(4) AmerGen Energy Company, LLC, 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;

(5) AmerGen Energy Company, LLC, 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 instrument calibration or associated with radioactive apparatus or components; and

(6) AmerGen Energy Company, LLC, pursuant to the Act and 10 CFR Parts 30, 40, 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 license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and 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

AmerGen Energy Company, LLC is authorized to operate the facility at reactor core power levels not in excess of 3473 megawatts thermal (100 percent rated power) in accordance with the conditions specified herein.

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 149, are hereby incorporated into this license. AmerGen Energy Company, LLC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

1.1 Definitions (continued)

| | |
|---|---|
| MINIMUM CRITICAL POWER RATIO (MCPR) | The MCPR shall be the smallest critical power ratio (CPR) that exists in the core for each class of fuel. The CPR is that power in the assembly that is calculated by application of the appropriate correlation(s) to cause some point in the assembly to experience boiling transition, divided by the actual assembly operating power. |
| MODE | A MODE shall correspond to any one inclusive combination of mode switch position, average reactor coolant temperature, and reactor vessel head closure bolt tensioning specified in Table 1.1-1 with fuel in the reactor vessel. |
| 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 3473 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. |

(continued)

# 2.0 SAFETY LIMITS (SLs)

## 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 ≤ 21.6% RTP.

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

MCPR shall be ≥ 1.09 for two recirculation loop operation or ≥ 1.12 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 ≤ 1325 psig.

## 2.2 SL Violations

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

2.2.1 Within 1 hour, notify the NRC Operations Center, in accordance with 10 CFR 50.72.

2.2.2 Within 2 hours:

2.2.2.1 Restore compliance with all SLs; and

2.2.2.2 Insert all insertable control rods.

2.2.3 Within 24 hours, notify the plant manager and the corporate executive responsible for overall plant nuclear safety.

(continued)

ACTIONS (Continued)

| CONDITION | REQUIRED ACTION | | COMPLETION TIME |
|---|---|---|---|
| B. Two or more withdrawn control rods stuck. | B.1 | Be in MODE 3. | 12 hours |
| C. One or more control rods inoperable for reasons other than Condition A or B. | C.1 | --------NOTE---------<br>Inoperable control rods may be bypassed in RACS in accordance with SR 3.3.2.1.9, if required, to allow insertion of inoperable control rod and continued operation.<br>----------<br>Fully insert inoperable control rod. | 3 hours |
| | AND | | |
| | C.2 | Disarm the associated CRD. | 4 hours |
| D. ---------NOTE---------<br>Not applicable when THERMAL POWER > 16.7% RTP.<br>----------<br>Two or more inoperable control rods not in compliance with banked position withdrawal sequence (BPWS) and not separated by two or more OPERABLE control rods. | D.1 | Restore compliance with BPWS. | 4 hours |
| | OR | | |
| | D.2 | Restore control rod to OPERABLE status. | 4 hours |

(continued)

## 3.1 REACTIVITY CONTROL SYSTEMS

### 3.1.6 Control Rod Pattern

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 ≤ 16.7% RTP.

ACTIONS

| CONDITION | REQUIRED ACTION | | COMPLETION TIME |
|---|---|---|---|
| A. One or more OPERABLE control rods not in compliance with BPWS. | A.1 | --------NOTE--------<br>Affected control rods may be bypassed in Rod Action Control System (RACS) in accordance with SR 3.3.2.1.9.<br>----------<br>Move associated control rod(s) to correct position. | 8 hours |
| | OR | | |
| | A.2 | Declare associated control rod(s) inoperable. | 8 hours |

(continued)

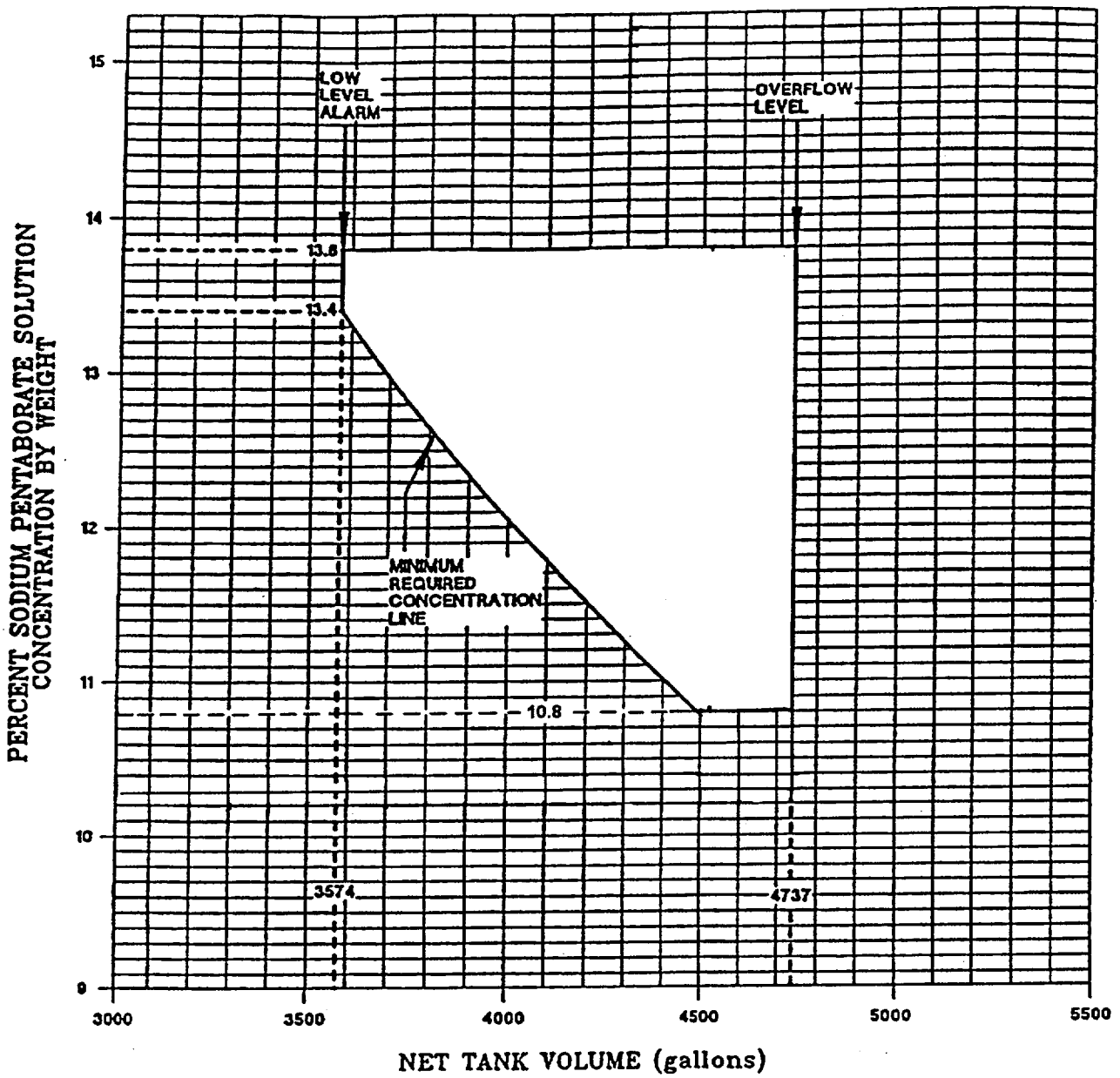


Figure 3.1.7-1 (page 1 of 1)
Weight Percent Sodium Pentaborate Solution
Concentration/Net Tank Volume Requirements

## 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 ≥ 21.6% 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 < 21.6% 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 ≥ 21.6% RTP<br>AND<br>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 ≥ 21.6% RTP.

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 < 21.6% RTP. | 4 hours |

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 ≥ 21.6% RTP<br><br>AND<br><br>24 hours thereafter |

## 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 ≥ 21.6% RTP.

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 < 21.6% RTP. | 4 hours |

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 ≥ 21.6% RTP<br><br>AND<br><br>24 hours thereafter |

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| E. As required by Required Action D.1 and referenced in Table 3.3.1.1-1. | E.1 Reduce THERMAL POWER to < 33.3% RTP. | 8 hours |
| F. As required by Required Action D.1 and referenced in Table 3.3.1.1-1. | F.1 Reduce THERMAL POWER to < 21.6% RTP. | 8 hours |
| G. As required by Required Action D.1 and referenced in Table 3.3.1.1-1. | G.1 Be in MODE 2. | 8 hours |
| H. As required by Required Action D.1 and referenced in Table 3.3.1.1-1. | H.1 Be in MODE 3. | 12 hours |
| I. As required by Required Action D.1 and referenced in Table 3.3.1.1-1. | I.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. | 12 hours |
| SR 3.3.1.1.2 | ----------NOTE----------<br>Not required to be performed until 12 hours after THERMAL POWER ≥ 21.6% RTP.<br>----------<br>Verify the absolute difference between the average power range monitor (APRM) channels and the calculated power ≤ 2% RTP while operating at ≥ 21.6% RTP. | 7 days |
| SR 3.3.1.1.3 | Adjust the channel to conform to a calibrated flow signal. | 7 days |
| SR 3.3.1.1.4 | ----------NOTE----------<br>Not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2.<br>----------<br>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 $\geq$ 33.3% RTP. | 18 months |
| SR 3.3.1.1.17 | ----------NOTES----------<br>1. Neutron detectors are excluded.<br>2. For Functions 3, 4, and 5 in Table 3.3.1.1-1, the channel sensors are excluded.<br>3. The STAGGERED TEST BASIS Frequency for each Function shall be determined on a per channel basis.<br>----------<br>Verify the RPS RESPONSE TIME is within limits. | 18 months on a STAGGERED TEST BASIS |

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

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER FUNCTION | CONDITIONS REFERENCED FROM REQUIRED ACTION D.1 | SURVEILLANCE REQUIREMENTS | ALLOWABLE VALUE |
|---|---|---|---|---|---|
| 1. Intermediate Range Monitors | | | | | |
| a. Neutron Flux-High | 2 | 4 | H | SR 3.3.1.1.1<br>SR 3.3.1.1.4<br>SR 3.3.1.1.6<br>SR 3.3.1.1.7<br>SR 3.3.1.1.13<br>SR 3.3.1.1.15 | ≤ 122/125 divisions of full scale |
| | 5[a] | 4 | I | SR 3.3.1.1.1<br>SR 3.3.1.1.5<br>SR 3.3.1.1.13<br>SR 3.3.1.1.15 | ≤122/125 divisions of full scale |
| b. Inop | 2 | 4 | H | SR 3.3.1.1.4<br>SR 3.3.1.1.15 | NA |
| | 5[a] | 4 | I | SR 3.3.1.1.5<br>SR 3.3.1.1.15 | NA |
| 2. Average Power Range Monitors | | | | | |
| a. Neutron Flux-High, Setdown | 2 | 4 | H | SR 3.3.1.1.1<br>SR 3.3.1.1.4<br>SR 3.3.1.1.7<br>SR 3.3.1.1.8<br>SR 3.3.1.1.11<br>SR 3.3.1.1.15 | ≤ 20% RTP |
| b. Flow Biased Simulated Thermal Power - High | 1 | 4 | G | SR 3.3.1.1.1<br>SR 3.3.1.1.2<br>SR 3.3.1.1.3<br>SR 3.3.1.1.8<br>SR 3.3.1.1.9<br>SR 3.3.1.1.11<br>SR 3.3.1.1.14<br>SR 3.3.1.1.15<br>SR 3.3.1.1.17 | ≤0.55 W + 62% RTP and ≤ 113% RTP[b] |
| c. Fixed Neutron Flux - High | 1 | 4 | G | SR 3.3.1.1.1<br>SR 3.3.1.1.2<br>SR 3.3.1.1.8<br>SR 3.3.1.1.9<br>SR 3.3.1.1.11<br>SR 3.3.1.1.15<br>SR 3.3.1.1.17 | ≤ 120% RTP |
| d. Inop | 1,2 | 4 | H | SR 3.3.1.1.8<br>SR 3.3.1.1.9<br>SR 3.3.1.1.15 | NA |

(continued)

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

(b) Allowable Value is ≤ 0.55 (W-8) + 42.5% RTP when reset for single loop operation per LCO 3.4.1, "Recirculation Loops Operating."

Table 3.3.1.1-1 (page 2 of 3)
Reactor Protection System Instrumentation

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER FUNCTION | CONDITIONS REFERENCED FROM REQUIRED ACTION D.1 | SURVEILLANCE REQUIREMENTS | ALLOWABLE VALUE |
|---|---|---|---|---|---|
| 3. Reactor Vessel Steam Dome Pressure - High | 1,2 | 4 | H | SR 3.3.1.1.1<br>SR 3.3.1.1.9<br>SR 3.3.1.1.10<br>SR 3.3.1.1.13<br>SR 3.3.1.1.15<br>SR 3.3.1.1.17 | ≤ 1080 psig |
| 4. Reactor Vessel Water Level-Low, Level 3 | 1,2 | 4 | H | SR 3.3.1.1.1<br>SR 3.3.1.1.9<br>SR 3.3.1.1.10<br>SR 3.3.1.1.13<br>SR 3.3.1.1.15<br>SR 3.3.1.1.17 | ≥ 8.3 inches |
| 5. Reactor Vessel Water Level-High, Level 8 | ≥ 21.6 % RTP | 4 | F | SR 3.3.1.1.1<br>SR 3.3.1.1.9<br>SR 3.3.1.1.10<br>SR 3.3.1.1.13<br>SR 3.3.1.1.15<br>SR 3.3.1.1.17 | ≤ 52.6 inches |
| 6. Main Steam Isolation Valve-Closure | 1 | 4 | G | SR 3.3.1.1.9<br>SR 3.3.1.1.13<br>SR 3.3.1.1.15<br>SR 3.3.1.1.17 | ≤ 12% closed |
| 7. Drywell Pressure-High | 1,2 | 4 | H | SR 3.3.1.1.1<br>SR 3.3.1.1.9<br>SR 3.3.1.1.10<br>SR 3.3.1.1.13<br>SR 3.3.1.1.15 | ≤ 1.88 psig |
| 8. Scram Discharge Volume Water Level-High | | | | | |
| a. Transmitter | 1,2 | 4 | H | SR 3.3.1.1.1<br>SR 3.3.1.1.9<br>SR 3.3.1.1.10<br>SR 3.3.1.1.13<br>SR 3.3.1.1.15 | ≤ 40-1/4 inches for 1C11-N601A,B and ≤ 39-3/16 inches for 1C11-N601C,D |
| | 5(a) | 4 | I | SR 3.3.1.1.1<br>SR 3.3.1.1.9<br>SR 3.3.1.1.10<br>SR 3.3.1.1.13<br>SR 3.3.1.1.15 | ≤ 40-1/4 inches for 1C11-N601A,B and ≤ 39-3/16 inches for 1C11-N601C,D |

(continued)

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

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

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER FUNCTION | CONDITIONS REFERENCED FROM REQUIRED ACTION D.1 | SURVEILLANCE REQUIREMENTS | ALLOWABLE VALUE |
|---|---|---|---|---|---|
| 8. Scram Discharge Volume Water Level-High (continued) | | | | | |
| b. Float Switch | 1,2 | 4 | H | SR 3.3.1.1.9<br>SR 3.3.1.1.13<br>SR 3.3.1.1.15 | ≤ 763 ft. 3-1/4 inches msl for 1C11-N013A,B and ≤ 763 ft. 1-11/16 inches msl for 1C11-N013C,D |
| | 5[a] | 4 | I | SR 3.3.1.1.9<br>SR 3.3.1.1.13<br>SR 3.3.1.1.15 | ≤ 763 ft. 3-1/4 inches msl for 1C11-N013A,B and ≤ 763 ft. 1-11/16 inches msl for 1C11-N013C,D |
| 9. Turbine Stop Valve Closure | ≥ 33.3% RTP | 4 | E | SR 3.3.1.1.9<br>SR 3.3.1.1.13<br>SR 3.3.1.1.15<br>SR 3.3.1.1.16<br>SR 3.3.1.1.17 | ≤ 7% closed |
| 10. Turbine Control Valve Fast Closure, Trip Oil Pressure-Low | ≥ 33.3% RTP | 4 | E | SR 3.3.1.1.9<br>SR 3.3.1.1.13<br>SR 3.3.1.1.15<br>SR 3.3.1.1.16<br>SR 3.3.1.1.17 | ≥ 465 psig |
| 11. Reactor Mode Switch-Shutdown Position | 1,2 | 4 | H | SR 3.3.1.1.12<br>SR 3.3.1.1.15 | NA |
| | 5[a] | 4 | I | SR 3.3.1.1.12<br>SR 3.3.1.1.15 | NA |
| 12. Manual Scram | 1,2 | 4 | H | SR 3.3.1.1.9<br>SR 3.3.1.1.15 | NA |
| | 5[a] | 4 | I | SR 3.3.1.1.9<br>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

----------NOTES----------

1. Refer to Table 3.3.2.1-1 to determine which SRs apply for each Control Rod Block 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 control rod block capability.

---

| SURVEILLANCE | | FREQUENCY |
|---|---|---|
| SR 3.3.2.1.1 | ----------NOTE----------<br>Not required to be performed until 1 hour after THERMAL POWER is greater than the RWL high power setpoint (HPSP)<br>----------<br>Perform CHANNEL FUNCTIONAL TEST. | 92 days |
| SR 3.3.2.1.2 | ----------NOTE----------<br>Not required to be performed until 1 hour after THERMAL POWER is > 29.2% RTP and less than or equal to the RWL HPSP.<br>----------<br>Perform CHANNEL FUNCTIONAL TEST. | 92 days |
| SR 3.3.2.1.3 | ----------NOTE----------<br>Not required to be performed until 1 hour after any control rod is withdrawn in MODE 2.<br>----------<br>Perform CHANNEL FUNCTIONAL TEST. | 92 days |

(continued)

SURVEILLANCE REQUIREMENTS (continued)

| | SURVEILLANCE | FREQUENCY |
|---|---|---|
| SR 3.3.2.1.4 | ----------NOTE----------<br>Not required to be performed until 1 hour after THERMAL POWER is ≤ 16.7% RTP in MODE 1.<br>----------<br>Perform CHANNEL FUNCTIONAL TEST. | 92 days |
| SR 3.3.2.1.5 | Calibrate the low power setpoint analog trip modules. The Allowable Value shall be > 16.7% RTP and ≤ 29.2% RTP. | 92 days |
| SR 3.3.2.1.6 | Verify the RWL high power Function is not bypassed when THERMAL POWER is > 70% RTP. | 92 days |
| SR 3.3.2.1.7 | Perform CHANNEL CALIBRATION. | 18 months |
| SR 3.3.2.1.8 | ----------NOTE----------<br>Not required to be performed until 1 hour after reactor mode switch is in the shutdown position.<br>----------<br>Perform CHANNEL FUNCTIONAL TEST. | 18 months |
| SR 3.3.2.1.9 | Verify the bypassing and movement of control rods required to be bypassed in Rod Action Control System (RACS) is in conformance with applicable analyses by a second licensed operator or other qualified member of the technical staff. | Prior to and during the movement of control rods bypassed in RACS |

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 |
|---|---|---|---|
| 1. Rod Pattern Control System | | | |
| a. Rod withdrawal limiter | (a) | 2 | SR 3.3.2.1.1<br>SR 3.3.2.1.6<br>SR 3.3.2.1.9 |
| | (b) | 2 | SR 3.3.2.1.2<br>SR 3.3.2.1.5<br>SR 3.3.2.1.7<br>SR 3.3.2.1.9 |
| b. Rod pattern controller | 1[(c)],2 | 2 | SR 3.3.2.1.3<br>SR 3.3.2.1.4<br>SR 3.3.2.1.5<br>SR 3.3.2.1.7<br>SR 3.3.2.1.9 |
| 2. Reactor Mode Switch-Shutdown Position | (d) | 2 | SR 3.3.2.1.8 |

(a) THERMAL POWER greater than the RWL HPSP.

(b) THERMAL POWER ≥ 29.2% RTP and less than or equal to the RWL HPSP.

(c) With THERMAL POWER ≤ 16.7% RTP.

(d) Reactor mode switch in the shutdown position.

3.3 INSTRUMENTATION

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

LCO 3.3.4.1 Four channels for each EOC-RPT instrumentation Function listed below shall be OPERABLE:

a. Turbine Stop Valve (TSV) Closure; and

b. Turbine Control Valve (TCV) Fast Closure, Trip Oil Pressure-Low.

APPLICABILITY: THERMAL POWER ≥ 33.3% RTP with any recirculation pump in fast speed.

ACTIONS

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

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| A. One or more Functions with one required channel inoperable. | A.1 Restore channel to OPERABLE status.<br><br>OR | 48 hours |
| | A.2 ---NOTE---<br>Not applicable if inoperable channel is the result of an inoperable breaker.<br>---<br><br>Place one channel in affected Function in trip. | 48 hours |

(continued)

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| B. One or more Functions with two channels inoperable. | B.1 Place one channel in affected Function in trip. | 6 hours |
| C. One or more Functions with three or more channels inoperable. | C.1 Restore two channels in affected Function to OPERABLE status. | 2 hours |
| D. Required Action and associated Completion Time not met. | D.1 Remove the associated recirculation pump fast speed breaker from service.<br><br>OR<br><br>D.2 Reduce THERMAL POWER to < 33.3% RTP. | 8 hours<br><br><br><br>8 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 |

(continued)

SURVEILLANCE REQUIREMENTS (continued)

| | SURVEILLANCE | FREQUENCY |
|---|---|---|
| SR 3.3.4.1.2 | Perform CHANNEL CALIBRATION. The Allowable Values shall be:<br>a. TSV Closure: ≤ 7% closed; and<br>b. TCV Fast Closure, Trip Oil Pressure-Low: ≥ 465 psig. | 18 months |
| SR 3.3.4.1.3 | Perform LOGIC SYSTEM FUNCTIONAL TEST, including breaker actuation. | 18 months |
| SR 3.3.4.1.4 | Verify TSV Closure and TCV Fast Closure, Trip Oil Pressure-Low Functions are not bypassed when THERMAL POWER is ≥ 33.3% RTP. | 18 months |
| SR 3.3.4.1.5 | ----------NOTE----------<br>The STAGGERED TEST BASIS Frequency shall be determined on a per Function basis.<br>----------<br>Verify the EOC-RPT SYSTEM RESPONSE TIME is within limits. | 18 months on a STAGGERED TEST BASIS |

Table 3.3.6.1-1 (page 1 of 6)
Primary Containment and Drywell Isolation Instrumentation

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER FUNCTION | CONDITIONS REFERENCED FROM REQUIRED ACTION F.1 | SURVEILLANCE REQUIREMENTS | ALLOWABLE VALUE |
|---|---|---|---|---|---|
| 1. Main Steam Line Isolation | | | | | |
| a. Reactor Vessel Water Level-Low Low Low, Level 1 | 1,2,3 | 4 | G | SR 3.3.6.1.1<br>SR 3.3.6.1.2<br>SR 3.3.6.1.3<br>SR 3.3.6.1.5<br>SR 3.3.6.1.6<br>SR 3.3.6.1.7 | ≥ -147.7 inches |
| b. Main Steam Line Pressure-Low | 1 | 4 | H | SR 3.3.6.1.1<br>SR 3.3.6.1.2<br>SR 3.3.6.1.3<br>SR 3.3.6.1.5<br>SR 3.3.6.1.6<br>SR 3.3.6.1.7 | ≥ 837 psig |
| c. Main Steam Line Flow-High | 1,2,3 | 4 | G | SR 3.3.6.1.1<br>SR 3.3.6.1.2<br>SR 3.3.6.1.3<br>SR 3.3.6.1.5<br>SR 3.3.6.1.6<br>SR 3.3.6.1.7 | ≤ 284 psid |
| d. Condenser Vacuum-Low | 1,2[(a)],<br>3[(a)] | 4 | G | SR 3.3.6.1.1<br>SR 3.3.6.1.2<br>SR 3.3.6.1.3<br>SR 3.3.6.1.5<br>SR 3.3.6.1.6 | ≥ 7.6 inches Hg vacuum |
| e. Main Steam Tunnel Temperature-High | 1,2,3 | 4 | G | SR 3.3.6.1.1<br>SR 3.3.6.1.2<br>SR 3.3.6.1.5<br>SR 3.3.6.1.6 | ≤ 171°F |
| f. Main Steam Line Turbine Building Temperature-High | 1,2,3 | 4 | G | SR 3.3.6.1.1<br>SR 3.3.6.1.2<br>SR 3.3.6.1.5<br>SR 3.3.6.1.6 | Modules 1-4<br>≤ 142°F,<br>Module 5<br>≤ 150°F |
| g. Manual Initiation | 1,2,3 | 4 | J | SR 3.3.6.1.6 | NA |

(continued)

(a) With any turbine stop valve not closed.

## 3.4 REACTOR COOLANT SYSTEM (RCS)

### 3.4.1 Recirculation Loops Operating

LCO 3.4.1 A. Two recirculation loops shall be in operation with:

1. Matched flows; and
2. Total core flow and THERMAL POWER within limits.

OR

B. One recirculation loop shall be in operation with:

1. THERMAL POWER ≤ 58% RTP;
2. Total core flow and THERMAL POWER within limits;
3. Required limits modified for single recirculation loop operation as specified in the COLR; and
4. LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," Function 2.b (Average Power Range Monitors Flow Biased Simulated Thermal Power-High), Allowable Value of Table 3.3.1.1-1 reset for single loop operation.

----------NOTE----------
Required limit and setpoint modifications for single recirculation loop operation may be delayed for up to 12 hours after transition from two recirculation loop operation to single recirculation loop operation.
---

APPLICABILITY: MODES 1 and 2.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| A. Recirculation loop jet pump flow mismatch not within limits. | A.1 Shut down one recirculation loop. | 2 hours |

(continued)

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| B. Total core flow as a function of THERMAL POWER within Region A or B of Figure 3.4.1-1. | B.1 Determine Average Power Range Monitor (APRM) and Local Power Range Monitor (LPRM) neutron flux noise levels. | Once per 8 hours<br>AND<br>30 minutes after an increase of ≥ 5% RTP |
| C. Total core flow as a function of THERMAL POWER within Region B of Figure 3.4.1-1.<br><br>AND<br><br>APRM or LPRM neutron flux noise level > 3 times established baseline noise level. | C.1 Restore APRM and LPRM neutron flux noise level to ≤ 3 times established baseline levels. | 2 hours |
| D. Total core flow as a function of THERMAL POWER within Region A of Figure 3.4.1-1. | D.1 Restore total core flow as a function of THERMAL POWER to within Region B or C of Figure 3.4.1-1. | 4 hours |
| E. THERMAL POWER > 58% RTP during single recirculation loop operation. | E.1 Reduce THERMAL POWER to ≤ 58% RTP. | 4 hours |

(continued)

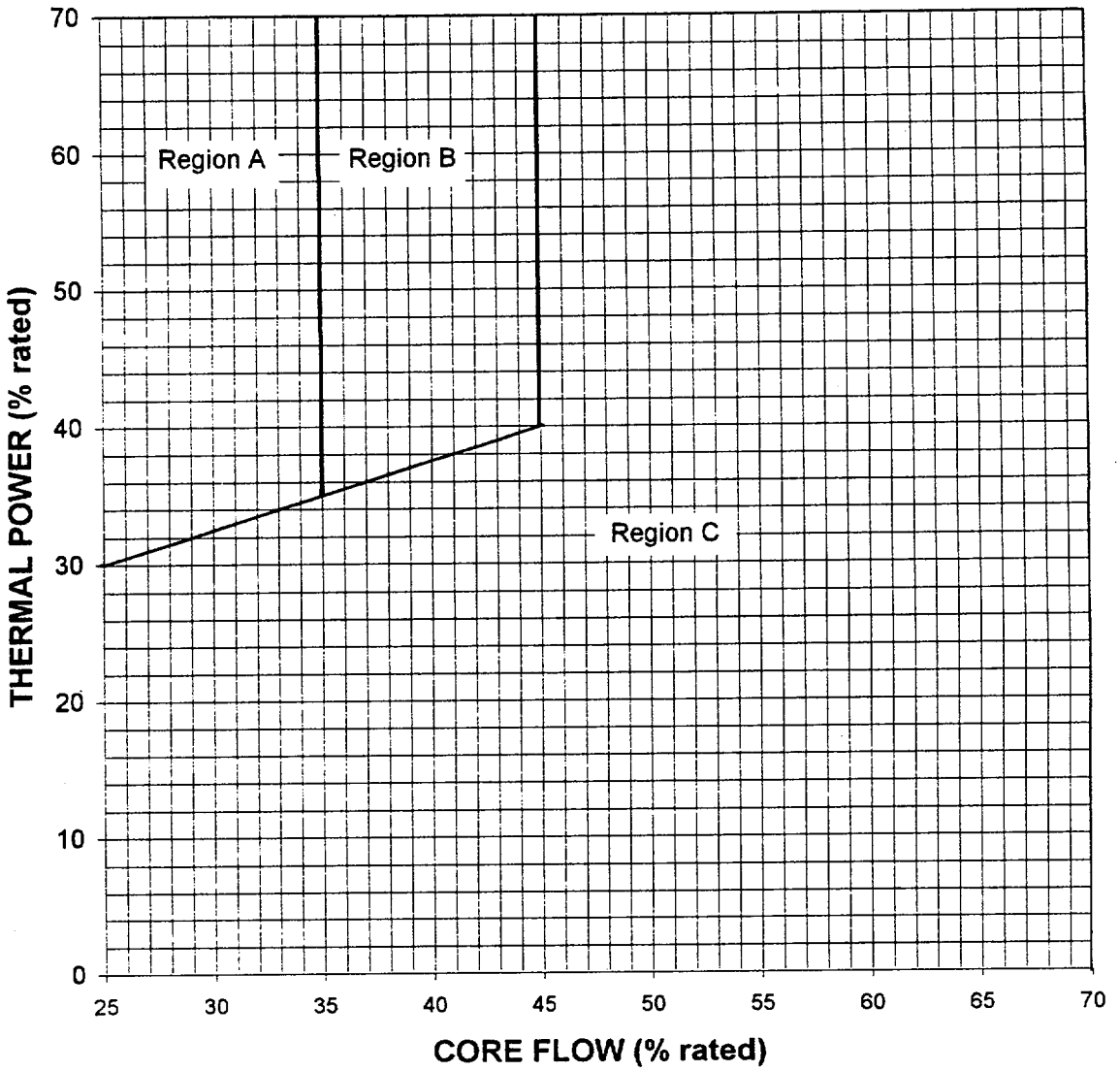


Figure 3.4.1-1 (page 1 of 1)
Thermal Power/Core Flow Stability Regions

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|---|
| SR 3.4.3.1 ----------NOTES----------<br>1. Not required to be performed until 4 hours after associated recirculation loop is in operation.<br>2. Not required to be performed until 24 hours after > 21.6% RTP.<br>----------<br>Verify at least two of the following criteria (a, b, and c) are satisfied for each operating recirculation loop:<br>a. Recirculation loop drive flow versus flow control valve position differs by ≤ 10% from established patterns.<br>b. Recirculation loop drive flow versus total core flow differs by ≤ 10% from established patterns.<br>c. Each jet pump diffuser to lower plenum differential pressure differs by ≤ 20% from established patterns, or each jet pump flow differs by ≤ 10% from established patterns. | 24 hours |

SURVEILLANCE REQUIREMENTS (continued)

| SURVEILLANCE | | FREQUENCY |
|---|---|---|
| SR 3.4.11.8 | ----------NOTE----------<br>Only required to be met in single loop operation during increases in THERMAL POWER or recirculation loop flow with THERMAL POWER ≤ 25% of RTP or recirculation loop flow in the operating loop ≤ 30% of rated flow.<br>----------<br>Verify the difference between the bottom head coolant temperature and the RPV coolant temperature is ≤ 100°F. | Once within 15 minutes prior to an increase in THERMAL POWER or an increase in loop flow |
| SR 3.4.11.9 | ----------NOTE----------<br>Only required to be met in single loop operation during increases in THERMAL POWER or recirculation loop flow with THERMAL POWER ≤ 25% of RTP or recirculation loop flow in the operating loop ≤ 30% of rated flow, and with the idle recirculation loop not isolated from the RPV.<br>----------<br>Verify the difference between the reactor coolant temperature in the recirculation loop not in operation and the RPV coolant temperature is ≤ 50°F. | Once within 15 minutes prior to an increase in THERMAL POWER or an increase in loop flow |

## 3.7 PLANT SYSTEMS

### 3.7.6 Main Turbine Bypass System

LCO 3.7.6 The Main Turbine Bypass System shall be OPERABLE.

APPLICABILITY: THERMAL POWER ≥ 21.6% RTP.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| A. Main Turbine Bypass System inoperable. | A.1 Restore Main Turbine Bypass System to OPERABLE status. | 2 hours |
| B. Required Action and associated Completion Time not met. | B.1 Reduce THERMAL POWER to < 21.6% RTP. | 4 hours |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|---|---|---|
| SR 3.7.6.1 | Verify one complete cycle of each main turbine bypass valve. | 31 days |
| SR 3.7.6.2 | Perform a system functional test. | 18 months |
| SR 3.7.6.3 | Verify the TURBINE BYPASS SYSTEM RESPONSE TIME is within limits. | 18 months |