3/4.3 INSTRUMENTATION

3/4.3.1 REACTOR PROTECTION SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.1 As a minimum, the reactor protection system instrumentation channels shown in Table 3.3.1-1 shall be OPERABLE* with the REACTOR PROTECTION SYSTEM RESPONSE TIME as shown in Table 3.3.1-2.

APPLICABILITY: As shown in Table 3.3.1-1.

ACTION:

a. For all functional units of Table 3.3.1-1 other than Reactor Mode Switch Shutdown Position.

   1. With one of the four channels required for any Trip Function inoperable, operation may continue provided the inoperable channel is placed in the tripped condition within 48 hours. The provisions of Specification 3.0.4 are not applicable.

   2. With two of the four channels required for any Trip Function inoperable, place one channel in the tripped condition within six hours provided no tripped channel for that Trip Function already exists. The provisions of Specification 3.0.4 are not applicable.

   3. With three of the four channels required for any Trip Function inoperable, take the ACTION required by Table 3.3.1-1.

b. For Reactor Mode Switch Shutdown Position take the ACTION as shown in Table 3.3.1-1.

SURVEILLANCE REQUIREMENTS

4.3.1.1 Each reactor protection system instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations for the OPERATIONAL CONDITIONS and at the frequencies shown in Table 4.3.1.1-1.

4.3.1.2 LOGIC SYSTEM FUNCTIONAL TESTS shall be performed at least once per 18 months. Reactor protection system divisional logic and portions of the channel coincident logic shall be manually tested independent of the SELF TEST SYSTEM during each refueling outage such that all trip functions are tested at least once every four fuel cycles.

*A channel may be placed in an inoperable status for up to 6 hours for required surveillance provided at least two OPERABLE channels are monitoring that parameter.

No changes. Provided for continuity only.

INSTRUMENTATION

REACTOR PROTECTION SYSTEM INSTRUMENTATION

SURVEILLANCE REQUIREMENTS (Continued)

4.3.1.3 The REACTOR PROTECTION SYSTEM RESPONSE TIME of each reactor trip functional unit shown in Table 3.3.1-2 shall be demonstrated to be within its limit at least once per 18 months. Each test shall include at least two logic trains such that all logic trains are tested at least once per 36 months and one channel per trip function such that all channels are tested at least once every N times 18 months where N is the total number of redundant channels in a specific reactor trip function.

4.3.1.4 The provisions of Specification 4.0.4 are not applicable to the Intermediate Range Monitor Surveillance Requirements for entry into OPERATIONAL CONDITION 2 or 3 from Operational Condition 1, provided the surveillances are performed within 12 hours after entering OPERATIONAL CONDITION 2 or 3.

No changes. Provided for continuity only.

INSTRUMENTATION

3/4.3.2 CONTAINMENT AND REACTOR VESSEL ISOLATION CONTROL SYSTEM

LIMITING CONDITION FOR OPERATION

3.3.2 The containment and reactor vessel isolation control system (CRVICS) channels shown in Table 3.3.2-1 shall be OPERABLE* with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.2-2 and with ISOLATION SYSTEM RESPONSE TIME as shown in Table 3.3.2-3.

APPLICABILITY: As shown in Table 3.3.2-1.

ACTION:

a. With a CRVICS channel trip setpoint less conservative than the value shown in the Allowable Value column of Table 3.3.2-2, declare the channel inoperable until the channel is restored to OPERABLE status with its trip setpoint adjusted consistent with the Trip Setpoint value.

b. For CRVICS Main Steam Line Isolation Trip Functions:

   1. With one of the four channels required for any Trip Function inoperable, operation may continue provided the inoperable channel is placed in the tripped condition within 48 hours. The provisions of Specification 3.0.4 are not applicable.

   2. With two of the four channels required for any Trip Function inoperable, place one channel in the tripped condition within six hours provided no tripped channel for that Trip Function already exists. The provisions of Specification 3.0.4 are not applicable.

   3. With three or four channels required for any Trip Function inoperable, take the ACTION required by Table 3.3.2-1.

c. For other CRVICS Isolation Trip Functions:

   1. With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement for one trip system, place the inoperable channel(s) and/or that trip system in the tripped condition** within 24 hours. The provisions of Specification 3.0.4 are not applicable.

---

*For CRVICS Main Steam Line Isolation Trip Function, a channel may be placed in an inoperable status for up to 6 hours for required surveillance provided at least two OPERABLE channels are monitoring that parameter.

For other CRVICS Isolation Trip Function, a channel may be placed in an inoperable status for up to 6 hours for required surveillance provided the requirements of Table 3.3.2-1 are fulfilled.

**An inoperable channel need not be placed in the tripped condition where this would cause the Trip Function to occur. In these cases, the inoperable channel shall be restored to OPERABLE status within 6 hours or the ACTION required by Table 3.3.2-1 for that Trip Function shall be taken.

INSTRUMENTATION

CONTAINMENT AND REACTOR VESSEL ISOLATION CONTROL SYSTEM

LIMITING CONDITION FOR OPERATION (Continued)

3.3.2 ACTION (Continued):

2. With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement for both trip systems, place at least one trip system* in the tripped condition within 1 hour and take the ACTION required by Table 3.3.2-1.

SURVEILLANCE REQUIREMENTS

4.3.2.1 Each CRVICS channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations for the OPERATIONAL CONDITIONS and at the frequencies shown in Table 4.3.2.1-1.

4.3.2.2 LOGIC SYSTEM FUNCTIONAL TESTS shall be performed at least once per 18 months. CRVICS main steam line isolation divisional logic and portions of the channel coincident logic shall be manually tested independent of the SELF TEST SYSTEM during each refueling outage. Each of the two trip systems or divisions of the CRVICS trip system logic shall be alternately and manually tested independent of the SELF TEST SYSTEM during every other refueling outage. All manual testing shall be completed such that all trip functions are tested at least once every four fuel cycles.

4.3.2.3 The CRVICS RESPONSE TIME of each CRVICS trip function shown in Table 3.3.2-3 shall be demonstrated to be within its limit at least once per 18 months. Each test shall include at least one logic train tested at least once per 36 months, and one channel per trip function such that all channels are tested at least once every N times 18 months, where N is the total number of redundant channels in a specific CRVICS trip function.

*The trip system need not be placed in the tripped condition if this would cause the Trip Function to occur. When a trip system can be placed in the tripped condition without causing the Trip Function to occur, place the trip system with the most inoperable channels in the tripped condition; if both systems have the same number of inoperable channels, place either trip system in the tripped condition.

3/4.3.3 EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3 The emergency core cooling system (ECCS) actuation instrumentation channels shown in Table 3.3.3-1 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.3-2 and with EMERGENCY CORE COOLING SYSTEM RESPONSE TIME as shown in Table 3.3.3-3.

APPLICABILITY: As shown in Table 3.3.3-1.

ACTION:

a. With an ECCS actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Value column of Table 3.3.3-2, declare the channel inoperable until the channel is restored to OPERABLE status with its trip setpoint adjusted consistent with the Trip Setpoint value.

b. With one or more ECCS actuation instrumentation channels inoperable, take the ACTION required by Table 3.3.3-1.

c. With either ADS trip system "1" or "2" inoperable, restore the inoperable trip system to OPERABLE status within:

   1. 7 days, provided that the HPCS and RCIC systems are OPERABLE, or
   2. 72 hours, provided either the HPCS or RCIC systems are inoperable.

   Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and reduce reactor steam dome pressure to $\leq$ 100 psig within the following 24 hours.

SURVEILLANCE REQUIREMENTS

4.3.3.1 Each ECCS actuation instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations for the OPERATIONAL CONDITIONS and at the frequencies shown in Table 4.3.3.1-1.

4.3.3.2 LOGIC SYSTEM FUNCTIONAL TESTS shall be performed at least once per 18 months. The actuation system logic associated with each of the ECCS divisions shall be manually tested independent of the SELF TEST SYSTEM during alternate refueling outages such that all divisions and all trip functions are tested at least once every four fuel cycles.

4.3.3.3 The ECCS RESPONSE TIME of each ECCS trip function shown in Table 3.3.3-3 shall be demonstrated to be within the limit at least once per 18 months. Each test shall include at least one channel per trip system such that all channels are tested at least once every N times 18 months where N is the total number of redundant channels in a specific ECCS trip system.

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.4.2 The end-of-cycle recirculation pump trip (EOC-RPT) system instrumentation channels shown in Table 3.3.4.2-1 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.4.2-2 and with the END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM RESPONSE TIME as shown in Table 3.3.4.2-3.

APPLICABILITY: OPERATIONAL CONDITION 1, when THERMAL POWER is $\geq$ to 40% of RATED THERMAL POWER.

ACTION:

a. With an end-of-cycle recirculation pump trip function instrumentation channel trip setpoint less conservative than the value shown in the Allowable Value column of Table 3.3.4.2-2, declare the channel inoperable until the channel is restored to OPERABLE status with the channel setpoint adjusted consistent with the Trip Setpoint value.

b. With one of the four channels required for any Trip Function inoperable, operation may continue provided the inoperable channel is placed in the tripped condition within 48 hours. The provisions of Specification 3.0.4 are not applicable.

c. With two of the four channels required for any Trip Function inoperable, place one channel in the tripped condition within six hours provided no tripped channel for that Trip Function already exists. The provisions cf Specification 3.0.4 are not applicable.

d. With three of the four channels required for any Trip Function inoperable, reduce THERMAL POWER to less than 40% of RATED THERMAL POWER within 6 hours.

SURVEILLANCE REQUIREMENTS

4.3.4.2.1 Each end-of-cycle recirculation pump trip system instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3.4.2-1.

4.3.4.2.2 LOGIC SYSTEM FUNCTIONAL TESTS shall be performed at least once per 18 months. Divisional logic and portions of the channel coincident logic shall be manually tested independent of the SELF TEST SYSTEM during each refueling outage such that all trip functions are tested at least once every four fuel cycles.

SURVEILLANCE REQUIREMENTS (Continued)

4.3.4.2.3 The END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM RESPONSE TIME of each trip function shown in Table 3.3.4.2-3 shall be demonstrated to be within its limit at least once per 18 months. Each test shall include at least the logic of one type of channel input, turbine control valve fast closure or turbine stop valve closure, such that both types of channel inputs are tested at least once per 36 months. The measured time shall be added to the most recent breaker arc suppression time and the resulting END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM RESPONSE TIME shall be verified to be within its limits.

4.3.4.2.4 The time interval necessary for breaker arc suppression from energization of the recirculation pump circuit breaker trip coil shall be measured at least once per 60 months.

3/4.3.5 REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.5 The reactor core isolation cooling (RCIC) system actuation instrumentation channels shown in Table 3.3.5-1 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.5-2.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3 with reactor steam dome pressure greater than 150 psig.

ACTION:

a. With an RCIC system actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Value column of Table 3.3.5-2, declare the channel inoperable until the channel is restored to OPERABLE status with its trip setpoint adjusted consistent with the Trip Setpoint value.

b. With one or more RCIC system actuation instrumentation channels inoperable, take the ACTION required by Table 3.3.5-1.

SURVEILLANCE REQUIREMENTS

4.3.5.1 Each RCIC system actuation instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3.5.1-1.

4.3.5.2 LOGIC SYSTEM FUNCTIONAL TESTS shall be performed at least once per 18 months. All RCIC actuation system logic shall be manually tested independent of the SELF TEST SYSTEM such that all trip functions are tested at least once every four fuel cycles.

No changes. Provided for continuity only.

3/4.3.9 PLANT SYSTEMS ACTUATION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.9 The plant systems actuation instrumentation channels shown in Table 3.3.9-1 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.9-2.

APPLICABILITY: As shown in Table 3.3.9-1.

ACTION:

a. With a plant system actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Value column of Table 3.3.9-2, declare the channel inoperable until the channel is restored to OPERABLE status with its trip setpoint adjusted consistent with the Trip Setpoint value.

b. With one or more plant systems actuation instrumentation channels inoperable, take the ACTION required by Table 3.3.9-1.

INSTRUMENTATION

PLANT SYSTEMS ACTUATION INSTRUMENTATION

SURVEILLANCE REQUIREMENTS

4.3.9.1 Each plant system actuation instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations for the OPERATIONAL CONDITIONS and at the frequencies shown in Table 4.3.9.1-1.

4.3.9.2 LOGIC SYSTEM FUNCTIONAL TESTS shall be performed at least once per 18 months. Each trip system or division of the plant system actuation logic associated with the Nuclear System Protection System shall be manually tested independent of the SELF TEST SYSTEM during separate refueling outages such that all divisions and all trip functions are tested at least once every four fuel cycles.

No changes. Provided for continuity only.

REACTOR COOLANT SYSTEM

3/4.4.2 SAFETY VALVES

SAFETY/RELIEF VALVES

LIMITING CONDITION FOR OPERATION

3.4.2.1 The safety valve function of at least six of the following valves and the relief valve function of at least five additional valves, other than those satisfying the safety valve function requirement, shall be OPERABLE with the specified lift settings; and the acoustic monitor for each OPERABLE valve shall be OPERABLE.*

Number of Valves	Function	Setpoint** (psig)
7	Safety	1165 ± 11.6 psi
5	Safety	1180 ± 11.8 psi
4	Safety	1190 ± 11.9 psi
1	Relief	1103 ± 15.0 psi
8	Relief	1113 ± 15.0 psi
7	Relief	1123 ± 15.0 psi

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

a. With the safety and/or relief valve function of one or more of the above required safety/relief valves inoperable, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.

b. With one or more safety/relief valves stuck open, provided that suppression pool average water temperature is less than 110°F, close the stuck open safety/relief valve(s); if suppression pool average water temperature is 110°F or greater, place the reactor mode switch in the Shutdown position.

c. With one or more safety/relief valve acoustic monitor(s) inoperable, restore the inoperable monitor(s) to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

d. With either relief valve function pressure actuation trip system "A" or "B" inoperable, restore the inoperable trip system to OPERABLE status within 7 days; otherwise, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the following 24 hours.

---

* One relief valve pressure actuation channel and/or one acoustic monitor channel may be placed in an inoperable status for up to 6 hours for the purpose of performing surveillance testing in accordance with Specifications 4.4.2.1.1 and 4.4.2.1.2.

** The lift setting pressure shall correspond to ambient conditions of the valves at nominal operating temperatures and pressures.

REACTOR COOLANT SYSTEM

SAFETY/RELIEF VALVES

SURVEILLANCE REQUIREMENTS

4.4.2.1.1 The acoustic monitor for each safety/relief valve shall be demonstrated OPERABLE by performance of a:

a. CHANNEL FUNCTIONAL TEST at least once per 31 days, and a

b. CHANNEL CALIBRATION at least once per 18 months.*

4.4.2.1.2 The relief valve function pressure actuation instrumentation shall be demonstrated OPERABLE by performance of a:

a. CHANNEL FUNCTIONAL TEST, including calibration of the trip unit, at least once per 92 days.

b. CHANNEL CALIBRATION and LOGIC SYSTEM FUNCTIONAL TEST at least once per 18 months. Each of the two trip systems or divisions of the relief valve function actuation logic associated with the Nuclear System Protection System shall be manually tested independent of the SELF TEST SYSTEM during separate refueling outages such that both divisions and all channel trips are tested at least once every four fuel cycles.

*The provisions of Specification 4.0.4 are not applicable provided the surveillance is performed within 12 hours after reactor steam pressure and flow are adequate to perform the test.

REACTOR COOLANT SYSTEM

SAFETY/RELIEF VALVES LOW-LOW SET FUNCTION

LIMITING CONDITION FOR OPERATION

3.4.2.2 The low-low set function of the following reactor coolant system safety/relief valves shall be OPERABLE with the following settings*:

Valve No.	Low-Low Set Function Setpoint* (psig) ± 15 psi Open	Close
F051D	1033	926
F051C	1073	936
F047F	1113	946
F051B	1113	946
F051G	1113	946

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

a. With the low-low set function of one of the above required reactor coolant system safety/relief valves inoperable, restore the inoperable low-low set function to OPERABLE status within 14 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. With the low-low set function of more than one of the above required reactor coolant system safety/relief valves inoperable, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.

c. With either low-low set function pressure actuation trip system "A" or "B" inoperable, restore the inoperable trip system to OPERABLE status within 7 days; otherwise, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the following 24 hours.

SURVEILLANCE REQUIREMENTS

4.4.2.2 The low-low set function pressure actuation instrumentation shall be demonstrated OPERABLE by performance of a:

a. CHANNEL FUNCTIONAL TEST, including calibration of the trip unit, at least once per 92 days.

b. CHANNEL CALIBRATION and LOGIC SYSTEM FUNCTIONAL TEST at least once per 18 months. Each of the two trip systems or divisions of the low-low set function actuation logic associated with the Nuclear System Protection System shall be manually tested independent of the SELF TEST SYSTEM during separate refueling outages such that both divisions and all channel trips are tested at least once every four fuel cycles.

*One channel may be placed in an inoperable status for up to 6 hours for the purpose of performing surveillance testing in accordance with Specification 4.4.2.2.
**The lift setting pressure shall correspond to ambient conditions of the valves at nominal operating temperatures and pressures.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.3.1.1.17 ~~SR 3.3.1.1.16~~ NOTES 1. Only applicable to the portions of the logic tested by the Self Test System. 2. For the purposes of determining the STAGGERED TEST BASIS Frequency, all channels for all Functions are considered together and "n" equal four. Perform LOGIC SYSTEM FUNCTIONAL TEST independent of the Self Test System.	18 months on a STAGGERED TEST BASIS
SR 3.3.1.1.~~16~~ 17 NOTES 1. Neutron detectors are excluded. 2. The STAGGERED TEST BASIS Frequency for each Function shall be determined on a per channel basis. 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 SR 3.3.1.1.4 SR 3.3.1.1.6 SR 3.3.1.1.7 SR 3.3.1.1.13 SR 3.3.1.1.15 ~~SR 3.3.1.1.17~~	≤ 122/125 divisions of full scale
	5(a)	4	I	SR 3.3.1.1.1 SR 3.3.1.1.5 SR 3.3.1.1.13 SR 3.3.1.1.15 ~~SR 3.3.1.1.17~~	≤ 122/125 divisions of full scale
b. Inop	2	4	H	SR 3.3.1.1.4 SR 3.3.1.1.15 ~~SR 3.3.1.1.17~~	NA
	5(a)	4	I	SR 3.3.1.1.5 SR 3.3.1.1.15 ~~SR 3.3.1.1.17~~	NA
2. Average Power Range Monitors					
a. Neutron Flux – High, Setdown	2	4	H	SR 3.3.1.1.1 SR 3.3.1.1.4 SR 3.3.1.1.7 SR 3.3.1.1.8 SR 3.3.1.1.11 SR 3.3.1.1.15 ~~SR 3.3.1.1.17~~	≤ 20% RTP
b. Flow Biased Simulated Thermal Power – High	1	4	G	SR 3.3.1.1.1 SR 3.3.1.1.2 SR 3.3.1.1.3 SR 3.3.1.1.8 SR 3.3.1.1.9 SR 3.3.1.1.11 SR 3.3.1.1.14 SR 3.3.1.1.15 SR 3.3.1.1.17 ~~SR 3.3.1.1.18~~	≤ 0.66 W + 67% RTP and ≤ 113% RTP(b)

(continued)

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

(b) Allowable Value is ≤ 0.66 (W-8) + 51% 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
2. Average Power Range Monitors (continued)					
c. Fixed Neutron Flux – High	1	4	G	SR 3.3.1.1.1 SR 3.3.1.1.2 SR 3.3.1.1.8 SR 3.3.1.1.9 SR 3.3.1.1.11 SR 3.3.1.1.15 SR 3.3.1.1.17 ~~SR 3.3.1.1.18~~	≤ 120% RTP
d. Inop	1,2	4	H	SR 3.3.1.1.8 SR 3.3.1.1.9 SR 3.3.1.1.15 ~~SR 3.3.1.1.17~~	NA
3. Reactor Vessel Steam Dome Pressure – High	1,2	4	H	SR 3.3.1.1.1 SR 3.3.1.1.9 SR 3.3.1.1.10 SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.17 ~~SR 3.3.1.1.18~~	≤ 1080 psig
4. Reactor Vessel Water Level – Low, Level 3	1,2	4	H	SR 3.3.1.1.1 SR 3.3.1.1.9 SR 3.3.1.1.10 SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.17 ~~SR 3.3.1.1.18~~	≥ 8.3 inches
5. Reactor Vessel Water Level – High, Level 8	≥ 25 % RTP	4	F	SR 3.3.1.1.1 SR 3.3.1.1.9 SR 3.3.1.1.10 SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.17 ~~SR 3.3.1.1.18~~	≤ 52.6 inches
6. Main Steam Isolation Valve – Closure	1	4	G	SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.17 ~~SR 3.3.1.1.18~~	≤ 12% closed
7. Drywell Pressure – High	1,2	4	H	SR 3.3.1.1.1 SR 3.3.1.1.9 SR 3.3.1.1.10 SR 3.3.1.1.13 SR 3.3.1.1.15 ~~SR 3.3.1.1.17~~	≤ 1.88 psig

(continued)

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					
a. Transmitter	1,2	4	H	SR 3.3.1.1.1 SR 3.3.1.1.9 SR 3.3.1.1.10 SR 3.3.1.1.13 SR 3.3.1.1.15 ~~SR 3.3.1.1.17~~	≤ 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 SR 3.3.1.1.9 SR 3.3.1.1.10 SR 3.3.1.1.13 SR 3.3.1.1.15 ~~SR 3.3.1.1.17~~	≤ 40 1/4 inches for 1C11-N601A,B and ≤ 39 3/16 inches for 1C11-N601C,D
b. Float Switch	1,2	4	H	SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15 ~~SR 3.3.1.1.17~~	≤ 763 ft. 3 1/4 inches msl for 1C11-N013A,B
	5(a)	4	I	SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15 ~~SR 3.3.1.1.17~~	≤ 763 ft. 1 11/16 inches msl for 1C11-N013C,D
9. Turbine Stop Valve Closure	≥ 40% RTP	4	E	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 ~~SR 3.3.1.1.18~~	≤ 7% closed
10. Turbine Control Valve Fast Closure, Trip Oil Pressure – Low	≥ 40% RTP	4	E	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 ~~SR 3.3.1.1.18~~	≥ 465 psig
11. Reactor Mode Switch – Shutdown Position	1,2	4	H	SR 3.3.1.1.12 SR 3.3.1.1.15 ~~SR 3.3.1.1.17~~	NA
	5(a)	4	I	SR 3.3.1.1.12 SR 3.3.1.1.15 ~~SR 3.3.1.1.17~~	NA
12. Manual Scram	1,2	4	H	SR 3.3.1.1.9 SR 3.3.1.1.15 ~~SR 3.3.1.1.17~~	NA
	5(a)	4	I	SR 3.3.1.1.9 SR 3.3.1.1.15 ~~SR 3.3.1.1.17~~	NA

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

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.4.1.5	----------NOTES---------- 1. Breaker interruption time may be assumed from the most recent performance of SR 3.3.4.1.7. 2. The STAGGERED TEST BASIS Frequency shall be determined on a per Function basis. --- Verify the EOC-RPT SYSTEM RESPONSE TIME is within limits.	18 months on a STAGGERED TEST BASIS
SR 3.3.4.1.6	----------NOTES---------- 1. Only applicable to the portions of the logic tested by the Self Test System. 2. For the purposes of determining the STAGGERED TEST BASIS Frequency, all channels for all Functions are considered "n" equals four. --- Perform LOGIC SYSTEM FUNCTIONAL TEST independent of the Self Test System.	18 months on a STAGGERED TEST BASIS
SR 3.3.4.1.~~7~~ 6	Determine RPT breaker interruption time.	60 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.5.1.7	----------NOTE---------- Only applicable to the portions of the logic tested by the Self Test System. ---------- Perform LOGIC SYSTEM FUNCTIONAL TEST independent of the Self Test System.	72 months

Table 3.3.5.1-1 (page 1 of 5)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Low Pressure Coolant Injection-A (LPCI) and Low Pressure Core Spray (LPCS) Subsystems					
a. Reactor Vessel Water Level – Low Low Low, Level 1	1,2,3, 4(a),5(a)	2(b)	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6 ~~SR 3.3.5.1.7~~	≥ -147.7 inches
b. Drywell Pressure – High	1,2,3	2(b)	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6 ~~SR 3.3.5.1.7~~	≤ 1.88 psig
c. LPCI Pump A Start – Time Delay Logic Card	1,2,3, 4(a),5(a)	1	C	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 ~~SR 3.3.5.1.7~~	≥ 4.5 seconds and ≤ 5.5 seconds
d. Reactor Vessel Pressure – Low (Injection Permissive)	1,2,3	4	C	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5 ~~SR 3.3.5.1.7~~	≥ 452 psig and ≤ 478 psig
	4(a),5(a)	4	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5 ~~SR 3.3.5.1.7~~	≥ 452 psig and ≤ 478 psig
e. LPCS Pump Discharge Flow – Low (Bypass)	1,2,3, 4(a),5(a)	1	E	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5 ~~SR 3.3.5.1.7~~	≥ 750 gpm
f. LPCI Pump A Discharge Flow – Low (Bypass)	1,2,3, 4(a),5(a)	1	E	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5 ~~SR 3.3.5.1.7~~	≥ 900 gpm
g. Manual Initiation	1,2,3, 4(a),5(a)	1	C	SR 3.3.5.1.5 ~~SR 3.3.5.1.7~~	NA

(continued)

(a) When associated subsystem(s) are required to be OPERABLE.

(b) Also required to initiate the associated diesel generator.

Table 3.3.5.1-1 (page 4 of 5)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
3. High Pressure Core Spray (HPCS) System (continued)					
h. Manual Initiation	1,2,3, $4^{(a)}$, $5^{(a)}$	1	C	SR 3.3.5.1.5 ~~SR 3.3.5.1.7~~	NA
4. Automatic Depressurization System (ADS) Trip System A (Logic A and E)					
a. Reactor Vessel Water Level – Low Low Low, Level 1	1,2(d),3(d)	2	F	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5 ~~SR 3.3.5.1.7~~	≥ -147.7 inches
b. Drywell Pressure – High	1,2(d),3(d)	2	F	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5 ~~SR 3.3.5.1.7~~	≤ 1.88 psig
c. ADS Initiation Timer	1,2(d),3(d)	1	G	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 ~~SR 3.3.5.1.7~~	≤ 117 seconds
d. Reactor Vessel Water Level – Low, Level 3 (Confirmatory)	1,2(d),3(d)	1	F	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5 ~~SR 3.3.5.1.7~~	≥ 8.3 inches
e. LPCS Pump Discharge Pressure – High	1,2(d),3(d)	2	G	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5 ~~SR 3.3.5.1.7~~	≥ 125 psig
f. LPCI Pump A Discharge Pressure – High	1,2(d),3(d)	2	G	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5 ~~SR 3.3.5.1.7~~	≥ 115 psig
g. ADS Drywell Pressure Bypass Timer	1,2(d),3(d)	2	G	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 ~~SR 3.3.5.1.7~~	≤ 6.5 minutes
h. Manual Initiation	1,2(d),3(d)	2	G	SR 3.3.5.1.5 ~~SR 3.3.5.1.7~~	NA

(continued)

(d) With reactor steam dome pressure > 150 psig.

Table 3.3.5.1-1 (page 5 of 5)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
5. ADS Trip System 2 (Logic B and F) F					
a. Reactor Vessel Water Level – Low Low Low, Level 1	1,2[(d)],3[(d)]	2	F	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5 ~~SR 3.3.5.1.7~~	≥ -147.7 inches
b. Drywell Pressure – High	1,2[(d)],3[(d)]	2	F	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5 ~~SR 3.3.5.1.7~~	≤ 1.88 psig
c. ADS Initiation Timer	1,2[(d)],3[(d)]	1	G	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 ~~SR 3.3.5.1.7~~	≤ 117 seconds
d. Reactor Vessel Water Level – Low, Level 3 (Confirmatory)	1,2[(d)],3[(d)]	1	F	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5 ~~SR 3.3.5.1.7~~	≥ 8.3 inches
e. LPCI Pumps B & C Discharge Pressure – High	1,2[(d)],3[(d)]	4 2 per pump	G	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5 ~~SR 3.3.5.1.7~~	≥ 115 psig
f. ADS Drywell Pressure Bypass Timer	1,2[(d)],3[(d)]	2	G	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 ~~SR 3.3.5.1.7~~	≤ 6.5 minutes
g. Manual Initiation	1,2[(d)],3[(d)]	2	G	SR 3.3.5.1.5 ~~SR 3.3.5.1.7~~	NA

(d) With reactor steam dome pressure > 150 psig.

SURVEILLANCE REQUIREMENTS

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

1. Refer to Table 3.3.5.2-1 to determine which SRs apply for each RCIC 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 as follows: (a) for up to 6 hours for Functions 2 and 5; and (b) for up to 6 hours for Functions 1, 3, and 4 provided the associated Function maintains RCIC initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.5.2.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.5.2.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.5.2.3	Calibrate the analog trip module.	92 days
SR 3.3.5.2.4	Perform CHANNEL CALIBRATION.	18 months
SR 3.3.5.2.5	Perform LOGIC SYSTEM FUNCTIONAL TEST.	18 months
SR 3.3.5.2.6	----------NOTE---------- Only applicable to the portions of the logic tested by the Self Test System. ---------- Perform LOGIC SYSTEM FUNCTIONAL TEST independent of the Self Test System.	72 months

Table 3.3.5.2-1 (page 1 of 1)
Reactor Core Isolation Cooling System Instrumentation

FUNCTION	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Reactor Vessel Water Level – Low Low, Level 2	4	B	SR 3.3.5.2.1 SR 3.3.5.2.2 SR 3.3.5.2.3 SR 3.3.5.2.4 SR 3.3.5.2.5 ~~SR 3.3.5.2.6~~	≥ -47.7 inches
2. Reactor Vessel Water Level – High, Level 8	2	C	SR 3.3.5.2.1 SR 3.3.5.2.2 SR 3.3.5.2.3 SR 3.3.5.2.4 SR 3.3.5.2.5 ~~SR 3.3.5.2.6~~	≤ 52.6 inches
3. RCIC Storage Tank Level – Low	2	D	SR 3.3.5.2.1 SR 3.3.5.2.2 SR 3.3.5.2.3 SR 3.3.5.2.4 SR 3.3.5.2.5 ~~SR 3.3.5.2.6~~	≥ 0 inches
4. Suppression Pool Water Level – High	2	D	SR 3.3.5.2.1 SR 3.3.5.2.2 SR 3.3.5.2.3 SR 3.3.5.2.4 SR 3.3.5.2.5 ~~SR 3.3.5.2.6~~	≤ -3 inches
5. Manual Initiation	1	C	SR 3.3.5.2.5 ~~SR 3.3.5.2.6~~	NA

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.3.6.1.7 ----------NOTES---------- 1. Only applicable to the portions of the isolation Functions logic tested by the Self Test System. 2. For the purposes of determining the STAGGERED TEST BASIS Frequency for the MSL isolation Functions, all channels for all Functions are considered together and "n" equals four. ---------- Perform LOGIC SYSTEM FUNCTIONAL TEST independent of the Self Test System.	18 months on a STAGGERED TEST BASIS
SR 3.3.6.1.8 ----------NOTE---------- The STAGGERED TEST BASIS Frequency for each Function shall be determined on a per channel basis. ---------- Verify the ISOLATION SYSTEM RESPONSE TIME is within limits.	18 months on a STAGGERED TEST BASIS

Table 3.3.6.1-1 (page 1 of 8)
Primary Containment 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 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 SR 3.3.6.1.7 ~~SR 3.3.6.1.8~~	≥ -147.7 inches
b. Main Steam Line Pressure – Low	1	4	H	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 SR 3.3.6.1.7 ~~SR 3.3.6.1.8~~	≥ 837 psig
c. Main Steam Line Flow – High	1,2,3	4	G	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 SR 3.3.6.1.7 ~~SR 3.3.6.1.8~~	≤ 178 psid
d. Condenser Vacuum – Low	1,2[(a)], 3[(a)]	4	G	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≥ 7.6 inches Hg vacuum
e. Main Steam Tunnel Temperature – High	1,2,3	4	G	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≤ 171°F
f. Main Steam Tunnel Differential Temperature – High	1,2,3	4	G[(b)]	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≤ 63°F
g. Main Steam Line Turbine Building Temperature – High	1,2,3	4	G	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	Modules 1-4 ≤ 142°F Module 5 ≤ 150°F
h. Manual Initiation	1,2,3	4	J	SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	NA

(continued)

(a) With any turbine stop valve not closed.

(b) The Completion Times for Required Actions G.1 and G.2.1 may be extended to 24 hours provided at least two Function 1.e channels remain OPERABLE.

Table 3.3.6.1-1 (page 2 of 8)
Primary Containment Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION F.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
2. Primary Containment Isolation					
a. Reactor Vessel Water Level – Low Low, Level 2	1,2,3	4	K	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≥ -47.7 inches
b. Drywell Pressure – High	1,2,3	4	K	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≤ 1.88 psig
c. Reactor Vessel Water Level – Low Low, Level 2 (ECCS Divisions 1 and 2)	1,2,3	4	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≥ -47.7 inches
d. Drywell Pressure – High (ECCS Divisions 1 and 2)	1,2,3	4	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≤ 1.88 psig
e. Reactor Vessel Water Level – Low Low, Level 2 (HPCS NSPS Div III and IV)	1,2,3	4	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≥ -47.7 inches
f. Drywell Pressure – High (HPCS NSPS Div III and IV)	1,2,3	4	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≤ 1.88 psig
g. Containment Building Fuel Transfer Pool Ventilation Plenum Radiation–High	(c)	4	N	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≤ 500 mR/hr

(continued)

(c)

Table 3.3.6.1-1 (page 3 of 8)
Primary Containment Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION F.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
2. Primary Containment Isolation (continued)					
h. Containment Building Exhaust Radiation - High	1,2,3	4	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≤ 400 mR/hr
	(c)	4	N	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≤ 400 mR/hr
i. Containment Building Continuous Containment Purge (CCP) Exhaust Radiation-High	1,2,3	4	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≤ 400 mR/hr
	(c)	4	N	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≤ 400 mR/hr
j. Reactor Vessel Water Level-Low Low Low, Level 1	1,2,3	4	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≥ -147.7 inches
	(c)	4	N	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≥ -147.7 inches
k. Containment Pressure-High	(d)	2	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≤ 3.0 psid
	(e)	2	N	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≤ 3.0 psid

(continued)

(c) During CORE ALTERATIONS, movement of irradiated fuel assemblies in primary or secondary containment, or operations with a potential for draining the reactor vessel.

(d) MODES 1, 2, and 3 with the associated PCIVs not sealed closed.

(e) During CORE ALTERATIONS, movement of irradiated fuel assemblies in primary or secondary containment, or operations with a potential for draining the reactor vessel, with the associated PCIVs not sealed closed.

Table 3.3.6.1-1 (page 4 of 8)
Primary Containment Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION F.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
2. Primary Containment Isolation (continued)					
l. Manual Initiation	1,2,3	2	J	SR 3.3.6.1.6 ~~OR 3.3.6.1.7~~	NA
3. Reactor Core Isolation Cooling (RCIC) System Isolation					
a. RCIC Steam Line Flow – High	1,2,3	2	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~OR 3.3.6.1.7~~	≤ 118.5 inches water
b. RCIC Steam Line Flow – High Time Delay	1,2,3	2	I	SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~OR 3.3.6.1.7~~	≤ 13 seconds
c. RCIC Steam Supply Line Pressure – Low	1,2,3	2	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~OR 3.3.6.1.7~~	≥ 52 psig
d. RCIC Turbine Exhaust Diaphragm Pressure – High	1,2,3	4	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~OR 3.3.6.1.7~~	≤ 20 psig
e. RCIC Equipment Room Ambient Temperature – High	1,2,3	2	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~OR 3.3.6.1.7~~	≤ 207°F
f. RCIC Equipment Room Differential Temperature – High	1,2,3	2	I(f)	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~OR 3.3.6.1.7~~	≤ 43°F
g. Main Steam Line Tunnel Ambient Temperature – High	1,2,3	2	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~OR 3.3.6.1.7~~	≤ 171°F

(continued)

(f) The Completion Time for Required Action I.1 may be extended to 24 hours provided all Required Channels Per Function of the associated area's Ambient Temperature – High Function remain OPERABLE.

Table 3.3.6.1-1 (page 5 of 87)
Primary Containment Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION F.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
3. RCIC System Isolation (continued)					
h. Main Steam Line Tunnel Differential Temperature – High	1,2,3	2	I(f)	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≤ 63°F
i. Main Steam Line Tunnel Temperature Timer	1,2,3	2	I	SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≤ 28 minutes
j. RHR Heat Exchanger Ambient Temperature – High	1,2,3	2 per room	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≤ 160°F
k. RHR Heat Exchanger Differential Temperature – High	1,2,3	2 per room	I(f)	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≤ 79.6°F
l. RCIC/RHR Steam Line Flow – High	1,2,3	2	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≤ 188 inches water
m. Drywell Pressure – High	1,2,3	2	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≤ 1.88 psig
n. Manual Initiation	1,2,3	2	J	SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	NA
4. Reactor Water Cleanup (RWCU) System Isolation					
a. Differential Flow – High	1,2,3	2	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≤ 66.1 gpm

(continued)

(f) The Completion Time for Required Action I.1 may be extended to 24 hours provided all Required Channels Per Function of the associated area's Ambient Temperature – High Function remain OPERABLE.

Table 3.3.6.1-1 (page 6 of 8)
~~PCIV Function of the associated Containment~~ Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION F.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
4. RWCU System Isolation (continued)					
b. Differential Flow – Timer	1,2,3	2	I	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≤ 47 seconds
c. RWCU Heat Exchanger Equipment Room Temperature – High	1,2,3	2 per room	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≤ 205°F
d. RWCU Heat Exchanger Equipment Room Differential Temperature – High	1,2,3	2 per room	I(f)	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≤ 63°F
e. RWCU Pump Rooms Temperature – High	1,2,3	2 per room	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≤ 202°F
f. RWCU Pump Rooms Differential Temperature – High	1,2,3	2 per room	I(f)	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≤ 63°F
g. Main Steam Line Tunnel Ambient Temperature – High	1,2,3	2	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≤ 171°F
h. Main Steam Line Tunnel Differential Temperature – High	1,2,3	2	I(f)	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≤ 63°F

(continued)

(c) During CORE ALTERATIONS, movement of irradiated fuel assemblies in primary or secondary containment, or operations with a potential for draining the reactor vessel.

(f) The Completion Time for Required Action I.1 may be extended to 24 hours provided all Required Channels Per Function of the associated area's Ambient Temperature – High Function remain OPERABLE.

Table 3.3.6.1-1 (page 7 of 8)
Primary Containment Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION F.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
4. RWCU System Isolation (continued)					
i. Reactor Vessel Water Level – Low Low, Level 2	1,2,3	4	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~OR 3.3.6.1.11~~	≥ -47.7 inches
	(c)	4	N	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~OR 3.3.6.1.7~~	≥ -47.7 inches
j. Standby Liquid Control System Initiation	1,2	2	L	SR 3.3.6.1.6 ~~OR 3.3.6.1.7~~	N/A
k. Manual Initiation	1,2,3	2	J	SR 3.3.6.1.6 ~~OR 3.3.6.1.7~~	N/A
	(c)	2	N	SR 3.3.6.1.6 ~~OR 3.3.6.1.7~~	N/A
5. RHR System Isolation					
a. RHR Heat Exchanger Ambient Temperature – High	1,2,3	2 per room	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~OR 3.3.6.1.7~~	≤ 160°F
b. RHR Heat Exchanger Differential Temperature – High	1,2,3	2 per room	I(f)	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~OR 3.3.6.1.7~~	≤ 79.6°F

(continued)

(c) During CORE ALTERATIONS, movement of irradiated fuel assemblies in primary or secondary containment, or operations with a potential for draining the reactor vessel.

(f) The Completion Time for Required Action I.1 may be extended to 24 hours provided all Required Channels Per Function of the associated area's Ambient Temperature – High Function remain OPERABLE.

Table 3.3.6.1-1 (page 8 of 8)
Primary Containment Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION F.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
5. RHR System Isolation (continued)					
c. Reactor Vessel Water Level - Low, Level 3	1,2,3(h)	4	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≥ 8.3 inches
d. Reactor Vessel Water Level - Low, Level 3	3(i),4,5	4(g)	M	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≥ 8.3 inches
e. Reactor Vessel Water Level - Low Low Low, Level 1	1,2,3	4	I	SR 3.3.6.1.1 SR 3.3.6.1.2 ~~SR~~ 3.3.6.1.3 → SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≥ -147.7 inches
f. Reactor Vessel Pressure - High	1,2,3	4	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≤ 150 psig
g. Drywell Pressure - High	1,2,3	4	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	≤ 1.88 psig
h. Manual Initiation	1,2,3	2	J	SR 3.3.6.1.6 ~~SR 3.3.6.1.7~~	N/A

(g) Only one trip system required in MODES 4 and 5 with RHR Shutdown Cooling System integrity maintained.

(h) With reactor steam dome pressure greater than or equal to the RHR cut in permissive pressure.

(i) With reactor ~~steam~~ dome pressure less than the RHR cut in permissive pressure.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.6.2.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.6.2.3	Calibrate the analog trip module.	92 days
SR 3.3.6.2.4	Perform CHANNEL CALIBRATION.	18 months
SR 3.3.6.2.5	Perform LOGIC SYSTEM FUNCTIONAL TEST.	18 months

SR 3.3.6.2.6 ------ NOTE ---------
Only applicable to the portions of the logic tested by the Self Test System.

Perform LOGIC SYSTEM FUNCTIONAL TEST independent of the Self Test System. 72 months

Table 3.3.6.2-1 (page 1 of 1)
Secondary Containment Isolation Instrumentation

FUNCTION	APPLICABLE MODES AND OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Reactor Vessel Water Level – Low Low, Level 2	1,2,3,(a)	2	SR 3.3.6.2.1 SR 3.3.6.2.2 SR 3.3.6.2.3 SR 3.3.6.2.4 SR 3.3.6.2.5 ~~OR 3.3.6.2.6~~	≥ -47.7 inches
2. Drywell Pressure – High	1,2,3	2	SR 3.3.6.2.1 SR 3.3.6.2.2 SR 3.3.6.2.3 SR 3.3.6.2.4 SR 3.3.6.2.5 ~~SR 3.3.6.2.6~~	≤ 1.88 psig
3. Containment Building Fuel Transfer Pool Ventilation Plenum Exhaust Radiation – High	(a),(b)	2	SR 3.3.6.2.1 SR 3.3.6.2.2 SR 3.3.6.2.4 SR 3.3.6.2.5 ~~SR 3.3.6.2.6~~	≤ 500 mR/hr
4. Containment Building Exhaust Radiation – High	1,2,3 (a),(b)	2	SR 3.3.6.2.1 SR 3.3.6.2.2 SR 3.3.6.2.4 SR 3.3.6.2.5 ~~SR 3.3.6.2.6~~	≤ 400 mR/hr
5. Containment Building continuous Containment Purge (CCP) Exhaust Radiation – High	1,2,3 (a),(b)	2	SR 3.3.6.2.1 SR 3.3.6.2.2 SR 3.3.6.2.4 SR 3.3.6.2.5 ~~SR 3.3.6.2.6~~	≤ 400 mR/hr
6. Fuel Building Exhaust Radiation – High	1,2,3 (c)	2	SR 3.3.6.2.1 SR 3.3.6.2.2 SR 3.3.6.2.4 SR 3.3.6.2.5 ~~SR 3.3.6.2.6~~	≤ 17 mR/hr
7. Manual Initiation	1,2,3, (a),(b)	1	SR 3.3.6.2.5 ~~SR 3.3.6.2.6~~	NA

(a) During operations with a potential for draining the reactor vessel.

(b) During CORE ALTERATIONS, and during movement of irradiated fuel assemblies in the primary or secondary containment.

(c) During movement of irradiated fuel assemblies in the fuel building.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.6.3.6	----------NOTES---------- 1. Only applicable to the portions of the logic tested by the Self Test System. 2. For the purposes of determining the STAGGERED TEST BASIS Frequency, all channels for all Functions are considered together and "n" equals four. ----------	
	Perform LOGIC SYSTEM FUNCTIONAL TEST independent of the Self Test System.	18 months on a STAGGERED TEST BASIS

Table 3.3.6.3-1 (page 1 of 1)
RHR Containment Spray System Instrumentation

FUNCTION	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Drywell Pressure – High	2	B	SR 3.3.6.3.1 SR 3.3.6.3.2 SR 3.3.6.3.3 SR 3.3.6.3.4 SR 3.3.6.3.5 ~~OR 3.3.6.3.6~~	≤ 1.88 psig
2. Containment Pressure – High	2	B	SR 3.3.6.3.1 SR 3.3.6.3.2 SR 3.3.6.3.3 SR 3.3.6.3.4 SR 3.3.6.3.5 ~~OR 3.3.6.3.6~~	≤ 22.4 psia
3. Reactor Vessel Water Level – Low Low Low, Level 1	2	B	SR 3.3.6.3.1 SR 3.3.6.3.2 SR 3.3.6.3.3 SR 3.3.6.3.4 SR 3.3.6.3.5 ~~OR 3.3.6.3.6~~	≥ -147.7 inches
4. Timers, System A and System B	1	C	SR 3.3.6.3.2 SR 3.3.6.3.4 SR 3.3.6.3.5 ~~OR 3.3.6.3.6~~	≥ 10.10 minutes and ≤ 10.23 minutes
5. Timer, System B Only	1	C	SR 3.3.6.3.2 SR 3.3.6.3.4 SR 3.3.6.3.5 ~~OR 3.3.6.3.6~~	≤ 90.6 seconds
6. Manual Initiation	1	C	SR 3.3.6.3.5 ~~OR 3.3.6.3.6~~	NA

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.6.4.8	----------NOTES---------- 1. Only applicable to the portions of the logic tested by the Self Test System. 2. For the purposes of determining the STAGGERED TEST BASIS Frequency, all channels for all Functions are considered together and "n" equals four. --- Perform LOGIC SYSTEM FUNCTIONAL TEST independent of the Self Test System.	18 months on a STAGGERED TEST BASIS

Table 3.3.6.4-1 (page 1 of 1)
Suppression Pool Makeup System Instrumentation

FUNCTION	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Drywell Pressure – High	2	B	SR 3.3.6.4.1 SR 3.3.6.4.2 SR 3.3.6.4.3 SR 3.3.6.4.6 SR 3.3.6.4.7	≤ 1.88 psig
2. Reactor Vessel Water Level – Low Low Low, Level 1	2	B	SR 3.3.6.4.1 SR 3.3.6.4.2 SR 3.3.6.4.3 SR 3.3.6.4.6 SR 3.3.6.4.7	≥ -147.7 inches
3. Suppression Pool Water Level – Low Low	2	B	SR 3.3.6.4.1 SR 3.3.6.4.2 SR 3.3.6.4.4 SR 3.3.6.4.6 SR 3.3.6.4.7	≥ 29 inches
4. Timer	1	C	SR 3.3.6.4.2 SR 3.3.6.4.5 SR 3.3.6.4.7	≤ 30 minutes
5. Manual Initiation	2	C	SR 3.3.6.4.7	NA

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.3.6.5.5 NOTE: Only applicable to the portions of the logic tested by the Self Test System. Perform LOGIC SYSTEM FUNCTIONAL TEST independent of the Self Test System.	72 months

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.1.1.14

The Average Power Range Monitor Flow Biased Simulated Thermal Power—High Function uses an electronic filter circuit to generate a signal proportional to the core THERMAL POWER from the APRM neutron flux signal. This filter circuit is representative of the fuel heat transfer dynamics that produce the relationship between the neutron flux and the core THERMAL POWER. The filter time constant is specified in the COLR and must be verified to ensure that the channel is accurately reflecting the desired parameter.

The Frequency of 18 months is based on engineering judgment and reliability of the components.

SR 3.3.1.1.15 ~~and SR 3.3.1.1.17~~

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required trip logic for a specific channel. The functional testing of control rods, in LCO 3.1.3, "Control Rod OPERABILITY," and SDV vent and drain valves, in LCO 3.1.8, "Scram Discharge Volume (SDV) Vent and Drain Valves," overlaps this Surveillance to provide complete testing of the assumed safety function.

The Self Test System may be utilized to perform this testing for those components that it is designed to monitor. However, manual testing, independent of the Self Test System, must be performed. This may be accomplished by testing any number of channels or Functions every 18 months on an alternating basis such that all channels for all Functions are tested every 72 months. This Frequency is based on the logic interrelationships of the various channels required to produce an RPS scram signal.

INSERT

The 18 month Frequency ~~of SR 3.3.1.1.15~~ is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.1.1.16

This SR ensures that scrams initiated from the Turbine Stop Valve Closure and Turbine Control Valve Fast Closure, Trip Oil Pressure—Low Functions will not be inadvertently bypassed when THERMAL POWER is ≥ 40% RTP. This involves calibration of the bypass channels. Adequate margins for the instrument setpoint methodology are incorporated into the actual setpoint. Because main turbine bypass flow can affect this setpoint nonconservatively (THERMAL POWER is derived from turbine first stage pressure), the main turbine bypass valves must remain closed at THERMAL POWER ≥ 40% RTP to ensure that the calibration remains valid.

If any bypass channel setpoint is nonconservative (i.e., the Functions are bypassed at ≥ 40% RTP, either due to open main turbine bypass valve(s) or other reasons), then the affected Turbine Stop Valve Closure and Turbine Control Valve Fast Closure, Trip Oil Pressure—Low Functions are considered inoperable. Alternatively, the bypass channel can be placed in the conservative condition (nonbypass). If placed in the nonbypass condition, this SR is met and the channel is considered OPERABLE.

The Frequency of 18 months is based on engineering judgment and reliability of the components.

SR 3.3.1.1.~~18~~17

This SR ensures that the individual channel response times are less than or equal to the maximum values assumed in the accident analysis. The RPS RESPONSE TIME acceptance criteria are included in plant Surveillance procedures.

As noted, neutron detectors are excluded from RPS RESPONSE TIME testing because the principles of detector operation virtually ensure an instantaneous response time.

RPS RESPONSE TIME tests are conducted on an 18 month (17) STAGGERED TEST BASIS. Note 2 of SR 3.3.1.1.~~18~~ requires STAGGERED TEST BASIS Frequency for each Function to be determined separately based on the four channels as specified in Table 3.3.1.1-1. This Frequency is based on the logic interrelationships of the various channels required to produce an RPS scram signal.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.1.1.~~18~~ 17 (continued)

Therefore, staggered testing results in response time verification of these devices every 18 months. This Frequency is consistent with the typical industry refueling cycle and is based upon plant operating experience, which shows that random failures of instrumentation components causing serious time degradation, but not channel failure, are infrequent.

REFERENCES

1. USAR, Section 7.2.

2. USAR, Section 5.2.2.

3. USAR, Section 6.3.3.

4. USAR, Chapter 15.

5. USAR, Section 15.4.1.2.

6. NEDO-23842, "Continuous Control Rod Withdrawal in the Startup Range," April 18, 1978.

7. USAR, Section 15.4.9.

8. Letter, P. Check (NRC) to G. Lainas (NRC), "BWR Scram Discharge System Safety Evaluation," December 1, 1980, as attached to NRC Generic Letter dated December 9, 1980.

9. NEDO-30851-P-A, "Technical Specification Improvement Analyses for BWR Reactor Protection System," March 1988.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.4.1.3 ~~and SR 3.3.4.1.6~~

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required trip logic for a specific channel. The system functional test of the pump breakers is included as a part of this test, overlapping the LOGIC SYSTEM FUNCTIONAL TEST, to provide complete testing of the associated safety function. Therefore, if a breaker is incapable of operating, the associated instrument channel would also be inoperable.

The Self Test System may be utilized to perform this testing for those components that it is designed to monitor. However, manual testing, independent of the Self Test System, must be performed. This may be accomplished by testing any number of channels or Functions every 18 months on an alternating basis such that all channels for all Functions are tested every 72 months. This Frequency is based on the logic interrelationships of the various channels required to produce an EOC-RPT signal.

INSERT

The 18 month Frequency ~~of SR 3.3.4.1.3~~ is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance test when performed at the 18 month Frequency.

SR 3.3.4.1.4

This SR ensures that an EOC-RPT initiated from the TSV Closure and TCV Fast Closure, Trip Oil Pressure—Low Functions will not be inadvertently bypassed when THERMAL POWER is $\geq$ 40% RTP. This involves calibration of the bypass channels. Adequate margins for the instrument setpoint methodologies are incorporated into the actual setpoint. Because main turbine bypass flow can affect this setpoint nonconservatively (THERMAL POWER is derived from first stage pressure), the main turbine bypass valves must remain closed at THERMAL POWER $\geq$ 40% RTP to ensure that the calibration remains valid. If any bypass channel's setpoint is nonconservative (i.e., the Functions are bypassed at $\geq$ 40% RTP either due to open main turbine bypass valves or other reasons), the affected TSV Closure and TCV Fast Closure, Trip Oil Pressure—Low Functions are considered

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.4.1.16

This SR ensures that the RPT breaker interruption time is provided to the EOC-RPT SYSTEM RESPONSE TIME test. Breaker Interruption time is defined as Breaker Response time plus Arc Suppression time. Breaker Response is the time from application of voltage to the trip coil until the main contacts separate. Arc Suppression is the time from main contact separation until the complete suppression of the electrical arc across the open contacts. The 60 month Frequency of the testing is based on the difficulty of performing the test and the reliability of the circuit breakers.

REFERENCES

1. USAR, Section 7.6.1.8.

2. USAR, Section 5.2.2.

3. USAR, Sections 15.1.1, 15.1.2, and 15.1.3.

4. USAR, Sections 15.2.2, 15.2.3, and 15.2.5.

5. USAR, Sections 15.3.2 and 15.3.3.

6. GENE-770-06-1, "Bases for Changes To Surveillance Test Intervals And Allowed Out-Of-Service Times For Selected Instrumentation Technical Specifications," February 1991.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.5.1.3

The calibration of ATMs provides a check of the actual trip setpoints. The channel must be declared inoperable if the trip setting is discovered to be not within its required Allowable Value specified in Table 3.3.5.1-1. If the trip setting is discovered to be less conservative than accounted for in the appropriate setpoint methodology, but is not beyond the Allowable Value, the channel performance is still within the requirements of the plant safety analyses. Under these conditions, the setpoint must be readjusted to be equal to or more conservative than the setting accounted for in the appropriate setpoint methodology.

The Frequency of 92 days is based on the reliability analysis of Reference 4.

SR 3.3.5.1.4

A CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology.

The Frequency of SR 3.3.5.1.4 is based upon the assumption of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.5.1.5 ~~and SR 3.3.5.1.7~~

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required initiation logic for a specific channel. The system functional testing performed in LCO 3.5.1, LCO 3.5.2, LCO 3.8.1, and LCO 3.8.2 overlaps this Surveillance to provide complete testing of the assumed safety function.

The Self Test System may be utilized to perform this testing for those components that it is designed to monitor. However, manual testing, independent of the Self Test System, must be performed. This may be accomplished by

INSERT

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.5.1.5 ~~and SR 3.3.5.1.7~~ (continued)

testing all channels and Functions associated with an ECCS division or the RCIC System every 18 months on an alternating basis such that all ECCS and RCIC channels for all Functions are tested every 72 months. This Frequency is based on the logic interrelationships of the various channels required to produce an ECCS initiation signal.

The 18 month Frequency ~~of SR 3.3.5.1.5~~ is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for unplanned transients if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency.

SR 3.3.5.1.6

This SR ensures that the individual channel response times are less than or equal to the maximum values assumed in the accident analysis. Response time testing acceptance criteria are included in Reference 5.

ECCS RESPONSE TIME tests are conducted on an 18 month STAGGERED TEST BASIS. This Frequency is consistent with the typical industry refueling cycle and is based upon plant operating experience, which shows that random failures of instrumentation components causing serious response time degradation, but not channel failure, are infrequent.

This SR is modified by a Note that requires the STAGGERED TEST BASIS Frequency for each Function in each trip system to be determined separately based on the number of redundant channels for that Function specified on Table 3.3.5.1-1. This Frequency is based on the logic interrelationships of the various channels required to produce an ECCS initiation signal.

REFERENCES

1. USAR, Section 5.2.2.
2. USAR, Section 6.3.
3. USAR, Chapter 15.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.5.2.2 (continued)

consistent with the assumptions of the current plant specific setpoint methodology.

The Frequency of 92 days is based on the reliability analysis of Reference 2.

SR 3.3.5.2.3

The calibration of analog trip modules provides a check of the actual trip setpoints. The channel must be declared inoperable if the trip setting is discovered to be less conservative than the Allowable Value specified in Table 3.3.5.2-1. If the trip setting is discovered to be less conservative than accounted for in the appropriate setpoint methodology, but is not beyond the Allowable Value, the channel performance is still within the requirements of the plant safety analysis. Under these conditions, the setpoint must be re-adjusted to be equal to or more conservative than accounted for in the appropriate setpoint methodology.

The Frequency of 92 days is based on the reliability analysis of Reference 2.

SR 3.3.5.2.4

CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies the channel responds to the measured parameter with the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology.

The Frequency is based on the assumption of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.5.2.5 ~~and SR 3.3.5.2.6~~

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required initiation logic for a specific channel. The system functional testing performed in LCO 3.5.3 overlaps this Surveillance to provide complete testing of the safety function.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.5.2.5 ~~and SR 3.3.5.2.6~~ (continued)

The Self Test System may be utilized to perform this testing for those components that it is designed to monitor. However, manual testing, independent of the Self Test System, must be performed. This may be accomplished by testing all channels and functions associated with an ECCS division or the RCIC System every 18 months on an alternating basis such that all ECCS and RCIC channels for all Functions are tested every 72 months. This Frequency is based on the logic interrelationships of the various channels required to produce an RCIC actuation signal.

INSERT

The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency.

REFERENCES

1. USAR, Section 15.4.9.

2. NEDE-770-06-2, "Addendum to Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications," February 1991.

3. USAR, Section 5.4.6.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.6.1.3 (continued)

Allowable Value, the channel performance is still within the requirements of the plant safety analysis. Under these conditions, the setpoint must be readjusted to be equal to or more conservative than accounted for in the appropriate setpoint methodology.

The Frequency of 92 days is based on the reliability analysis of References 5 and 6.

SR 3.3.6.1.4 and SR 3.3.6.1.5

CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology.

The Frequency of SR 3.3.6.1.4 and SR 3.3.6.1.6 is based on the assumption of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.6.1.6 ~~and SR 3.3.6.1.7~~

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required isolation logic for a specific channel. The system functional testing performed on PCIVs in LCO 3.6.1.3 overlaps this Surveillance to provide complete testing of the assumed safety function. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency.

The Self Test System may be utilized to perform this testing for those components that it is designed to monitor. However, manual testing, independent of the Self Test System, must be performed. This may be accomplished by testing

INSERT

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.6.1.6 ~~and SR 3.3.6.1.7~~ (continued)

any number of channels or Functions every 18 months on an alternating basis such that all channels for all Functions are tested every 72 months. This Frequency is based on the logic interrelationships of the various channels required to produce a Primary Containment Isolation initiation signal.

SR 3.3.6.1.~~8~~7

This SR ensures that the individual channel response times are less than or equal to the maximum values assumed in the accident analysis. The instrument response times must be added to the PCIV closure times to obtain the ISOLATION SYSTEM RESPONSE TIME. ISOLATION SYSTEM RESPONSE TIME acceptance criteria are included in applicable plant procedures.

The Note to SR 3.3.6.1.~~8~~7 requires the STAGGERED TEST BASIS Frequency for each Function to be determined seperately based on the number of channels as specified on Table 3.3.6.1-1. This Frequency is based on the logic interrelationships of the various channels required to produce an isolation signal.

ISOLATION SYSTEM RESPONSE TIME tests are conducted on an 18 month STAGGERED TEST BASIS. This Frequency is consistent with the typical industry refueling cycle and is based upon plant operating experience that shows that random failures of instrumentation components causing serious response time degradation, but not channel failure, are infrequent.

REFERENCES

1. USAR, Section 6.2.

2. USAR, Chapter 15.

3. NEDO-31466, "Technical Specification Screening Criteria Application and Risk Assessment," November 1987.

4. USAR, Section 9.3.5.

5. NEDC-31677-P-A, "Technical Specification Improvement Analysis for BWR Isolation Actuation Instrumentation," June 1989.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.6.2.3 (continued)

The Frequency of 92 days is based on the reliability analysis of References 3 and 4.

SR 3.3.6.2.4

CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology.

The Frequency is based upon the assumption of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.6.2.5 ~~and SR 3.3.6.2.6~~

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required isolation logic for a specific channel. The system functional testing, performed on SCIDs and the SGT System in LCO 3.6.4.2 and LCO 3.6.4.3, respectively, overlaps this Surveillance to provide complete testing of the assumed safety function.

The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency.

INSERT 184A

REFERENCES

1. USAR, Section 6.2.3.
2. USAR, Chapter 15.
3. NEDO-31677-P-A, "Technical Specification Improvement Analysis for BWR Isolation Actuation Instrumentation," July 1990.

(continued)

Insert 184A

The Self Test System may be utilized to perform this testing for those components that it is designed to monitor. ~~However, manual testing, independent of the Self Test System, must be performed. This may be accomplished by testing any number of channels or Functions every 18 months on an alternating basis such that all channels for all Functions are tested every 72 months. This Frequency is based on the logic interrelationships of the various channels required to produce a Secondary Containment Isolation initiation signal.~~

INSERT

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.6.3.5 ~~and SR 3.3.6.3.6~~

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required initiation logic for a specific channel. The system functional testing performed in LCO 3.6.1.7, "Residual Heat Removal (RHR) Containment Spray," overlaps this Surveillance to provide complete testing of the assumed safety function.

The Self Test System may be utilized to perform this testing for those components that it is designed to monitor. However, manual testing, independent of the Self Test System, must be performed. This may be accomplished by testing any number of channels or Functions every 18 months on an alternating basis such that all channels for all Functions are tested every 72 months. This Frequency is based on the logic interrelationships of the various channels required to produce an RHR Containment Spray System initiation signal.

INSERT

The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency.

REFERENCES

1. USAR, Section 7.3.1.1.4.

2. USAR, Section 6.2.1.1.5.

3. GENE-770-06-1, "Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications," February 1991.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.6.4.3 and SR 3.3.6.4.4

The calibration of analog trip modules and analog comparator units provides a check of the actual trip setpoints. The channel must be declared inoperable if the trip setting is discovered to be less conservative than the Allowable Value specified in Table 3.3.6.4-1. If the trip setting is discovered to be less conservative than accounted for in the appropriate setpoint methodology but is not beyond the Allowable Value, the channel performance is still within the requirements of the plant safety analysis. Under these conditions, the setpoint must be readjusted to be equal to or more conservative than accounted for in the appropriate setpoint methodology.

The Frequency of 92 days is based on the reliability analysis of Reference 3.

SR 3.3.6.4.5 and SR 3.3.6.4.6

A CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies that the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology.

The Frequency of SR 3.3.6.4.5 and SR 3.3.6.4.6 is based on the assumption of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.6.4.7 ~~and SR 3.3.6.4.8~~

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required initiation logic for a specific channel. The system functional testing performed in LCO 3.6.2.4, "Suppression Pool Makeup (SPMU) System," overlaps this Surveillance to provide complete testing of the assumed safety function.

The Self Test System may be utilized to perform this testing for those components that it is designed to monitor. However, manual testing, independent of the Self Test System, must be performed.

INSERT

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.6.4.7 ~~and SR 3.3.6.4.8~~ (continued)

This may be accomplished by testing any number of channels or Functions every 18 months on an alternating basis such that all channels for all Functions are tested every 72 months. This Frequency is based on the logic interrelationships of the various channels required to produce a Suppression Pool Makeup System initiation signal.

The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency.

REFERENCES

1. USAR, Section 7.3.1.1.10
2. USAR, Section 6.2.7.
3. GENE-770-06-1, "Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications," February 1991.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.6.5.2 (continued)

SR 3.3.6.5.3. If the trip setting is discovered to be less conservative than accounted for in the appropriate setpoint methodology but is not beyond the Allowable Value, the channel performance is still within the requirements of the plant safety analysis. Under these conditions, the setpoint must be readjusted to be equal to or more conservative than accounted for in the appropriate setpoint methodology.

The Frequency of 92 days is based on the reliability analysis of Reference 3.

SR 3.3.6.5.3

A CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology.

The Frequency is based upon the assumption of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.6.5.4 ~~and SR 3.3.6.5.5~~

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required actuation logic for a specific channel. The system functional testing performed for S/RVs in LCO 3.4.4, LCO 3.5.1, and LCO 3.6.1.6 overlaps this Surveillance to provide complete testing of the assumed safety function.

The Self Test System may be utilized to perform this testing for these components that it is designed to monitor. However, manual testing, independent of the Self Test System, must be performed.

INSERT

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.6.5.4 ~~and SR 3.3.6.5.5~~ (continued)

This frequency is based on the logic interrelationships of the various channels required to produce a relief and LLS initiation signal.

The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency.

REFERENCES

1. USAR, Section 5.2.2.

2. USAR, Section 7.3.1.1.1.4.2.

3. GENE-770-06-1, "Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications," February 1991.

INSERT for Bases pages B 3.3-28, B 3.3-73, B 3.3-120, B 3.3-134, B 3.3-171, B 3.3-196, B 3.3-206, and B 3.3-213

Those portions of the solid-state logic not monitored by the Self Test System may be tested at the frequency recommended by the manufacturer, rather than at the specified 18-month Frequency. The frequencies recommended by the manufacturer are based on mean time between failure analyses for the components in the associated circuits.

Table 3.3.5.1-1 (page 2 of 5)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
2. LPCI B and LPCI C Subsystems					
a. Reactor Vessel Water Level – Low Low Low, Level 1	1,2,3, $4^{(a)}, 5^{(a)}$	$2^{(b)}$	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6 ~~SR 3.3.5.1.7~~	≥ 147.7 inches
b. Drywell Pressure – High	1,2,3	$2^{(b)}$	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6 ~~SR 3.3.5.1.7~~	≤ 1.88 psig
c. LPCI Pump B Start – Time Delay Logic Card	1,2,3, $4^{(a)}, 5^{(a)}$	1	C	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 ~~SR 3.3.5.1.7~~	≥ 4.5 seconds and ≤ 5.5 seconds
d. Reactor Vessel Pressure – Low (Injection Permissive)	1,2,3	4	C	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5 ~~SR 3.3.5.1.7~~	≥ 452 psig and ≤ 478 psig
	$4^{(a)}, 5^{(a)}$	4	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5 ~~SR 3.3.5.1.7~~	≥ 452 psig and ≤ 478 psig
e. LPCI Pump B and LPCI Pump C Discharge Flow – Low (Bypass)	1,2,3, $4^{(a)}, 5^{(a)}$	1 per pump	E	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5 ~~SR 3.3.5.1.7~~	≥ 900 gpm
f. Manual Initiation	1,2,3, $4^{(a)}, 5^{(a)}$	1	C	SR 3.3.5.1.5 ~~SR 3.3.5.1.7~~	NA

(continued)

(a) When associated subsystem(s) are required to be OPERABLE.

(b) Also required to initiate the associated diesel generator.

Table 3.3.5.1-1 (page 3 of 5)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
3. High Pressure Core Spray (HPCS) System					
a. Reactor Vessel Water Level – Low Low, Level 2	1,2,3, $4^{(a)}, 5^{(a)}$	$4^{(b)}$	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6	≥ -47.7 inches
b. Drywell Pressure – High	1,2,3	$4^{(b)}$	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6	≤ 1.88 psig
c. Reactor Vessel Water Level – High, Level 8	1,2,3, $4^{(a)}, 5^{(a)}$	2	C	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5	≤ 54.2 inches
d. RCIC Storage Tank Level – Low	1,2,3, $4^{(c)}, 5^{(c)}$	2	D	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ 0 inches
e. Suppression Pool Water Level – High	1,2,3	2	D	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5	≤ 12 inches
f. HPCS Pump Discharge Pressure – High (Bypass)	1,2,3, $4^{(a)}, 5^{(a)}$	1	E	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ 120 psig
g. HPCS System Flow Rate – Low (Bypass)	1,2,3, $4^{(a)}, 5^{(a)}$	1	E	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ 500 gpm

(continued)

(a) When associated subsystem(s) are required to be OPERABLE.

(b) Also required to initiate the associated diesel generator.

(c) When HPCS is OPERABLE for compliance with LCO 3.5.2, "ECCS – Shutdown," and aligned to the RCIC storage tank while tank water level is not within the limits of SR 3.5.2.2.