patterns.</li> <li>b. Each jet pump diffuser to lower plenum differential pressure differs by <math>\leq 20\%</math> from established patterns.</li> <li>c. Each jet pump flow differs by <math>\leq 10\%</math> from established patterns.</li> </ol>	<p>24 hours</p>

# SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.3.1.1	Verify $\geq$ <del>2500</del> <sup>2615</sup> gal of liquid nitrogen are contained in each nitrogen storage tank.	31 days
SR 3.6.3.1.2	Verify each CAD subsystem manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position or can be aligned to the correct position.	31 days

### 3.7 PLANT SYSTEMS

#### 3.7.5 Main Turbine Bypass System

LCO 3.7.5 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; and
- c. LCO 3.2.3, "LINEAR HEAT GENERATION RATE (LHGR)," limits for an inoperable Main Turbine Bypass System, as specified in the COLR.

APPLICABILITY: THERMAL POWER  $\geq$  25% RTP.

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#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	A.1 Satisfy the requirements of the LCO.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to < 25% RTP.	4 hours

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## 5.5 Programs and Manuals

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### 5.5.11 Safety Function Determination Program (SFDP) (continued)

A loss of safety function exists when, assuming no concurrent single failure, a safety function assumed in the accident analysis cannot be performed. For the purpose of this program, a loss of safety function may exist when a support system is inoperable, and:

- a. A required system redundant to system(s) supported by the inoperable support system is also inoperable; or
- b. A required system redundant to system(s) in turn supported by the inoperable supported system is also inoperable; or
- c. A required system redundant to support system(s) for the supported systems (a) and (b) above is also inoperable.

The SFDP identifies where a loss of safety function exists. 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.

### 5.5.12 Primary Containment Leakage Rate Testing Program

A program shall be established to implement the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995.

49.1 The peak calculated containment internal pressure for the design basis loss of coolant accident,  $P_a$ , is ~~48.5~~ psig. The maximum allowable primary containment leakage rate,  $L_a$ , shall be 2% of primary containment air weight per day at  $P_a$ .

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(continued)



sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

- (4) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use in amounts as required any byproduct, source, or special nuclear material without restriction to chemical or physical form for sample analysis or equipment and instrument calibration or associated with radioactive apparatus or components;
- (5) Pursuant to the Act and 10 CFR Parts 30 and 70, to possess but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This renewed operating license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The licensee is authorized to operate the facility at steady state reactor core power levels not in excess of ~~3458~~ megawatts thermal.

(2) Technical Specifications

↑  
3952

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 313, are hereby incorporated in the renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

For Surveillance Requirements (SRs) that are new in Amendment 253 to Facility Operating License DPR-52, the first performance is due at the end of the first surveillance interval that begins at implementation of Amendment 253. For SRs that existed prior to Amendment 253, including SRs with modified acceptance criteria and SRs whose frequency of performance is being extended, the first performance is due at the end of the first surveillance interval that begins on the date the surveillance was last performed prior to implementation of Amendment 253.

- 3) The licensee is authorized to relocate certain requirements included in Appendix A and the former Appendix B to licensee-controlled documents. Implementation of this amendment shall include the relocation of these requirements to the appropriate documents, as described in the licensee's

application dated September 6, 1996, as supplemented May 1, August 14, November 5 and 14, December 3, 4, 11, 22, 23, 29, and 30, 1997; January 23, March 12, April 16, 20 and 28, May 7, 14, 19, and 27, and June 2, 5, 10 and 19, 1998; evaluated in the NRC staff's Safety Evaluation enclosed with this amendment. This amendment is effective immediately and shall be implemented within 90 days of the date of this amendment.

(4) Deleted. ← INSERT B

(5) Classroom and simulator training on all power uprate related changes that affect operator performance will be conducted prior to operating at uprated conditions. Simulator changes that are consistent with power uprate conditions will be made and simulator fidelity will be validated in accordance with ANSI/ANS 3.5-1985. Training and the plant simulator will be modified, as necessary, to incorporate changes identified during startup testing. This amendment is effective immediately.

(6) Mitigation Strategy License Condition

Develop and maintain strategies for addressing large fires and explosions and that include the following key areas:

- (a) Fire fighting response strategy with the following elements:
  - 1. Pre-defined coordinated fire response strategy and guidance
  - 2. Assessment of mutual aid fire fighting assets
  - 3. Designated staging areas for equipment and materials
  - 4. Command and control
  - 5. Training of response personnel
- (b) Operations to mitigate fuel damage considering the following:
  - 1. Protection and use of personnel assets
  - 2. Communications
  - 3. Minimizing fire spread
  - 4. Procedures for implementing integrated fire response strategy
  - 5. Identification of readily-available pre-staged equipment
  - 6. Training on integrated fire response strategy
  - 7. Spent fuel pool mitigation measures
- (c) Actions to minimize release to include consideration of:
  - 1. Water spray scrubbing
  - 2. Dose to onsite responders
- (7) The licensee shall implement and maintain all Actions required by Attachment 2 to NRC Order EA-06-137, issued June 20, 2006, except the last action that requires incorporation of the strategies into the site security plan, contingency plan, emergency plan and/or guard training and qualification plan, as appropriate.



## INSERT B

### 2.C.(4) Potential Adverse Flow Effects

In conjunction with the license amendment to revise paragraph 2.C.(1) of Renewed Facility Operating License No. DPR-52, for Browns Ferry Nuclear Plant Unit 2, to reflect the new maximum licensed reactor core power level of 3952 megawatts thermal (MWt), the license is also amended to add the following license condition. This license condition provides for monitoring and evaluating potential adverse flow effects as a result of extended power uprate (EPU) operation on plant structures, systems, and components (including verifying the continued structural integrity of the replacement steam dryer).

- a) The following requirements are placed on the initial operation of the facility, above the thermal power level of 3458 MWt, for the power ascension to 3952 MWt. These conditions are applicable until the first time full EPU conditions (3952 MWt) are achieved.
  - 1. During power ascension greater than 3458 MWt, at test increments that do not exceed 5% of 3458 MWt, the main steam line strain gauges shall be monitored against established acceptance limits to assure steam dryer structural integrity is maintained. If flow-induced resonances are identified and the strains or vibrations increase above the predetermined criteria, power ascension shall be stopped until analysis demonstrating acceptable results is performed.
  - 2. During power ascension greater than 3458 MWt, hold points, in increments that do not exceed 5% of 3458 MWt, shall be established for NRC review of power ascension data. Power shall not be increased above each hold point until 96 hours after the NRC confirms receipt of the evaluations unless, prior to the expiration of the 96 hour period, the NRC communicates that the NRC staff has no objections to the continuation of power ascension.
- b) After full EPU power has been achieved, replacement steam dryer data at the full power level shall be provided to the NRC within 96 hours.
- c) Following power ascension to full EPU conditions, a vibration summary report for piping and valve vibration data collected at full EPU power level shall be provided to the NRC. Vibration data shall be collected for piping and valve locations deemed prone to vibration identified in Attachment 45 to the EPU License Amendment Request, including the identified locations associated with the main steam (MS) system, the feedwater system, the condensate system, the extraction steam system, the heater drain system, safety relief valves, main steam isolation valves, the inboard isolation valve for MS drain piping, the inboard isolation valve for the reactor core isolation cooling turbine steam supply line, and the inboard isolation valve for the high pressure coolant injection turbine steam supply line. The report shall also include an evaluation of the measured vibration data collected during power ascension compared against established acceptance limits. The report shall be submitted to the NRC staff in accordance with 10 CFR 50.4. The report shall be submitted within 90 days of reaching the full EPU power level.
- d) Following power ascension to full EPU conditions, a confirmatory analysis shall be performed for the replacement steam dryer. This analysis shall include a final load definition and stress re-analysis of the replacement steam dryer using the biases and uncertainties determined at EPU conditions and a comparison of predicted and measured pressures and strains on the replacement steam dryer. The report shall be submitted to the NRC staff in accordance with 10 CFR 50.4. The report shall be submitted within 90 days of reaching the full EPU power level.
- e) During the first two scheduled refueling outages after reaching EPU conditions, a visual inspection shall be performed of all accessible, susceptible locations of the replacement steam dryer in accordance with BWRVIP-139A and General Electric inspection guidelines. The results of the visual inspections of the steam dryer shall be submitted to the NRC staff in a report in accordance with 10 CFR 50.4. The report shall be submitted within 90 days following startup from each of the first two respective refueling outages.

1.1 Definitions (continued)

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**PHYSICS TESTS**

**PHYSICS TESTS** shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation. These tests are:

- a. Described in Section 13.10, Refueling Test Program; of the FSAR;
- b. Authorized under the provisions of 10 CFR 50.59; or
- c. Otherwise approved by the Nuclear Regulatory Commission.

**RATED THERMAL POWER (RTP)**

RTP shall be a total reactor core heat transfer rate to the reactor coolant of ~~3458~~ MWt.

**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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(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  $\leq$  ~~25%~~ RTP.

23

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

MCPR shall be  $\geq$  1.06 for two recirculation loop operation or  $\geq$  1.08 for single 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.
-



SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>Verify the concentration and temperature of boron in solution are within the limits of Figure 3.1.7-1.</p>	<p>Once within 8 hours after discovery that SPB concentration is &gt; 9.2% by weight</p> <p><u>AND</u></p> <p>12 hours thereafter</p>
<p>SR 3.1.7.5      Verify the minimum quantity of Boron-10 in the SLC solution tank and available for injection is <math>\geq</math> <del>186</del> pounds.</p> <p style="margin-left: 150px;"><span style="border: 1px solid black; padding: 2px;">203</span></p>	<p>31 days</p>
<p>SR 3.1.7.6      Verify the SLC conditions satisfy the following equation:</p> $\frac{(\text{C})(\text{Q})(\text{E})}{(\text{13 wt. \%})(\text{86 gpm})(\text{19.8 atom\%})} \geq 1$ <div style="display: flex; justify-content: space-around; margin-top: -10px;"> <div style="text-align: center;"><span style="border: 1px solid black; padding: 2px;">8.7</span> →</div> <div style="text-align: center;">↑ <span style="border: 1px solid black; padding: 2px;">50</span></div> <div style="text-align: center;">↑ <span style="border: 1px solid black; padding: 2px;">94</span></div> </div> <p>where,</p> <p>C = sodium pentaborate solution concentration (weight percent)</p> <p>Q = pump flow rate (gpm)</p> <p>E = Boron-10 enrichment (atom percent Boron-10)</p>	<p>31 days</p> <p><u>AND</u></p> <p>Once within 24 hours after water or boron is added to the solution</p>
<p>SR 3.1.7.7      Verify each pump develops a flow rate <math>\geq</math> 39 gpm at a discharge pressure <math>\geq</math> 1325 psig.</p>	<p>24 months</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  $\geq$  25% RTP.

23

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Any APLHGR not within limits.	A.1 Restore APLHGR(s) to within limits.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to < 25% RTP.	4 hours

23

# SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.2.1.1.      Verify all APLHGRs are less than or equal to the limits specified in the COLR.</p>	<p>Once within 12 hours after <math>\geq 25\%</math> RTP  <sup>23</sup>  <u>AND</u>  24 hours thereafter</p>

### 3.2 POWER DISTRIBUTION LIMITS

#### 3.2.2 MINIMUM CRITICAL POWER RATIO (MCPR)

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

APPLICABILITY: THERMAL POWER  $\geq$  25% RTP.

23

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Any MCPR not within limits.	A.1 Restore MCPR(s) to within limits.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to < 25% RTP.	4 hours

23

# SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.2.1	Verify all MCPRs are greater than or equal to the limits specified in the COLR.	Once within 12 hours after $\geq 25\%$ RTP <div>23</div> <u>AND</u>  24 hours thereafter
SR 3.2.2.2	Determine the MCPR limits.	Once within 72 hours after each completion of SR 3.1.4.1  <u>AND</u>  Once within 72 hours after each completion of SR 3.1.4.2



## 3.2 POWER DISTRIBUTION LIMITS

### 3.2.3 LINEAR HEAT GENERATION RATE (LHGR)

LCO 3.2.3 All LHGRs shall be less than or equal to the limits specified in the COLR.

APPLICABILITY: THERMAL POWER  $\geq$  25% RTP.

23

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Any LHGR not within limits.	A.1 Restore LHGR(s) to within limits.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to < 25% RTP.	4 hours

23

# SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.3.1	Verify all LHGRs are less than or equal to the limits specified in the COLR.	Once within 12 hours after $\geq 25\%$ RTP <div data-bbox="1218 388 1356 493"> <div>23</div> <div>AND</div> </div> 24 hours thereafter

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. <del>NOTE</del></p> <p>Not applicable for Functions 2.a, 2.b, 2.c, 2.d, or 2.f.</p> <hr/> <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><u>OR</u></p> <p>B.2 Place one trip system in trip.</p>	<p>6 hours</p> <p>6 hours</p>
C. One or more Functions with RPS trip capability not maintained.	C.1 Restore RPS trip capability.	1 hour
D. Required Action and associated Completion Time of Condition A, B, or C not met.	D.1 Enter the Condition referenced in Table 3.3.1.1-1 for the channel.	Immediately
E. As required by Required Action D.1 and referenced in Table 3.3.1.1-1.	E.1 Reduce THERMAL POWER to < 30% RTP.	4 hours
F. As required by Required Action D.1 and referenced in Table 3.3.1.1-1.	F.1 Be in MODE 2.	6 hours

(continued)

~~shall be implemented at the end of the Unit 2 cycle~~  
~~on a time schedule to begin on April 11, 1999.~~

## 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	Perform CHANNEL CHECK.	24 hours
SR 3.3.1.1.2	<p>NOTE</p> <p>Not required to be performed until 12 hours after THERMAL POWER <math>\geq</math> 25% RTP.</p> <p>Verify the absolute difference between the average power range monitor (APRM) channels and the calculated power is <math>\leq</math> 2% RTP while operating at <math>\geq</math> 25% RTP.</p>	7 days
SR 3.3.1.1.3	<p>NOTE</p> <p>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
SR 3.3.1.1.10	Perform CHANNEL CALIBRATION.	184 days
SR 3.3.1.1.11	(Deleted)	
SR 3.3.1.1.12	Perform CHANNEL FUNCTIONAL TEST.	24 months
SR 3.3.1.1.13	<p>—————NOTE————— Neutron detectors are excluded.</p> <p>Perform CHANNEL CALIBRATION.</p>	24 months
SR 3.3.1.1.14	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 months
SR 3.3.1.1.15	Verify Turbine Stop Valve - Closure and Turbine Control Valve Fast Closure, Trip Oil Pressure - Low Functions are not bypassed when THERMAL POWER is $\geq 30\%$ RTP. <span style="border: 1px solid black; padding: 0 2px;">26</span>	24 months
SR 3.3.1.1.16	<p>—————NOTE————— For Function 2.a, 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>	184 days
SR 3.3.1.1.17	Verify OPRM is not bypassed when APRM Simulated Thermal Power is $\geq 25\%$ and recirculation drive flow is $< 60\%$ of rated recirculation drive flow. <span style="border: 1px solid black; padding: 0 2px;">23</span>	24 months

~~effective and shall be implemented at the end of the  
Unit 2 Cycle 10 outage schedule to begin on April 11, 1999~~



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
1. Intermediate Range Monitors					
a. Neutron Flux - High	2	3	G	SR 3.3.1.1.1 SR 3.3.1.1.3 SR 3.3.1.1.5 SR 3.3.1.1.6 SR 3.3.1.1.9 SR 3.3.1.1.14	≤ 120/125 divisions of full scale
	5(a)	3	H	SR 3.3.1.1.1 SR 3.3.1.1.4 SR 3.3.1.1.9 SR 3.3.1.1.14	≤ 120/125 divisions of full scale
b. Inop	2	3	G	SR 3.3.1.1.3 SR 3.3.1.1.14	NA
	5(a)	3	H	SR 3.3.1.1.4 SR 3.3.1.1.14	NA
2. Average Power Range Monitors					
a. Neutron Flux - High, (Setdown)	2	3(b)	G	SR 3.3.1.1.1 SR 3.3.1.1.6 SR 3.3.1.1.7 SR 3.3.1.1.13 SR 3.3.1.1.16	13 ≤ 15% RTP
b. Flow Biased Simulated Thermal Power - High	1	3(b)	F	SR 3.3.1.1.1 SR 3.3.1.1.2 SR 3.3.1.1.7 SR 3.3.1.1.13 SR 3.3.1.1.16	0.55 ≤ 0.66 W + 66% RTP and ≤ 120% RTP(c) 65.5
c. Neutron Flux - High	1	3(b)	F	SR 3.3.1.1.1 SR 3.3.1.1.2 SR 3.3.1.1.7 SR 3.3.1.1.13 SR 3.3.1.1.16	≤ 120% RTP
(continued)					

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

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

(c) [0.55 W + 66% - 0.55 Δ W] RTP when reset for single loop operation per LCO 3.4.1, "Recirculation Loops Operating."

0.55 65.5 0.55

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 (continued)					
b. Float Switch	1,2	2	G	SR 3.3.1.1.8 SR 3.3.1.1.13 SR 3.3.1.1.14	≤ 46 gallons
	5(a)	2	H	SR 3.3.1.1.8 SR 3.3.1.1.13 SR 3.3.1.1.14	≤ 46 gallons
8. Turbine Stop Valve - Closure	<div style="border: 1px solid black; padding: 2px; display: inline-block;">26</div> ≥ 30% RTP	4	E	SR 3.3.1.1.8 SR 3.3.1.1.13 SR 3.3.1.1.14 SR 3.3.1.1.15	≤ 10% closed
9. Turbine Control Valve Fast Closure, Trip Oil Pressure - Low(d)	<div style="border: 1px solid black; padding: 2px; display: inline-block;">26</div> ≥ 30% RTP	2	E	SR 3.3.1.1.8 SR 3.3.1.1.13 SR 3.3.1.1.14 SR 3.3.1.1.15	≥ 550 psig
10. Reactor Mode Switch - Shutdown Position	1,2	1	G	SR 3.3.1.1.12 SR 3.3.1.1.14	NA
	5(a)	1	H	SR 3.3.1.1.12 SR 3.3.1.1.14	NA
11. Manual Scram	1,2	1	G	SR 3.3.1.1.8 SR 3.3.1.1.14	NA
	5(a)	1	H	SR 3.3.1.1.8 SR 3.3.1.1.14	NA
12. RPS Channel Test Switches	1,2	2	G	SR 3.3.1.1.4	NA
	5(a)	2	H	SR 3.3.1.1.4	NA
13. Deleted					

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

(d) During instrument calibrations, if the As Found channel setpoint is conservative with respect to the Allowable Value but outside its acceptable As Found band as defined by its associated Surveillance Requirement procedure, then there shall be an initial determination to ensure confidence that the channel can perform as required before returning the channel to service in accordance with the Surveillance. If the As Found instrument channel setpoint is not conservative with respect to the Allowable Value, the channel shall be declared inoperable.

Prior to returning a channel to service, the instrument channel setpoint shall be calibrated to a value that is within the acceptable As Left tolerance of the setpoint; otherwise, the channel shall be declared inoperable.

The nominal Trip Setpoint shall be specified on design output documentation which is incorporated by reference in the Updated Final Safety Analysis Report. The methodology used to determine the nominal Trip Setpoint, the predefined As Found Tolerance, and the As Left Tolerance band, and a listing of the setpoint design output documentation shall be specified in Chapter 7 of the Updated Final Safety Analysis Report.

### 3.3 INSTRUMENTATION

#### 3.3.2.2 Feedwater and Main Turbine High Water Level Trip Instrumentation

LCO 3.3.2.2 Two channels of feedwater and main turbine high water level trip instrumentation per trip system shall be OPERABLE.

APPLICABILITY: THERMAL POWER  $\geq$  25% RTP.

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#### ACTIONS

#### NOTE

Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more feedwater and main turbine high water level trip channels inoperable, in one trip system.	A.1 Place channel(s) in trip.	7 days
B. One or more feedwater and main turbine high water level trip channels inoperable in each trip system.	B.1 Restore feedwater and main turbine high water level trip capability.	2 hours
C. Required Action and associated Completion Time not met.	C.1 Reduce THERMAL POWER to < 25% RTP.	4 hours

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### 3.3 INSTRUMENTATION

#### 3.3.4.1 End of Cycle Recirculation Pump Trip (EOC-RPT) Instrumentation

- LCO 3.3.4.1      a. Two channels per trip system for each EOC-RPT instrumentation Function listed below shall be OPERABLE:
1. Turbine Stop Valve (TSV) - Closure; and
  2. Turbine Control Valve (TCV) Fast Closure, Trip Oil Pressure - Low.

OR

- b. LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," limits for inoperable EOC-RPT as specified in the COLR are made applicable; and
- c. LCO 3.2.3, "LINEAR HEAT GENERATION RATE (LHGR)," limits for inoperable EOC-RPT as specified in the COLR are made applicable.

APPLICABILITY: THERMAL POWER  $\geq$  30% RTP.

26