ENCLOSURE 2

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
NRC DOCKETS 50-325 & 50-324
OPERATING LICENSES DPR-71 & DPR-62
REQUEST FOR LICENSE AMENDMENT

INSTRUCTIONS FOR INCORPORATION

The proposed changes to the Technical Specifications (Appendix A to Operating Licenses DPR-71 and DPR-62) would be incorporated as follows:

UNIT 1

Remove Page	Insert Page
VII	VII
XI	XI
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3/4 3-11	3/4 3-11
3/4 3-12	3/4 3-12
3/4 3-13	3/4 3-13
3/4 3-14	3/4 3-14
3/4 3-14a	------
3/4 3-15	3/4 3-15
3/4 3-16	3/4 3-16
3/4 3-17	3/4 3-17
3/4 3-18	3/4 3-18
3/4 3-19	3/4 3-19
3/4 3-20	3/4 3-20
3/4 3-21	3/4 3-21
3/4 3-22	3/4 3-22
3/4 3-23	3/4 3-23
3/4 3-24	3/4 3-24
3/4 3-24a	------
3/4 3-24b	------
3/4 3-25	3/4 3-25
3/4 3-26	3/4 3-26
3/4 3-27	3/4 3-27
3/4 3-28	3/4 3-28
3/4 3-29	3/4 3-29
3/4 3-29a	3/4 3-29a
3/4 3-29b	3/4 3-29b
------	3/4 3-29c
------	3/4 3-29d
------	3/4 3-29e
------	3/4 3-29f
------	3/4 3-29g
------	3/4 3-29h
------	3/4 3-29i
------	3/4 3-29j

3/4 6-1	3/4 6-1
3/4 6-2	3/4 6-2
3/4 6-12	3/4 6-12
3/4 6-13	3/4 6-13
3/4 6-14	3/4 6-14
3/4 6-15	3/4 6-15
3/4 6-16	3/4 6-16
3/4 6-16a	------
3/4 6-17	3/4 6-17
3/4 6-18	3/4 6-18
3/4 6-19	3/4 6-19
3/4 6-20	3/4 6-20
3/4 6-20a	------
3/4 6-21	3/4 6-21
3/4 6-22	3/4 6-22
3/4 6-23	3/4 6-23
3/4 6-24	3/4 6-24
3/4 6-25	3/4 6-25
3/4 6-26	3/4 6-26
3/4 6-27	------
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3/4 6-29	------
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B 3/4 6-5	B 3/4 6-5
B 3/4 6-6	B 3/4 6-6

UNIT 2

Remove Page	Insert Page
VII	VII
XI	XI
1-5	1-5
3/4 3-11	3/4 3-11
3/4 3-12	3/4 3-12
3/4 3-13	3/4 3-13
3/4 3-14	3/4 3-14
3/4 3-14a	------
3/4 3-15	3/4 3-15
3/4 3-16	3/4 3-16
3/4 3-17	3/4 3-17
3/4 3-18	3/4 3-18
3/4 3-19	3/4 3-19
3/4 3-20	3/4 3-20
3/4 3-21	3/4 3-21
3/4 3-22	3/4 3-22
3/4 3-23	3/4 3-23
3/4 3-24	3/4 3-24
3/4 3-24a	------
3/4 3-24b	------

3/4 3-25	3/4 3-25
3/4 3-26	3/4 3-26
3/4 3-27	3/4 3-27
3/4 3-28	3/4 3-28
3/4 3-29	3/4 3-29
3/4 3-29a	3/4 3-29a
3/4 3-29b	3/4 3-29b
------	3/4 3-29c
------	3/4 3-29d
------	3/4 3-29e
------	3/4 3-29f
------	3/4 3-29g
------	3/4 3-29h
------	3/4 3-29i
------	3/4 3-29j
3/4 6-1	3/4 6-1
3/4 6-2	3/4 6-2
3/4 6-12	3/4 6-12
3/4 6-13	3/4 6-13
3/4 6-14	3/4 6-14
3/4 6-15	3/4 6-15
3/4 6-16	3/4 6-16
3/4 6-16a	------
3/4 6-17	3/4 6-17
3/4 6-18	3/4 6-18
3/4 6-19	3/4 6-19
3/4 6-20	3/4 6-20
3/4 6-20a	------
3/4 6-21	3/4 6-21
3/4 6-22	3/4 6-22
3/4 6-23	3/4 6-23
3/4 6-24	3/4 6-24
3/4 6-25	3/4 6-25
3/4 6-26	3/4 6-26
3/4 6-27	------
3/4 6-28	------
3/4 6-29	------
3/4 6-30	------
B 3/4 6-5	B 3/4 6-5
B 3/4 6-6	B 3/4 6-6

ENCLOSURE 3

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
NRC DOCKETS 50-325 & 50-324
OPERATING LICENSES DPR-71 & DPR-62
REQUEST FOR LICENSE AMENDMENT

UNIT 1 TECHNICAL SPECIFICATION PAGES

INDEX

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

INDEX

BASES

OPERATIONAL CONDITION

An OPERATIONAL CONDITION shall be any one inclusive combination of mode switch position and average reactor coolant temperature as indicated in Table 1.2.

PHYSICS TESTS

PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation and are 1) described in Section 13 of the FSAR, 2) authorized under the provisions of 10 CFR 50.59, or 3) otherwise approved by the Commission.

PRESSURE BOUNDARY LEAKAGE

PRESSURE BOUNDARY LEAKAGE shall be leakage through a non-isolatable fault in a reactor coolant system component body, pipe wall, or vessel wall.

PRIMARY CONTAINMENT INTEGRITY

PRIMARY CONTAINMENT INTEGRITY shall exist when:

a. All penetrations required to be closed during accident conditions are either:

   1. Capable of being closed by an OPERABLE containment automatic isolation valve system, or

   2. Closed by at least one manual valve, blind flange, or deactivated automatic valve secured in its closed position, except as provided in Specification 3.6.3.

b. All equipment hatches are closed and sealed.

c. Each containment air lock is OPERABLE pursuant to Specification 3.6.1.3.

d. The containment leakage rates are within the limits of Specification 3.6.1.2.

e. The sealing mechanism associated with each penetration (e.g., welds, bellows or O-rings) is OPERABLE.

PROCESS CONTROL PROGRAM (PCP)

The PROCESS CONTROL PROGRAM (PCP) shall contain the current formula, sampling, analyses, tests and determinations to be made to ensure that the processing and packaging of solid radioactive wasts based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Part 20, 10 CFR Part 71, and Federal and State regulations and other requirements governing the disposal of the radioactive waste.

TABLE 3.3.2-1

ISOLATION ACTUATION INSTRUMENTATION

TRIP FUNCTION AND INSTRUMENT NUMBER	VALVE GROUPS OPERATED BY SIGNAL(a)	MINIMUM NUMBER OPERABLE CHANNELS PER TRIP SYSTEM(b)(c)	APPLICABLE OPERATIONAL CONDITION	ACTION
1. PRIMARY CONTAINMENT ISOLATION				
a. Reactor Vessel Water Level -				
1. Low, Level 1	2, 6	2	1, 2, 3	20
(B21-LT-N017A-1,B-1,C-1,D-1)	8	2	1, 2, 3	27
(B21-LTM-N017A-1,B-1,C-1,D-1)				
2. Low, Level 2	1	2	1, 2, 3	20
(B21-LT-N024A-1,B-1; B21-LT-N025A-1,B-1)	3	2	1, 2, 3	24
(B21-LTM-N024A-1,B-1; B21-LTM-N025A-1,B-1)				
b. Drywell Pressure - High (C71-PT-N002A,B,C,D) (C71-PTM-N002A-1,B-1,C-1,D-1)	2, 6	2	1, 2, 3	20
c. Main Steam Line				
1. Radiation - High (D12-RE-N006A,B,C,D) (D12-RM-K603A,B,C,D)	1	2	1, 2, 3	21
2. Pressure - Low (B21-PT-N015A,B,C,D) (B21-PTM-N015A-1,B-1,C-1,D-1)	1(i)	2	1	22
3. Flow - High (B21-PDT-N006A,B,C,D; B21-PDT-N007A,B,C,D; B21-PDT-N008A,B,C,D; B21-PDT-N009A,B,C,D)	1(i)	2/line	1	22
(B21-PDTM-N006A-1,B-1,C-1,D-1; B21-PDTM-N007A-1,B-1,C-1,D-1; B21-PDTM-N008A-1,B-1,C-1,D-1; B21-PDTM-N009A-1,B-1,C-1,D-1)				

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

TRIP FUNCTION AND INSTRUMENT NUMBER	VALVE GROUPS OPERATED BY SIGNAL(a)	MINIMUM NUMBER OPERABLE CHANNELS PER TRIP SYSTEM(b)(c)	APPLICABLE OPERATIONAL CONDITION	ACTION
PRIMARY CONTAINMENT ISOLATION (Continued)				
d. Main Steam Line Tunnel Temperature - High (B21-TS-N010A,B,C,D; B21-TS-N011A,B,C,D; B21-TS-N012A,B,C,D; B21-TS-N013A,B,C,D)	1(i)	2(d)	1, 2, 3	21
e. Condenser Vacuum - Low (B21-PT-N056A,B,C,D) (B21-PTM-N056A-1,B-1,C-1,D-1)	1(i)	2	1, 2(e)	21
f. Turbine Building Area Temperature - High (B21-TS-3225A,B,C,D; B21-TS-3226A,B,C,D; B21-TS-3227A,B,C,D; B21-TS-3228A,B,C,D; B21-TS-3229A,B,C,D; B21-TS-3230A,B,C,D; B21-TS-3231A,B,C,D; B21-TS-3232A,B,C,D)	1(i)	4(d)	1, 2, 3	21
g. Reactor Building Exhaust Radiation - High (D12-RE-N010A,B) (D12-RM-K609A,B)	6	1	1, 2, 3	20

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

TRIP FUNCTION AND INSTRUMENT NUMBER	VALVE GROUPS OPERATED BY SIGNAL(a)	MINIMUM NUMBER OPERABLE CHANNELS PER TRIP SYSTEM(b)(c)	APPLICABLE OPERATIONAL CONDITION	ACTION
2. SECONDARY CONTAINMENT ISOLATION				
a. Reactor Building Exhaust Radiation - High (D12-RE-N010A,B)	(k)	1	1, 2, 3, 5, and *	23
(D12-RM-K609A,B)	6	1	1, 2, 3	20
b. Drywell Pressure - High (C71-PT-N002A,B,C,D)	(k)	2	1, 2, 3	23
(C71-PTM-N002A-1,B-1,C-1,D-1)	2, 6	2	1, 2, 3	20
c. Reactor Vessel Water Level - Low, Level 2	(k)	2	1, 2, 3	23
(B21-LT-N024A-1,B-1; B21-LT-N025A-1,B-1)	1	2	1, 2, 3	20
	3	2	1, 2, 3	24
(B21-LTM-N024A-1,B-1; B21-LTM-N025A-1,B-1)				
3. REACTOR WATER CLEANUP SYSTEM ISOLATION				
a. Δ Flow - High (G31-FDS-N603-1A,1B)	3	1	1, 2, 3	24
b. Area Temperature - High (G31-TS-N600A,B,C,D,E,F)	3	2	1, 2, 3	24
c. Area Ventilation Δ Temperature - High (G31-TDS-N602A,B,C,D,E,F)	3	2	1, 2, 3	24
d. SLCS Initiation (C41A-S1)	3 (f)	NA	1, 2, 3	24

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

TRIP FUNCTION AND INSTRUMENT NUMBER	VALVE GROUPS OPERATED BY SIGNAL(a)	MINIMUM NUMBER OPERABLE CHANNELS PER TRIP SYSTEM(b)(c)	APPLICABLE OPERATIONAL CONDITION	ACTION
REACTOR WATER CLEANUP SYSTEM ISOLATION (Continued)				
e. Reactor Vessel Water Level - Low, Level 2 (B21-LT-NO24A-1,B-1; B21-LT-NO25A-1,B-1)	1	2	1, 2, 3	20
	3	2	1, 2, 3	24
(B21-LTM-NO24A-1,B-1; B21-LTM-NO25A-1,B-1)				
f. Δ Flow - High - Time Delay Relay (G31-R616C,D)	NA	1	1, 2, 3	24
4. CORE STANDBY COOLING SYSTEMS ISOLATION				
a. High Pressure Coolant Injection System Isolation				
1. HPCI Steam Line Flow - High (E41-PDT-NOO4; E41-PDT-NOO5)	4	1	1, 2, 3	25
(E41-PDTS-NOO4-2; E41-PDTS-NOO5-2)				
2. HPCI Steam Line Flow - High Time Delay Relay (E41-TDR-K33; E41-TDR-K43)	NA	1	1, 2, 3	25
3. HPCI Steam Supply Pressure - Low (E41-PSL-NOO1A,B,C,D)	4	2	1, 2, 3	25
	7(j)	1	1, 2, 3	25

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

TRIP FUNCTION AND INSTRUMENT NUMBER	VALVE GROUPS OPERATED BY SIGNAL(a)	MINIMUM NUMBER OPERABLE CHANNELS PER TRIP SYSTEM(b)(c)	APPLICABLE OPERATIONAL CONDITION	ACTION
CORE STANDBY COOLING SYSTEMS ISOLATION (Continued)				
4. HPCI Steam Line Tunnel Temperature - High (E41-TS-3314; E41-TS-3315; E41-TS-3316; E41-TS-3317; E41-TS-3318; E41-TS-3354; E41-TS-3488; E41-TS-3489)	4	2	1, 2, 3	25
5. Bus Power Monitor (E41-K55; E41-K56)	NA(g)	1/bus	1, 2, 3	26
6. HPCI Turbine Exhaust Diaphragm Pressure - High (E41-PSH-N012A,B,C,D)	4	2	1, 2, 3	25
7. HPCI Steam Line Ambient Temperature - High (E51-TS-N603C,D)	4	1	1, 2, 3	25
8. HPCI Steam Line Area Δ Temperature - High (E51-TDS-N604C,D)	4	1	1, 2, 3	25
9. HPCI Equipment Area Temperature - High (E41-TS-N602A,B)	4	1	1, 2, 3	25
10. Drywell Pressure - High (E11-PT-N011C,D) (E11-PTS-N011C-2,D-2)	7(j)	1	1, 2, 3	25

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

TRIP FUNCTION AND INSTRUMENT NUMBER	VALVE GROUPS OPERATED BY SIGNAL(a)	MINIMUM NUMBER OPERABLE CHANNELS PER TRIP SYSTEM(b)(c)	APPLICABLE OPERATIONAL CONDITION	ACTION
b. Reactor Core Isolation Cooling System Isolation				
1. RCIC Steam Line Flow - High (E51-PDT-NO17; E51-PDT-NO18) (E51-PDTS-NO17-2; E51-PDTS-NO18-2)	5	1	1, 2, 3	25
2. RCIC Steam Line Flow - High Time Delay Relay (E51-TDR-K32; E51-TDR-K12)	NA	1	1, 2, 3	25
3. RCIC Steam Supply Pressure - Low	5	2	1, 2, 3	25
(E51-PS-NO19A,B,C,D)	9(j)	1	1, 2, 3	25
4. RCIC Steam Line Tunnel Temperature - High (E51-TS-3319; E51-TS-3320; E51-TS-3321; E51-TS-3322; E51-TS-3323; E51-TS-3355; E51-TS-3487)	5	2	1, 2, 3	25
5. Bus Power Monitor (E51-K42; E51-K43)	NA (g)	1/bus	1, 2, 3	26
6. RCIC Turbine Exhaust Diaphragm Pressure - High (E51-PS-NO12A,B,C,D)	5	2	1, 2, 3	25

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

TRIP FUNCTION AND INSTRUMENT NUMBER	VALVE GROUPS OPERATED BY SIGNAL(a)	MINIMUM NUMBER OPERABLE CHANNELS PER TRIP SYSTEM(b)(c)	APPLICABLE OPERATIONAL CONDITION	ACTION
CORE STANDBY COOLING SYSTEMS ISOLATION (Continued)				
7. RCIC Steam Line Ambient Temperature - High (E51-TS-N603A,B)	5	1	1, 2, 3	25
8. RCIC Steam Line Area Δ Temperature - High (E51-TDS-N604A,B)	5	1	1, 2, 3	25
9. RCIC Equipment Room Ambient Temperature - High (E51-TS-N602A,B)	5	1	1, 2, 3	25
10. RCIC Equipment Room Δ Temperature - High (E51-TDS-N601A,B)	5	1	1, 2, 3	25
11. RCIC Steam Line Tunnel Temperature - High Time Delay Relay (E51-KC-M602A,B)	NA	1	1, 2, 3	25
12. Drywell Pressure - High (E11-PT-N011A,B) (E11-PTS-N011A-2,B-2)	9(j)	1	1, 2, 3	25
5. SHUTDOWN COOLING SYSTEM ISOLATION				
a. Reactor Vessel Water Level - Low, Level 1 (B21-LT-N017A-1,B-1,C-1,D-1) (B21-LTM-N017A-1,B-1,C-1,D-1)	2, 6 8	2 2	1, 2, 3 1, 2, 3	20 27
b. Reactor Steam Dome Pressure - High (B32-PS-N018A-1,B)	8(h)	1	1, 2, 3	27

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

ACTIONS

ACTION 20 - Be in at least HOT SHUTDOWN within 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION 21 - Be in at least STARTUP with the main steam line isolation valves closed within 2 hours or be in at least HOT SHUTDOWN within 6 hours and in COLD SHUTDOWN within the next 30 hours.

ACTION 22 - Be in at least STARTUP within 2 hours.

ACTION 23 - Establish SECONDARY CONTAINMENT INTEGRITY with the standby gas treatment system operating within one hour.

ACTION 24 - Isolate the reactor water cleanup system.

ACTION 25 - Close the affected system isolation valves and declare the affected system inoperable.

ACTION 26 - Verify power availability to the bus at least once per 12 hours.

ACTION 27 - Deactivate the shutdown cooling supply and reactor vessel head spray isolation valves in the closed position until the reactor steam dome pressure is within the specified limits.

NOTES

* When handling irradiated fuel in the secondary containment.

(a) Refer to plant procedure _____ for valves in each valve group.

(b) A channel may be placed in an inoperable status for up to 2 hours for required surveillance without placing the trip system in the tripped condition provided at least one other OPERABLE channel in the same trip system is monitoring that parameter.

(c) With only one channel per trip system, 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 2 hours or the ACTION required by Table 3.3.2-1 for that Trip Function shall be taken.

(d) A channel is OPERABLE if 2 of 4 instruments in that channel are OPERABLE.

(e) With reactor steam pressure $\geq$ 500 psig.

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

NOTES

(f) Closes only RWCU outlet isolation valve.

(g) Alarm only.

(h) Does not isolate E11-F015A,B.

(i) Does not isolate B32-F019 or B32-F020.

(j) Valve isolation depends upon low steam supply pressure coincident with high drywell pressure.

(k) Secondary containment isolation dampers as listed in plant procedure _____.

TABLE 3.3.2-2

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

TRIP FUNCTION AND INSTRUMENT NUMBER	TRIP SETPOINT	ALLOWABLE VALUE
1. PRIMARY CONTAINMENT ISOLATION		
a. Reactor Vessel Water Level -		
1. Low, Level 1 (B21-LTM-NO17A-1,B-1,C-1,D-1)	$\geq$ + 162.5 inches(a)	$\geq$ + 162.5 inches(a)
2. Low, Level 2 (B21-LTM-NO24A-1,B-1; B21-LTM-NO25A-1,B-1)	$\geq$ + 112 inches(a)	$\geq$ + 112 inches(a)
b. Drywell Pressure - High (C71-PTM-NOO2A-1,B-1,C-1,D-1)	$\leq$ 2 psig	$\leq$ 2 psig
c. Main Steam Line		
1. Radiation - High (D12-RM-K603A,B,C,D)	$\leq$ 3 x full power background	$\leq$ 3.5 x full power background
2. Pressure - Low (B21-PTM-NO15A-1,B-1,C-1,D-1)	$\geq$ 825 psig	$\geq$ 825 psig
3. Flow - High (B21-PDTM-NOO6A-1,B-1,C-1,D-1; B21-PDTM-NOO7A-1,B-1,C-1,D-1; B21-PDTM-NOO8A-1,B-1,C-1,D-1; B21-PDTM-NOO9A-1,B-1,C-1,D-1)	$\leq$ 140% of rated flow	$\leq$ 140% of rated flow

TABLE 3.3.2-2 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

TRIP FUNCTION AND INSTRUMENT NUMBER	TRIP SETPOINT	ALLOWABLE VALUE
PRIMARY CONTAINMENT ISOLATION (Continued)		
d. Main Steam Line Tunnel Temperature - High (B21-TS-N010A,B,C,D; B21-TS-N011A,B,C,D; B21-TS N012A,B,C,D; B21-TS-N013A,B,C,D)	≤ 200°F	≤ 200°F
e. Condenser Vacuum - Low (B21-PTM-N056A-1,B-1,C-1,D-1)	≥ 7 inches Hg vacuum	≥ 7 inches Hg vacuum
f. Turbine Building Area Temperature - High (B21-TS-3225A,B,C,D; B21-TS-3226A,B,C,D; B21-TS-3227A,B,C,D; B21-TS-3228A,B,C,D; B21-TS-3229A,B,C,D; B21-TS-3230A,B,C,D; B21-TS-3231A,B,C,D; B21-TS-3232A,B,C,D)	≤ 200°F	≤ 200°F
g. Reactor Building Exhaust Radiation - High (D12-RM-K609A,B)	≤ 11 mr/hr	≤ 11 mr/hr
2. SECONDARY CONTAINMENT ISOLATION		
a. Reactor Building Exhaust Radiation - High (D12-RM-K609A,B)	≤ 11 mr/hr	≤ 11 mr/hr
b. Drywell Pressure - High (C71-PTM-N002A-1,B-1,C-1,D-1)	≤ 2 psig	≤ 2 psig
c. Reactor Vessel Water Level - Low, Level 2 (B21-LTM-N024A-1,B-1; B21-LTM-N025A-1,B-1)	≥ + 112 inches(a)	≥ + 112 inches(a)

TABLE 3.3.2-2 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

TRIP FUNCTION AND INSTRUMENT NUMBER	TRIP SETPOINT	ALLOWABLE VALUE
3. REACTOR WATER CLEANUP SYSTEM ISOLATION		
a. Δ Flow - High (G31-FDS-N603-1A,1B)	≤ 53 gal/min	≤ 53 gal/min
b. Area Temperature - High (G31-TS-N600A,B,C,D,E,F)	≤ 150°F	≤ 150°F
c. Area Ventilation Δ Temperature - High (G31-TDS-N602A,B,C,D,E,F)	≤ 50°F	≤ 50°F
d. SLCS Initiation (C41A-S1)	NA	NA
e. Reactor Vessel Water Level - Low, Level 2 (B21-LTM-N024A-1,B-1; B21-LTM-N025A-1,B-1)	≥ + 112 inches(a)	≥ + 112 inches(a)
f. Δ Flow - High - Time Delay Relay (G31-R616C,D)	≤ 45 seconds	≤ 45 seconds
4. CORE STANDBY COOLING SYSTEMS ISOLATION		
a. High Pressure Coolant Injection System Isolation		
1. HPCI Steam Line Flow - High (E41-PDTS-N004-2; E41-PDTS-N005-2)	≤ 300% of rated flow	≤ 300% of rated flow
2. HPCI Steam Line Flow - High Time Delay Relay (E41-TDR-K33; E41-TDR-K43)	3 ≤ t ≤ 7 seconds	3 ≤ t ≤ 12 seconds
3. HPCI Steam Supply Pressure - Low (E41-PSL-N001A,B,C,D)	≥ 100 psig	≥ 100 psig

TABLE 3.3.2-2 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

TRIP FUNCTION AND INSTRUMENT NUMBER	TRIP SETPOINT	ALLOWABLE VALUE
CORE STANDBY COOLING SYSTEMS ISOLATION (Continued)		
4. HPCI Steam Line Tunnel Temperature - High (E41-TS-3314; E41-TS-3315; E41-TS-3316; E41-TS-3317; E41-TS-3318; E41-TS-3354; E41-TS-3488; E41-TS-3489)	≤ 200°F	≤ 200°F
5. Bus Power Monitor (E41-K55; E41-K56)	NA	NA
6. HPCI Turbine Exhaust Diaphragm Pressure - High (E41-PSH-N012A,B,C,D)	≤ 10 psig	≤ 10 psig
7. HPCI Steam Line Ambient Temperature - High (E51-TS-N603C,D)	≤ 200°F	≤ 200°F
8. HPCI Steam Line Area Δ Temperature - High (E51-TDS-N604C,D)	≤ 50°F	≤ 50°F
9. HPCI Equipment Area Temperature - High (E41-TS-N602A,B)	≤ 175°F	≤ 175°F
10. Drywell Pressure - High (E11-PTS-N011C-2,D-2)	≤ 2 psig	≤ 2 psig
b. Reactor Core Isolation Cooling System Isolation		
1. RCIC Steam Line Flow - High (E51-PDTS-N017-2; E51-PDTS-N018-2)	≤ 300% of rated flow	≤ 300% of rated flow

TABLE 3.3.2-2 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

TRIP FUNCTION AND INSTRUMENT NUMBER	TRIP SETPOINT	ALLOWABLE VALUE
2. RCIC Steam Line Flow - High Time Delay Relay (E51-TDR-K32; E51-TDR-K12)	3 ≤ t ≤ 7 seconds	3 ≤ t ≤ 12 seconds
3. RCIC Steam Supply Pressure - Low (E51-PS-N019A,B,C,D)	≥ 50 psig	≥ 50 psig
4. RCIC Steam Line Tunnel Temperature - High (E51-TS-3319; E51-TS-3320; E51-TS-3321; E51-TS-3322; E51-TS-3323; E51-TS-3355; E51-TS-3487)	≤ 175°F	≤ 175°F
5. Bus Power Monitor (E51-K42; E51-K43)	NA	NA
6. RCIC Turbine Exhaust Diaphragm Pressure - High (E51-PS-N012A,B,C,D)	≤ 10 psig	≤ 10 psig
7. RCIC Steam Line Ambient Temperature - High (E51-TS-N603A,B)	≤ 200°F	≤ 200°F
8. RCIC Steam Line Area Δ Temperature - High (E51-TDS-N604A,B)	≤ 50°F	≤ 50°F
9. RCIC Equipment Room Ambient Temperature - High (E51-TS-N602A,B)	≤ 175°F	≤ 175°F

TABLE 3.3.[illegible]-2 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

TRIP FUNCTION AND INSTRUMENT NUMBER	TRIP SETPOINT	ALLOWABLE VALUE
[illegible] STANDBY COOLING SYSTEMS ISOLATION (Continued)		
10. RCIC Equipment Room Δ Temperature - High ([illegible]-TDS-N601A,B)	≤ 50°F	≤ 50°F
[illegible] Line Tunnel Temperature - High [illegible] Relay ([illegible]-602A,B)	≤ 30 minutes	≤ 30 minutes
[illegible] Shell Pressure - High ([illegible]-PTS-N011A-2,B-2)	≤ 2 psig	≤ 2 psig
5. SH[illegible] SYSTEM ISOLATION		
a. [illegible] Vessel Water Level - Low, Level 1 (B21-LTM-N017A-1,B-1,C-1,D-1)	≥ + 162.5 inches(a)	≥ + 162.5 inches(a)
b. Reactor Steam Dome Pressure - High (B32-PS-N018A-1,B)	≤ 140 psig	≤ 140 psig

(a) Vessel water levels refer to RFFERENCE LEVEL ZERO.

TABLE 3.3.2-3

ISOLATION SYSTEM INSTRUMENTATION RESPONSE TIME

TRIP FUNCTION AND INSTRUMENT NUMBER	RESPONSE TIME (Seconds)(a)(d)
1. PRIMARY CONTAINMENT ISOLATION	
a. Reactor Vessel Water Level -	
1. Low, Level 1 (B21-LT-N017A-1,B-1,C-1,D-1) (B21-LTM-N017A-1,B-1,C-1,D-1)	≤13
2. Low, Level 2 (B21-LT-N024A-1,B-1; B21-LT-N025A-1,B-1) (B21-LTM-N024A-1,B-1; B21-LTM-N025A-1,B-1)	≤1.0(c) ≤13(h)
b. Drywell Pressure - High (C71-PT-N002A,B,C,D) (C71-PTM-N002A-1,B-1,C-1,D-1)	≤13
c. Main Steam Line	
1. Radiation - High(b) (D12-RM-K603A,B,C,D)	≤1.0(c) ≤13(h)
2. Pressure - Low (B21-PT-N015A,B,C,D) (B21-PTM-N015A-1,B-1,C-1,D-1)	≤13
3. Flow - High (B21-PDT-N006A,B,C,D; B21-PDT-N007A,B,C,D; B21-PDT-N008A,B,C,D; B21-PDT-N009A,B,C,D) (B21-PDTM-N006A-1,B-1,C-1,D-1; B21-PDTM-N007A-1,B-1,C-1,D-1; B21-PDTM-N008A-1,B-1,C-1,D-1; B21-PDTM-N009A-1,B-1,C-1,D-1)	≤0.5(c) ≤13(h)
d. Main Steam Line Tunnel Temperature - High (B21-TS-N010A,B,C,D; B21-TS-N011A,B,C,D; B21-TS-N012A,B,C,D; B21-TS-N013A,B,C,D)	≤13
e. Condenser Vacuum - Low (B21-PT-N056A,B,C,D) (B21-PTM-N056A-1,B-1,C-1,D-1)	≤13

TABLE 3.3.2-3 (Continued)

ISOLATION SYSTEM INSTRUMENTATION RESPONSE TIME

TRIP FUNCTION AND INSTRUMENT NUMBER	RESPONSE TIME (Seconds)(a)(d)
PRIMARY CONTAINMENT ISOLATION (Continued)	
f. Turbine Building Area Temperature - High (B21-TS-3225A,B,C,D; B21-TS-3226A,B,C,D; B21-TS-3227A,B,C,D; B21-TS-3228A,B,C,D; B21-TS-3229A,B,C,D; B21-TS-3230A,B,C,D; B21-TS-3231A,B,C,D; B21-TS-3232A,B,C,D)	NA
g. Reactor Building Exhaust Radiation - High(b) (D12-RE-N010A,B) (D12-RM-K609A,B)	NA
2. SECONDARY CONTAINMENT ISOLATION	
a. Reactor Building Exhaust Radiation - High(b) (D12-RE-N010A,B) (D12-RM-K609A,B)	≤13
b. Drywell Pressure - High (C71-PT-N002A,B,C,D) (C71-PTM-N002A-1,B-1,C-1,D-1)	≤13
c. Reactor Vessel Water Level - Low, Level 2 (B21-LT-N024A-1,B-1; B21-LT-N025A-1,B-1)	≤ 1.0(c) ≤13(h)
(B21-LTM-N024A-1,B-1; B21-LTM-N025A-1,B-1)	
3. REACTOR WATER CLEANUP SYSTEM ISOLATION	
a. Δ Flow - High (G31-PDS-N603-1A,1B)	≤45(g)
b. Area Temperature - High (G31-TS-N600A,B,C,D,E,F)	≤13
c. Area Ventilation Δ Temperature - High (G31-TDS-N602A,B,C,D,E,F)	≤13
d. SLCS Initiation (C41A-S1)	NA
e. Reactor Vessel Water Level - Low, Level 2 (B21-LT-N024A-1,B-1; B21-LT-N025A-1,B-1)	≤ 1.0(c) ≤13(h)
(B21-LTM-N024A-1,B-1; B21-LTM-N025A-1,B-1)	
f. Δ Flow - High - Time Delay Relay (G31-R616C,D)	NA

TABLE 3.3.2-3 (Continued)

ISOLATION SYSTEM INSTRUMENTATION RESPONSE TIME

TRIP FUNCTION AND INSTRUMENT NUMBER	RESPONSE TIME (Seconds)[a][d]
4. CORE STANDBY COOLING SYSTEMS ISOLATION	
a. High Pressure Coolant Injection System Isolation	
1. HPCI Steam Line Flow - High (E41-PDT-N004; E41-PDT-N005) (E41-PDTS-N004-2; E41-PDTS-N005-2)	≤13[e]
2. HPCI Steam Line Flow - High Time Delay Relay (E41-TDR-K33; E41-TDR-K43)	NA
3. HPCI Steam Supply Pressure - Low (E41-PSL-N001A,B,C,D)	≤13
4. HPCI Steam Line Tunnel Temperature - High (E41-TS-3314; E41-TS-3315; E41-TS-3316; E41-TS-3317; E41-TS-3318; E41-TS-3354; E41-TS-3488; E41-TS-3489)	≤13
5. Bus Power Monitor (E41-K55; E41-K56)	NA
6. HPCI Turbine Exhaust Diaphragm Pressure - High (E41-PSH-N012A,B,C,D)	NA
7. HPCI Steam Line Ambient Temperature - High (E51-TS-N603C,D)	NA
8. HPCI Steam Line Area Δ Temperature - High (E51-TDS-N604C,D)	NA
9. HPCI Equipment Area Temperature - High (E41-TS-602A,B)	NA
10. Drywell Pressure - High (E11-PT-N011C,D) (E11-PTS-N011C-2,D-2)	NA

TABLE 3.3.2-3 (Continued)

ISOLATION SYSTEM INSTRUMENTATION RESPONSE TIME

TRIP FUNCTION AND INSTRUMENT NUMBER	RESPONSE TIME (Seconds)(a)(d)
b. Reactor Core Isolation Cooling System Isolation	
1. RCIC Steam Line Flow - High (E51-PDT-N017; E51-PDT-N018) (E51-PDTS-N017-2; E51-PDTS-N018-2)	≤ 13(f)
2. RCIC Steam Line Flow - High Time Delay Relay (E51-TDR-K32; E51-TDR-K12)	NA
3. RCIC Steam Supply Pressure - Low (E51-PS-N019A,B,C,D)	NA
4. RCIC Steam Line Tunnel Temperature - High (E51-TS-3319; E51-TS-3320; E51-TS-3321; E51-TS-3322; E51-TS-3323; E51-TS-3355; E51-TS-3487)	NA
5. Bus Power Monitor (E51-K42; E51-K43)	NA
6. RCIC Turbine Exhaust Diaphragm Pressure - High (E51-PS-N012A,B,C,D)	NA
7. RCIC Steam Line Ambient Temperature - High (E51-TS-N603A,B)	NA
8. RCIC Steam Line Area Δ Temperature - High (E51-TDS-N604A,B)	NA
9. RCIC Equipment Room Ambient Temperature - High (E51-TS-N602A,B)	NA
10. RCIC Equipment Room Δ Temperature - High (E51-TDS-N601A,B)	NA
11. RCIC Steam Line Tunnel Temperature - High Time Delay Relay (E51-KC-M602A,B)	NA
12. Drywell Pressure - High (E11-PT-N011A,B) (E11-PTS-N011A-2,B-2)	NA

TABLE 3.3.2-3 (Continued)

ISOLATION SYSTEM INSTRUMENTATION RESPONSE TIME

TRIP FUNCTION AND INSTRUMENT NUMBER	RESPONSE TIME (Seconds)(a)(d)
5. SHUTDOWN COOLING SYSTEM ISOLATION	
a. Reactor Vessel Water Level - Low, Level 1 (B21-LT-N017A-1,B-1,C-1,D-1) (B21-LTM-N017A-1 B-1,C-1,D-1)	NA
b. Reactor Steam Dome Pressure - High (B32 S-N018A-1,B)	NA

TABLE 3.3.2-3 (Continued)

ISOLATION SYSTEM INSTRUMENTATION RESPONSE TIME

NOTES

(a) The isolation system instrumentation response time shall be measured and recorded as a part of the ISOLATION SYSTEM RESPONSE TIME. Isolation system instrumentation response time specified includes any delay for diesel generator starting assumed in the accident analysis.

(b) Radiation monitors are exempt from response time testing. Response time shall be measured from detector output or the input of the first electronic component in the channel.

(c) Isolation actuation instrumentation response time for MSIVs only. No diesel generator delays assumed.

(d) Isolation system instrumentation response time specified for the Trip Function actuating each valve group/damper shall be added to isolation time shown in plant procedure _____ for valves in each valve group and secondary containment isolation damper to obtain ISOLATION SYSTEM RESPONSE TIME for each valve/damper.

(e) Includes time delay added by the time delay relay (E41-TDR-K33 and E41-TDR-K43).

(f) Includes time delay added by the time delay relay (E51-TDR-K32 and E51-TDR-K12).

(g) Includes time delay added by the time delay relays (G31-R616C,D).

(h) Isolation system instrumentation response time for associated valves except MSIVs.

TABLE 4.3.2-1

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION AND INSTRUMENT NUMBER	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED
1. PRIMARY CONTAINMENT ISOLATION				
a. Reactor Vessel Water Level -				
1. Low, Level 1				
(B21-LT-NO17A-1,B-1,C-1,D-1)	NA[a]	NA	R[b]	1, 2, 3
(B21-LTM-NO17A-1,B-1,C-1,D-1)	D	M	M	1, 2, 3
2. Low, Level 2				
(B21-LT-NO24A-1,B-1; B21-LT-NO25A-1,B-1)	NA[a]	NA	R[b]	1, 2, 3
(B21-LTM-NO24A-1,B-1; B21-LTM-NO25A-1,B-1)	D	M	M	1, 2, 3
b. Drywell Pressure - High				
(C71-PT-N002A,B,C,D)	NA[a]	NA	R[b]	1, 2, 3
(C71-PTM-N002A-1,B-1,C-1,D-1)	D	M	M	1, 2, 3
c. Main Steam Line				
1. Radiation - High (D12-RM-K603A,B,C,D; D12-RE-N006A,B,C,D)	D	W	R[d]	1, 2, 3
2. Pressure - Low				
(B21-PT-NO15A,B,C,D)	NA[a]	NA	R[b]	1
(B21-PTM-NO15A-1,B-1,C-1,D-1)	D	M	M	1
3. Flow - High				
(B21-PDT-NO06A,B,C,D; B21-PDT-NO07A,B,C,D; B21-PDT-NO08A,B,C,D; B21-PDT-NO09A,B,C,D)	NA[a]	NA	R[b]	1
(B21-PDTM-NO06A-1,B-1,C-1,D-1; B21-PDTM-NO07A-1,B-1,C-1,D-1; B21-PDTM-NO08A-1,B-1,C-1,D-1; B21-PDTM-NO09A-1,B-1,C-1,D-1)	D	M	M	1

TABLE 4.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION AND INSTRUMENT NUMBER	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED
PRIMARY CONTAINMENT ISOLATION (Continued)				
d. Main Steam Line Tunnel Temperature - High (B21-TS-N010A,B,C,D; B21-TS-N011A,B,C,D; B21-TS-N012A,B,C,D; B21-TS-N013A,B,C,D)	NA	M	R	1, 2, 3
e. Condenser Vacuum - Low (B21-PT-N056A,B,C,D)	NA[a]	NA	R[b]	1, 2[f]
(B21-PTM-N056A-1,B-1,C-1,D-1)	D	M	M	1, 2[f]
f. Turbine Building Area Temperature - High (B21-TS-3225A,B,C,D; B21-TS-3226A,B,C,D; B21-TS-3227A,B,C,D; B21-TS-3228A,B,C,D; B21-TS-3229A,B,C,D; B21-TS-3230A,B,C,D; B21-TS-3231A,B,C,D; B21-TS-3232A,B,C,D)	NA	M	R	1, 2, 3
g. Reactor Building Exhaust Radiation - High (D12-RE-N010A,B; D12-RM-K609A,B)	D	M	R	1, 2, 3

TABLE 4.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION AND INSTRUMENT NUMBER	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED
2. SECONDARY CONTAINMENT ISOLATION				
a. Reactor Building Exhaust Radiation - High (D12-RE-N010A,B; D12-RM-K609A,B)	D	M R	1,2,3,5, and[e]	
b. Drywell Pressure - High (C71-PT-N002A,B,C,D)	NA[a]	NA	R[b]	1, 2, 3
(C71-PTM-N002A-1,B-1,C-1,D-1)	D	M M	1, 2, 3	
c. Reactor Vessel Water Level - Low, Level 2 (B21-LT-N024A-1,B-1; B21-LT-N025A-1,B-1)	NA[a]	NA	R[b]	1, 2, 3
(B21-LTM-N024A-1,B-1; B21-LTM-N025A-1,B-1)	D	M M	1, 2, 3	
3. REACTOR WATER CLEANUP SYSTEM ISOLATION				
a. Δ Flow - High (G31-FDS-N603-1A,1B)	D	M R	1, 2, 3	
b. Area Temperature - High (G31-TS-N600A,B,C,D,E,F)	NA	M R	1, 2, 3	
c. Area Ventilation Δ Temperature - High (G31-TDS-N602A,B,C,D,E,F)	NA	M R	1, 2, 3	
d. SLCS Initiation (C41A-S1)	NA	R NA	1, 2, 3	
e. Reactor Vessel Water Level - Low, Level 2 (B21-LT-N024A-1,B-1; B21-LT-N025A-1,B-1)	NA[a]	NA	R[b]	1, 2, 3
(B21-LTM-N024A-1,B-1; B21-LTM-N025A-1,B-1)	D	M M	1, 2, 3	
f. Δ Flow - High - Time Delay Relay (G31-R616C,D)	NA	M R	1, 2, 3	

TABLE 4.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION AND INSTRUMENT NUMBER	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED
4. CORE STANDBY COOLING SYSTEMS ISOLATION				
a. High Pressure Coolant Injection System Isolation				
1. HPCI Steam Line Flow - High (E41-PDT-N004; E41-PDT-N005)	NA(a)	NA	R(b)	1, 2, 3
(E41-PDTS-N004-2; E41-PDTS-N005-2)	D	M	M	1, 2, 3
2. HPCI Steam Line Flow - High Time Delay Relay (E41-TDR-K33; E41-TDR-K43)	NA	R	R	1, 2, 3
3. HPCI Steam Supply Pressure - Low (E41-PSL-N001A,B,C,D)	NA	M	R	1, 2, 3
4. HPCI Steam Line Tunnel Temperature - High (E41-TS-3314; E41-TS-3315; E41-TS-3316; E41-TS-3317; E41-TS-3318; E41-TS-3354; E41-TS-3488; E41-TS-3489)	NA	M	Q	1, 2, 3
5. Bus Power Monitor (E41-K55; E41-K56)	NA	R	NA	1, 2, 3
6. HPCI Turbine Exhaust Diaphragm Pressure - High (E41-PSH-N012A,B,C,D)	NA	M	Q	1, 2, 3

TABLE 4.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION AND INSTRUMENT NUMBER	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED
CORE STANDBY COOLING SYSTEMS ISOLATION (Continued)				
7. HPCI Steam Line Ambient Temperature - High (E51-TS-N603C,D)	NA	M	R	1, 2, 3
8. HPCI Steam Line Area Δ Temperature - High (E51-TDS-N604C,D)	NA	M	R	1, 2, 3
9. HPCI Equipment Area Temperature - High (E41-TS-N602A,B)	NA	M	Q	1, 2, 3
10. Drywell Pressure - High (E11-PT-N011C,D)	NA(a)	NA	R(b)	1, 2, 3
(E11-PTS-N011C-2,D-2)	D	M	M	1, 2, 3
b. Reactor Core Isolation Cooling System Isolation				
1. RCIC Steam Line Flow - High (E51-PDT-N017; E51-PDT-N018)	NA(a)	NA	R(b)	1, 2, 3
(E51-PDTS-N017-2; E51-PDTS-N018-2)	D	M	M	1, 2, 3
2. RCIC Steam Line Flow - High Time Delay Relay (E51-TDR-K32; E51-TDR-K12)	NA	R	R	1, 2, 3
3. RCIC Steam Supply Pressure - Low (E51-PS-N019A,B,C,D)	NA	M	Q	1, 2, 3

TABLE 4.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION AND INSTRUMENT NUMBER	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED
CORE STANDBY COOLING SYSTEMS ISOLATION (Continued)				
4. RCIC Steam Line Tunnel Temperature - High (E51-TS-3319; E51-TS-3320; E51-TS-3321; E51-TS-3322; E51-TS-3323; E51-TS-3355; E51-TS-3487)	NA	M	R	1, 2, 3
5. Bus Power Monitor (E51-K42; E51-K43)	NA	R	NA	1, 2, 3
6. RCIC Turbine Exhaust Diaphragm Pressure - High (E51-PS-N012A,B,C,D)	NA	M	R	1, 2, 3
7. RCIC Steam Line Ambient Temperature - High (E51-TS-N603A,B)	NA	M	R	1, 2, 3
8. RCIC Steam Line Area Δ Temperature - High (E51-TDS-N604A,B)	NA	M	R	1, 2, 3
9. RCIC Equipment Room Ambient Temperature - High (E51-TS-N602A,B)	NA	M	Q	1, 2, 3
10. RCIC Equipment Room Δ Temperature - High (E51-TDS-N601A,B)	NA	M	Q	1, 2, 3
11. RCIC Steam Line Tunnel Temperature - High Time Delay Relay (E51-KC-M602A,B)	NA	M	R	1, 2, 3

TABLE 4.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION AND INSTRUMENT NUMBER	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED
CORE STANDBY COOLING SYSTEMS ISOLATION (Continued)				
12. Drywell Pressure - High				
(E11-PT-N011A,B)	NA[a]	NA	R[b]	1, 2, 3
(E11-PTS-N011A-2,B-2)	D M	M	1, 2, 3	
5. SHUTDOWN COOLING SYSTEM ISOLATION				
a. Reactor Vessel Water Level - Low, Level 1				
(B21-LT-N017A-1,B-1,C-1,D-1)	NA[a]	NA	R[b]	1, 2, 3
(B21-LTM-N017A-1,B-1,C-1,D-1)	D M	M	1, 2, 3	
b. Reactor Steam Dome Pressure - High (B32-PS-N018A-1,B)	NAS/U[c], M	R	1, 2, 3	

TABLE 4.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

NOTES

(a) The transmitter channel check is satisfied by the trip unit channel check. A separate transmitter check is not required.

(b) Transmitters are exempted from the monthly channel calibration.

(c) If not performed within the previous 31 days.

(d) Testing shall verify that the mechanical vacuum pump trips and the mechanical vacuum pump line valve closes.

(e) When handling irradiated fuel in the secondary containment.

(f) When reactor steam pressure $\geq$ 500 psig.

3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 PRIMARY CONTAINMENT

PRIMARY CONTAINMENT INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.1.1 PRIMARY CONTAINMENT INTEGRITY shall be maintained.

APPLICABILITY: CONDITIONS 1, 2, and 3.

ACTION:

Without PRIMARY CONTAINMENT INTEGRITY, restore PRIMARY CONTAINMENT INTEGRITY within 2 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.1 PRIMARY CONTAINMENT INTEGRITY shall be demonstrated:

a. At least once per 31 days by verifying that all primary containment penetrations* not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in position, except as provided in Specification 3.6.3.

b. By verifying each primary containment air lock OPERABLE per Specification 3.6.1.3.

c. By verifying the suppression pool OPERABLE per Specification 3.6.2.1.

* Except valves, blind flanges, and deactivated automatic valves which are located inside the containment, the MSIV Pit, the RWCU Penetration Triangle Room, or the TIP Room, and are locked, sealed, or otherwise secured in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except such verification need not be performed when the primary containment has not been de-inerted since the last verification or more often than once per 92 days. Those valves located above the drywell head requiring head shield block removal for verification will be verified prior to each replacement of the shield blocks.

CONTAINMENT SYSTEMS

PRIMARY CONTAINMENT LEAKAGE

LIMITING CONDITION FOR OPERATION

3.6.1.2 Primary containment leakage rates shall be limited to:

a. An overall integrated leakage rate of:

1. Less than or equal to L_a, 0.5 percent by weight of the containment air per 24 hours at P_a, 49 psig, or

2. Less than or equal to L_t, 0.357 percent by weight of the containment air per 24 hours at a reduced perssure of P_t, 25 psig.

b. A combined leakage rate of less than or equal to 0.60 L_a for all penetrations and all valves, except for main steam isolation valves*, subject to Type B and C tests when pressurized to P_a, 49 psig.

c. *Less than or equal to 11.5 scf per hour for any one main steam line isolation valve when tested at 25 psig.

APPLICABILITY: When PRIMARY CONTAINMENT INTEGRITY is required per Specification 3.6.1.1.

ACTION:

With:

a. The measured overall integrated primary containment leakage rate exceeding 0.75 L_a or 0.75 L_t, as applicable, or

b. The measured combined leakage rate for all penetrations and all valves, except for main steam line isolation valves*, subject to Type B and C tests exceeding 0.60 L_a, or

c. The measured leakage rate exceeding 11.5 scf per hour for any one main steam line isolation valve,

restore:

a. The overall integrated leakage rate(s) to less than or equal to 0.75 L_a or 0.75 L_t, as applicable, and

b. The combined leakage rate for all penetrations and all valves, except for main steam line isolation valves*, subject to Type B and C tests to less than or equal to 0.60 L_a, and

* Exemption to Appendix "J" of 10 CFR 50.

CONTAINMENT SYSTEMS

3/4.6.3 PRIMARY CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.6.3 The primary containment isolation valves and reactor instrumentation system isolation valves listed in plant procedure _____ shall be OPERABLE with isolation times as specified in plant procedure _____.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

a. With one or more of the primary containment isolation valve(s) specified in plant procedure _____ inoperable, operation may continue and the provision of Specification 3.0.4 are not applicable, provided that at least one isolation valve is maintained OPERABLE in each affected penetration that is open and either:

   1. The inoperable valve(s) is restored to OPERABLE status within 8 hours, or

   2. Each affected penetration line is isolated within 8 hours by use of at least one deactivated automatic valve secured in the isolation position, or

   3. Each affected penetration line is isolated within 8 hours by use of at least one closed manual valve or blind flange.

   Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. With one or more of the reactor instrumentation system isolation valves listed in plant procedure _____ inoperable, operation may continue and the provisions of Specifications 3.0.3 and 3.0.4 are not applicable provided that within 8 hours:

   1. The inoperable valve is returned to OPERABLE status, or

   2. The instrument line is isolated and the associated instrument is declared inoperable.

   Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS

4.6.3.1 Each primary containment isolation valve specified in plant procedure _____ shall be demonstrated OPERABLE prior to returning the valve to service after maintenance, repair, or replacement work is performed on the valve or its associated actuator, control, or power circuit by performance of the cycling test and verification of isolation time.

4.6.3.2 Each isolation valve specified in plant procedure _____ shall be demonstrated OPERABLE at least once per 18 months by verifying that on a containment isolation test signal each isolation valve actuates to its isolation position.

4.6.3.3 The isolation time of each power-operated or automatic valve specified in plant procedure _____ shall be determined to be within its limit when tested pursuant to Specification 4.0.5.

4.6.3.4 Each reactor instrumentation system isolation valve specified in plant procedure _____ shall be demonstrated OPERABLE at least once per 18 months by cycling each valve through at least one complete cycle of full travel.

CONTAINMENT SYSTEMS

3/4.6.4 VACUUM RELIEF

DRYWELL - SUPPRESSION CHAMBER VACUUM BREAKERS

LIMITING CONDITION FOR OPERATION

3.6.4.1 All drywell-suppression chamber vacuum breakers shall be OPERABLE and in the closed position with:

a. The position indicator OPERABLE, and

b. An opening set point of less than or equal to 0.5 psid.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

a. With no more than 2 drywell-suppression chamber vacuum breakers inoperable for opening but known to be in the closed position, the provisions of Specification 3.0.4 are not applicable and operation may continue until the next COLD SHUTDOWN provided the surveillance requirements of Specification 4.6.4.1.a are performed on the OPERABLE vacuum breakers within 4 hours and at least once per 15 days thereafter, until the inoperable vacuum breakers are restored to OPERABLE status.

b. With one drywell-suppression chamber vacuum breaker in the open position, as indicated by the position indicating system, the provisions of Specificaton 3.0.4 are not applicable and operation may continue provided the surveillance requirements of Specification 4.6.4.1.a are performed on the OPERABLE vacuum breakers, and the surveillance requirements of Specification 4.6.4.1.b are performed within 8 hours and at least once per 72 hours thereafter, until the inoperable vacuum breaker is restored to the closed position.

c. With the position indicator of any drywell-suppression chamber vacuum breaker inoperable, the provisions of Specification 3.0.4 are not applicable, and operation may continue provided the surveillance requirements of Specification 4.6.4.1.b are performed within 8 hours and at least once per 72 hours thereafter, until the inoperable position indicator is returned to OPERABLE status.

d. Otherwise, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS

4.6.4.1 Each drywell-suppression chamber vacuum breaker shall be demonstrated OPERABLE:

a. At least once per 31 days and after any discharge of steam to the suppression chamber from any source, by exercising each vacuum breaker through one complete cycle and verifying that each vacuum breaker is closed as indicated by the position indication system.

b. Whenever a vacuum breaker is in the open position, as indicated by the position indication system, by conducting a test that verifies that the differential pressure is maintained greater than 1/2 the initial delta P for one hour without N_2 makeup.

c. At least once per 18 months during shutdown by:

1. Verifying the opening setpoint, from the closed position, to be less than or equal to 0.5 psid,

2. Performance of a CHANNEL CALIBRATION that each position indicator indicates the vacuum breaker to be open if the vacuum breaker does not satisfy the delta P test in 4.6.4.1.b.

CONTAINMENT SYSTEMS

SUPPRESSION POOL - REACTOR BUILDING VACUUM BREAKERS

LIMITING CONDITION FOR OPERATION

3.6.4.2 All suppression pool-Reactor Building vacuum breakers shall be OPERABLE with:

a. an opening setpoint of less than or equal to 0.5 psid

b. an OPERABLE Nitrogen Backup System consisting of two independent subsystems (one subsystem for each vacuum breaker).

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

a. With one suppression pool-Reactor Building vacuum breaker inoperable for opening but known to be in the closed position, restore the inoperable vacuum breaker 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.

b. With one Nitrogen Backup System subsystem inoperable, verify the remaining subsystem is OPERABLE and restore the inoperable subsystem to OPERABLE status within 31 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

c. With both Nitrogen Backup System subsystems inoperable, restore at least one inoperable subsystem to OPERABLE status within 7 days; otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

SURVEILLANCE REQUIREMENTS

4.6.4.2.1 Each suppression pool-Reactor Building vacuum breaker shall be demonstrated OPERABLE:

a. At least once per 92 days by:

   1. Manually verifying that each vacuum breaker check valve is free to open, and

   2. Cycling each vacuum breaker butterfly valve through at least one complete cycle of full travel.

b. At least once per 18 months by:

   1. Demonstrating that the force required to open each vacuum breaker check valve does not exceed 0.5 psid.

SURVEILLANCE REQUIREMENTS (Continued)

2. Demonstrating that the vacuum breaker butterfly valve opens at -0.45 ± 0.05 psid, drywell pressure going negative relative to Reactor Building pressure.

3. Visual inspections.

4.6.4.2.2 The Nitrogen Backup System shall be demonstrated OPERABLE:

a. At least once per 24 hours by verifying that each subsystem is pressurized to greater than or equal to 1130 psig.

b. At least once per 18 months by verifying that each subsystem maintains system pressure with a leakage rate of less than or equal to .65 SCFM at a starting pressure greater than or equal to 1130 psig.

c. At least once per 18 months by performing a logic system functional test to ensure actuation of the nitrogen backup system.

CONTAINMENT SYSTEMS

3/4.6.5 SECONDARY CONTAINMENT

SECONDARY CONTAINMENT INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.5.1 SECONDARY CONTAINMENT INTEGRITY shall be maintained.

APPLICABILITY: CONDITIONS 1, 2, 3, 5, and *.

ACTION:

Without SECONDARY CONTAINMENT INTEGRITY, restore SECONDARY CONTAINMENT INTEGRITY within 8 hours, or;

a. In CONDITION 1, 2, or 3, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. In CONDITION 5 or *, suspend irradiated fuel handling in the secondary containment, CORE ALTERATIONS, and activities which could reduce the SHUTDOWN MARGIN. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.6.5.1 SECONDARY CONTAINMENT INTEGRITY shall be demonstrated by verifying:

a. At least once per 92 days that each secondary containment isolation damper is OPERABLE or secured in the closed position per Specification 3.6.5.2.

b. At least once per 18 months by operating a standby gas treatment system for 1 hour and maintaining $\geq$ 1/4 inch of vacuum, water gauge, at a flow rate not exceeding 3000 CFM.

*When irradiated fuel is being handled in the secondary containment.

CONTAINMENT SYSTEMS

SECONDARY CONTAINMENT AUTOMATIC ISOLATION DAMPERS

LIMITING CONDITION FOR OPERATION

3.6.5.2 The secondary containment automatic isolation dampers specified in plant procedure _____ shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3, 5, and *.

ACTION:

With one or more of the secondary containment isolation dampers specified in plant procedure _____ inoperable, operation may continue and the provisions of Specification 3.0.4 are not applicable, provided that at least one isolation damper is maintained OPERABLE in each affected penetration that is open, and;

a. The inoperable damper is restored to OPERABLE status within 8 hours, or

b. The affected penetration is isolated by use of a closed damper within 8 hours, or

c. SECONDARY CONTAINMENT INTEGRITY is demonstrated within 8 hours and the damper is restored to OPERABLE status within 7 days.

Otherwise, in OPERATIONAL CONDITIONS 1, 2, or 3, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

Otherwise, in OPERATIONAL CONDITION 5 or *, suspend irradiated fuel handling in the secondary containment, CORE ALTERATIONS, or activities that could reduce the SHUTDOWN MARGIN. The provisions of Specification 3.0.3 are not applicable.

*When irradiated fuel is being handled in the secondary containment.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS

4.6.5.2 Each secondary containment automatic isolation damper specified in plant procedure _____ shall be demonstrated OPERABLE:

a. At least once per 92 days by cycling each automatic isolation damper testable during plant operation through at least one complete cycle of full travel.

b. Prior to returning the damper to service after maintenance, repair, or replacement work is performed on the damper or its associated actuator, control, or power circuit by performance of the cycling test and verification of isolation time.

c. At least once per 18 months during COLD SHUTDOWN or REFUELING by:

1. Cycling each automatic damper through at least one complete cycle of full travel and measuring the isolation time, and

2.* Verifying that on a secondary containment isolation test signal each automatic damper actuates to its isolation position.

*For this verification scheduled to be completed by February 25, 1981, a onetime-only exemption is allowed to extend this verification until "before the completion of the Spring 1981 outage," scheduled to commence in March, 1981.

CONTAINMENT SYSTEMS

3/4.6.6 CONTAINMENT ATMOSPHERE CONTROL

STANDBY GAS TREATMENT SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.6.1 Two independent standby gas treatment subsystems shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3, 5, and *.

ACTION:

a. With one standby gas treatment subsystem inoperable:

   1. In OPERATIONAL CONDITION 1, 2, or 3, restore the inoperable subsystem 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.

   2. In OPERATIONAL CONDITION 5 or *, restore the inoperable subsystem to OPERABLE status within 31 days or suspend irradiated fuel handling in the secondary containment, CORE ALTERATIONS, or operations that could reduce the SHUTDOWN MARGIN. The provisions of Specification 3.0.3 are not applicable.

b. With both standby gas treatment subsystems inoperable;

   1. In OPERATIONAL CONDITION 1, 2, or 3, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.

   2. In OPERATIONAL CONDITION 5 or *, suspend all irradiated fuel handling in the secondary containment, CORE ALTERATIONS, or operations that could reduce the SHUTDOWN MARGIN. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.6.6.1 Each standby gas treatment subsystem shall be demonstrated OPERABLE:

   a. At least once per 31 days by initiating, from the control room, flow through the HEPA filters and charcoal absorbers, and verifying that the subsystem operates for at least 10 hours with the heaters on automatic control.

*When irradiated fuel is being handled in the secondary containment.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal absorber housings, or (2) following painting, fire or chemical release in any ventilation zone, communicating with the system by:

1. Verifying that the cleanup system satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a., C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 1, July 1976, and the system flow rate is 3000 cfm ± 10%.

2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 1, July 1976, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 1, July 1976.

3. Verifying a system flow rate of 3000 cfm ± 10% during system operation when tested in accordance with ANSI N510-1975.

c. After every 720 hours of charcoal absorber operation by verifying within 31 days after removal that a laboratory analysis of representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 1, July 1976, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 1, July 1976.

d. At least once per 18 months by:

1. Verifying that the pressure drop across the combined HEPA filters and charcoal absorber banks is less than 8.5 inches Water Gauge while operating the filter train at a flow rate of 3000 cfm ± 10%.

2.* Verifying that the filter train starts on each secondary containment isolation test signal.

3. Verifying that the heaters will dissipate at least 15.2 kw when tested in accordance with ANSI N510-1975.

* For the performance of this surveillance scheduled to be completed by February 25, 1981, a onetime-only exemption is allowed to extend this surveillance until "before the completion of the Spring 1981 outage," scheduled to commence in March, 1982.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove $\geq$ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the system at a flow rate of 3000 cfm $\pm$ 10%.

f. After each complete or partial replacement of a charcoal absorber bank by verifying that the charcoal absorbers remove $\geq$ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the system at a flow rate of 3000 cfm $\pm$ 10%.

CONTAINMENT SYSTEMS

CONTAINMENT ATMOSPHERE DILUTION SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.6.2 The containment atmosphere dilution (CAD) system shall be OPERABLE with:

a. An OPERABLE flow path capable of supplying nitrogen to the drywell, and

b. A minimum supply of 4350 gallons of liquid nitrogen.

APPLICABILITY: CONDITION 1*.

ACTION:

With the CAD system inoperable, restore the CAD system to OPERABLE status within 31 days or be in at least STARTUP within the next 8 hours. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.6.6.2 The CAD system shall be demonstrated to be OPERABLE;

a. At least once per 31 days by verifying that:

1. The system contains a minimum of 4350 gallons of liquid nitrogen, and

2. Each valve (manual, power-operated, or automatic) in the flow path not locked, sealed, or otherwise secured in position, is in its correct position.

b. At least once per 18 months by:

1. Cycling each power operated (excluding automatic) valve in the flow path through at least one complete cycle of full travel, and

2. Verifying that each automatic valve in the flow path actuates to its correct position on a Group 2 and 6 isolation test signal.

* When oxygen concentration is required to be < 4% per Specification 3.6.6.3.

CONTAINMENT SYSTEMS

OXYGEN CONCENTRATION

LIMITING CONDITION FOR OPERATION

3.6.6.3 The primary containment atmosphere oxygen concentration shall be less than 4% by volume during the period from:

a. Within 24 hours after THERMAL POWER > 15% of RATED THERMAL POWER, to

b. Within 24 hours prior to a scheduled reduction of THERMAL POWER to < 15% of RATED THERMAL POWER.

APPLICABILITY: CONDITION 1.

ACTION:

With the oxygen concentration in the primary containment exceeding the limit, be in at least STARTUP within 8 hours.

SURVEILLANCE REQUIREMENTS

4.6.6.3 The oxygen concentration in the primary containment shall be verified to be within the limit within 24 hours after THERMAL POWER > 15% of RATED THERMAL POWER and at least once per 7 days thereafter.

CONTAINMENT SYSTEMS

GAS ANALYZER SYSTEMS

LIMITINC CONDITION FOR OPERATION

3.6.6.4 Two independent gas analyzer systems for the drywell and suppression chamber shall be OPERABLE with each system consisting of an oxygen analyzer and a hydrogen analyzer.

APPLICABILITY: OPERATIONAL CONDITION 1.

ACTION:

a. With one oxygen and/or one hydrogen analyzer inoperable, restore at least two oxygen and two hydrogen analyzers to OPERABLE status within 31 days or be in at least STARTUP within the next 8 hours. The provisions of Specification 3.0.4 are not applicable.

b. With no gas analyzer OPERABLE for oxygen and/or hydrogen, be in at least STARTUP within 8 hours.

SURVEILLANCE REQUIREMENTS

4.6.6.4 Each gas analyzer system (CAC-AT-4409, Divison I and CAC-AT-4410, Division II) shall be demonstrated OPERABLE at least once per 92 days by performing a CHANNEL CALIBRATION using standard gas samples containing a nominal:

a. Zero volume percent hydrogen, balance nitrogen.

b. Seven to ten volume percent hydrogen, balance nitrogen.

c. Twenty-five to thirty volume percent hydrogen, balance nitrogen.

d. Zero volume percent oxygen, balance nitrogen.

e. Seven to ten volume percent oxygen, balance nitrogen.

f. Twenty to twenty-five volume percent oxygen, balance nitrogen.

3/4.6.3 PRIMARY CONTAINMENT ISOLATION VALVES (Continued)

A list of automatic closing primary containment isolation valves and their associated closure times shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The addition and deletion of primary containment isolation valves shall be made in accordance with Section 50.59 of 10 CFR Part 50.

3/4.6.4 VACUUM RELIEF

Vacuum relief breakers are provided to equalize the pressure between the drywell and suppression pool and the suppression pool and reactor building. This system will maintain the structural integrity of the containment under conditions of large differential pressures.

The vacuum breakers between the drywell and the suppression pool must not be inoperable in the open position since this would allow bypassing of the suppression pool in case of an accident. There are an adequate number of valves to provide some redundancy so that operation may continue with no more than 2 vacuum breakers inoperable and secured in the closed position.

Each set of vacuum relief valves between the suppression chamber and reactor building provides 100% relief, which may by required in the unlikely event that negative pressures develop in the primary containment.

The Nitrogen Backup System provides backup motive power for these suppression pool-reactor building vacuum breakers on a loss of instrument air. The normal non-interruptible instrument air system for these vacuum breakers is designed as a Seismic Class I system supplied by air compressors powered from the emergency buses. The Nitrogen System serves as a backup to that air system and thus the loss of the Nitrogen System, or portions thereof, does not make the vacuum breakers inoperable. The design allows for the out of service times in Actions b and c. The Nitrogen Backup System is added to the Suppression Pool-Reactor Building Vacuum Breaker specification to satisfy NRC concerns relative to 10 CFR 50.44(c)(3) as addressed in the Brunswick Safety Evaluation Report dated October 30, 1986 concerning Generic Letter 84-09. Pressurization to 1130 psig assures sufficient system capacity to provide 24 hours of operation with design valve actuation and system leakage.

3/4.6.5 SECONDARY CONTAINMENT

Secondary containment is designed to minimize any ground level release of radioactive material which may result from an accident. The reactor building provides secondary containment during normal operation when the drywell is sealed and in service. When the reactor is shut down, or during refueling, the drywell may be open and the reactor building then becomes the primary containment.

3/4.6.5 SECONDARY CONTAINMENT (Continued)

Establishing and maintaining a vacuum in the building with the standby gas treatment system, once per 18 months, along with the surveillance of the valves, is adequate to ensure that there are no violations of the integrity of the secondary containment.

A list of secondary containment automatic isolation dampers shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The addition and deletion of secondary containment automatic isolation dampers shall be made in accordance with Section 50.59 of 10 CFR Part 50.

3/4.6.6 CONTAINMENT ATMOSPHERE CONTROL

The OPERABILITY of the containment iodine filter trains ensures that sufficient iodine removal capability will be available in the event of a LOCA. The reduction in containment iodine inventory reduces the resulting site boundary radiation doses associated with containment leakage. The operation of this system and resultant iodine removal capacity are consistent with the assumptions used in the LOCA analyses.

ENCLOSURE 4

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
NRC DOCKETS 50-325 & 50-324
OPERATING LICENSES DPR-71 & DPR-62
REQUEST FOR LICENSE AMENDMENT

UNIT 2 TECHNICAL SPECIFICATION PAGES

INDEX

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

INDEX

BASES

SECTION PAGE

DEFINITIONS

OFFSITE DOSE CALCULATION MANUAL (ODCM)

The OFFSITE DOSE CALCULATIONAL MANUAL (ODCM) is a manual which contains the current methodology and parameters to be used to calculate offsite doses resulting from the release of radioactive gaseous and liquid effluents; the methodology to calculate gaseous and liquid effluent monitoring instrumentation alarm/trip setpoints; and, the requirements of the environmental radiological monitoring program.

OPERABLE - OPERABILITY

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

OPERATIONAL CONDITION

An OPERATIONAL CONDITION shall be any one inclusive combination of mode switch position and average reactor coolant temperature as indicated in Table 1.2.

PHYSICS TESTS

PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation and are 1) described in Section 13 of the FSAR, 2) authorized under the provisions of 10 CFR 50.59, or 3) otherwise approved by the Commission.

PRESSURE BOUNDARY LEAKAGE

PRESSURE BOUNDARY LEAKAGE shall be leakage through a non-isolable fault in a reactor coolant system component body, pipe wall, or vessel wall.

PRIMARY CONTAINMENT INTEGRITY

PRIMARY CONTAINMENT INTEGRITY shall exist when:

a. All penetrations required to be closed during accident conditions are either:

   1. Capable of being closed by an OPERABLE containment automatic isolation valve system, or

   2. Closed by at least one manual valve, blind flange, or deactivated automatic valve secured in its closed position, except as provided in Specification 3.6.3.

TABLE 3.3.2-1

ISOLATION ACTUATION INSTRUMENTATION

TRIP FUNCTION AND INSTRUMENT NUMBER	VALVE GROUPS OPERATED BY SIGNAL(a)	MINIMUM NUMBER OPERABLE CHANNELS PER TRIP SYSTEM(b)(c)	APPLICABLE OPERATIONAL CONDITION	ACTION
1. PRIMARY CONTAINMENT ISOLATION				
a. Reactor Vessel Water Level -				
1. Low, Level 1	2, 6	2	1, 2, 3	20
(B21-LT-N017A-1,B-1,C-1,D-1)	8	2	1, 2, 3	27
(B21-LTM-N017A-1,B-1,C-1,D-1)				
2. Low, Level 3	1	2	1, 2, 3	20
(B21-LT-N024A-1,B-1; B21-LT-N025A-1,B-1)				
(B21-LTS-N024A-1-2,B-1-2; B21-LTS-N025A-1-2,B-1-2)				
b. Drywell Pressure - High	2, 6	2	1, 2, 3	20
(C72-PT-N002A,B,C,D)				
(C72-PTM-N002A-1,B-1,C-1,D-1)				
c. Main Steam Line				
1. Radiation - High	1	2	1, 2, 3	21
(D12-RE-N006A,B,C,D)				
(D12-RM-K603A,B,C,D)				
2. Pressure - Low	1(i)	2	1	22
(B21-PT-N015A,B,C,D)				
(B21-PTM-N015A-1,B-1,C-1,D-1)				
3. Flow - High	1(i)	2/line	1	22
(B21-PDT-N006A,B,C,D; B21-PDT-N007A,B,C,D; B21-PDT-N008A,B,C,D; B21-PDT-N009A,B,C,D)				
(B21-PDTM-N006A-1,B-1,C-1,D-1; B21-PDTM-N007A-1,B-1,C-1,D-1; B21-PDTM-N008A-1,B-1,C-1,D-1; B21-PDTM-N009A-1,B-1,C-1,D-1)				

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

TRIP FUNCTION AND INSTRUMENT NUMBER	VALVE GROUPS OPERATED BY SIGNAL(a)	MINIMUM NUMBER OPERABLE CHANNELS PER TRIP SYSTEM(b)(c)	APPLICABLE OPERATIONAL CONDITION	ACTION
PRIMARY CONTAINMENT ISOLATION (Continued)				
4. Flow - High (B21-PDTS-N006A-2; B21-PDTS-N007B-2; B21-PDTS-N008C-2; B21-PDTS-N009D-2)	1(i)	2	2, 3	21
d. Main Steam Line Tunnel Temperature - High (B21-TS-N010A,B,C,D; B21-TS-N011A,B,C,D; B21-TS-N012A,B,C,D; B21-TS-N013A,B,C,D)	1(i)	2(d)	1, 2, 3	21
e. Condenser Vacuum - Low (B21-PT-N056A,B,C,D) (B21-PTM-N056A-1,B-1,C-1,D-1)	1(i)	2	1, 2(e)	21
f. Turbine Building Area Temperature - High (B21-TS-3225A,B,C,D; B21-TS-3226A,B,C,D; B21-TS-3227A,B,C,D; B21-TS-3228A,B,C,D; B21-TS-3229A,B,C,D; B21-TS-3230A,B,C,D; B21-TS-3231A,B,C,D; B21-TS-3232A,B,C,D)	1(i)	4(d)	1, 2, 3	21
g. Reactor Building Exhaust Radiation - High (D12-RE-N010A,B) (D12-RM-K609A,B)	6	1	1, 2, 3	20

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

TRIP FUNCTION AND INSTRUMENT NUMBER	VALVE GROUPS OPERATED BY SIGNAL(a)	MINIMUM NUMBER OPERABLE CHANNELS PER TRIP SYSTEM(b)(c)	APPLICABLE OPERATIONAL CONDITION	ACTION
2. SECONDARY CONTAINMENT ISOLATION				
a. Reactor Building Exhaust Radiation - High (D12-RE-N01GA,B)	(k)	1	1, 2, 3, 5, and *	23
(D12-RM-K609A,B)	6	1	1, 2, 3	20
b. Drywell Pressure - High: (C72-PT-N002A,B,C,D)	(k)	2	1, 2, 3	23
(C72-PTM-NOO2A-1,B-1,C-1,D-1)	2, 6	2	1, 2, 3	20
c. Reactor Vessel Water Level - Low, Level 2 (B21-LT-NO24A-1,B-1; B21-LT-NO25A-1,B-1)	(k)	2	1, 2, 3	23
(B21-LTM-NO24A-1-1,B-1-1; B21-LTM-NO25A-1-1,B-1-1)	3	2	1, 2, 3	24
3. REACTOR WATER CLEANUP SYSTEM ISOLATION				
a. Δ Flow - High (G31-FDS-N603-1A,1B)	3	1	1, 2, 3	24
b. Area Temperature - High (G31-TS-N600A,B,C,D,E,F)	3	2	1, 2, 3	24
c. Area Ventilation Δ Temperature - High (G31-TDS-N602A,B,C,D,E,F)	3	2	1, 2. 3	24
d. SLCS Initiation (C41A-S1)	3 (f)	NA	1, 2, 3	24

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

TRIP FUNCTION AND INSTRUMENT NUMBER	VALVE GROUPS OPERATED BY SIGNAL(a)	MINIMUM NUMBER OPERABLE CHANNELS PER TRIP SYSTEM(b)(c)	APPLICABLE OPERATIONAL CONDITION	ACTION
REACTOR WATER CLEANUP SYSTEM ISOLATION (Continued)				
e. Reactor Vessel Water Level - Low, Level 2 (B21-LT-NO24A-1,B-1; B21-LT-NO25A-1,B-1)	3	2	1, 2, 3	24
(B21-LTM-NO24A-1-1,B-1-1; B21-LTM-NO25A-1-1,B-1-1)				
f. Δ Flow - High - Time Delay Relay (G31-R616C,D)	NA	1	1, 2, 3	24
4. CORE STANDBY COOLING SYSTEMS ISOLATION				
a. High Pressure Coolant Injection System Isolation				
1. HPCI Steam Line Flow - High (E41-PDT-NO04; E41-PDT-NO05)	4	1	1, 2, 3	25
(E41-PDTS-NO04-2; E41-PDTS-NO05-2)				
2. HPCI Steam Line Flow - High Time Delay Relay (E41-TDR-K33; E41-TDR-K43)	NA	1	1, 2, 3	25
3. HPCI Steam Supply Pressure - Low (E41-PSL-NO01A,B,C,D)	4 7(j)	2 1	1, 2, 3 1, 2, 3	25 25

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

TRIP FUNCTION AND INSTRUMENT NUMBER	VALVE GROUPS OPERATED BY SIGNAL(a)	MINIMUM NUMBER OPERABLE CHANNELS PER TRIP SYSTEM(b)(c)	APPLICABLE OPERATIONAL CONDITION	ACTION
CORE STANDBY COOLING SYSTEMS ISOLATION (Continued)				
4. HPCI Steam Line Tunnel Temperature - High (E41-TS-3314; E41-TS-3315; E41-TS-3316; E41-TS-3317; E41-TS-3318; E41-TS-3354; E41-TS-3488; E41-TS-3489)	4	2	1, 2, 3	25
5. Bus Power Monitor (E41-K55; E41-K56)	NA(g)	1/bus	1, 2, 3	26
6. HPCI Turbine Exhaust Diaphragm Pressure - High (E41-PSH-N012A,B,C,D)	4	2	1, 2, 3	25
7. HPCI Steam Line Ambient Temperature - High (E51-TS-N603C,D)	4	1	1, 2, 3	25
8. HPCI Steam Line Area Δ Temperature - High (E51-TDS-N604C,D)	4	1	1, 2, 3	25
9. HPCI Equipment Area Temperature - High (E41-TS-N602A,B)	4	1	1, 2, 3	25
10. Drywell Pressure - High (E11-PT-N011C,D) (E11-PTS-N011C-2,D-2)	7(j)	1	1, 2, 3	25

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

TRIP FUNCTION AND INSTRUMENT NUMBER	VALVE GROUPS OPERATED BY SIGNAL(a)	MINIMUM NUMBER OPERABLE CHANNELS PER TRIP SYSTEM(b)(c)	APPLICABLE OPERATIONAL CONDITION	ACTION
b. Reactor Core Isolation Cooling System Isolation				
1. RCIC Steam Line Flow - High (E51-PDT-N017; E51-PDT-N018) (E51-PDTS-N017-2; E51-PDTS-N018-2)	5	1	1, 2, 3	25
2. RCIC Steam Line Flow - High Time Delay Relay (E51-TDR-K32; E51-TDR-K12)	NA	1	1, 2, 3	25
3. RCIC Steam Supply Pressure - Low (E51-PS-N019A,B,C,D)	5 9(j)	2 1	1, 2, 3 1, 2, 3	25 25
4. RCIC Steam Line Tunnel Temperature - High (E51-TS-3319; E51-TS-3320; E51-TS-3321; E51-TS-3322; E51-TS-3323; E51-TS-3355; F51-TS-3487)	5	2	1, 2, 3	25
5. Bus Power Monitor (E51-K42; E51-K43)	NA (g)	1/bus	1, 2, 3	26
6. RCIC Turbine Exhaust Diaphragm Pres e - High (E' ;-N012A,B,C,D)	5	2	1, 2, 3	25

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

TRIP FUNCTION AND INSTRUMENT NUMBER	VALVE GROUPS OPERATED BY SIGNAL(a)	MINIMUM NUMBER OPERABLE CHANNELS PER TRIP SYSTEM(b)(c)	APPLICABLE OPERATIONAL CONDITION	ACTION
CORE STANDBY COOLING SYSTEMS ISOLATION (Continued)				
7. RCIC Steam Line Ambient Temperature - High (E51-TS-N603A,B)	5	1	1, 2, 3	25
8. RCIC Steam Line Area Δ Temperature - High (E51-TDS-N604A,B)	5	1	1, 2, 3	25
9. RCIC Equipment Room Ambient Temperature - High (E51-TS-N602A,B)	5	1	1, 2, 3	25
10. RCIC Equipment Room Δ Temperature - High (E51-TDS-N601A,B)	5	1	1, 2, 3	25
11. RCIC Steam Line Tunnel Temperature - High Time Delay Relay (E51-KC-M602A,B)	NA	1	1, 2, 3	25
12. Drywell Pressure - High (E11-PT-N011A,B) (E11-PTS-N011A-2,B-2)	9(j)	1	1, 2, 3	25
5. SHUTDOWN COOLING SYSTEM ISOLATION				
a. Reactor Vessel Water Level - Low, Level 1 (B21-LT-N017A-1,B-1,C-1,D-1) (B21-LTM-N017A-1,B-1,C-1,D-1)	2, 6 8	2 2	1, 2, 3 1, 2, 3	20 27
b. Reactor Steam Dome Pressure - High (B32-PS-N018A-1,B)	8(h)	1	1, 2, 3	27

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

ACTIONS

ACTION 20 - Be in at least HOT SHUTDOWN within 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION 21 - Be in at least STARTUP with the main steam line isolation valves closed within 2 hours or be in at least HOT SHUTDOWN within 6 hours and in COLD SHUTDOWN within the next 30 hours.

ACTION 22 - Be in at least STARTUP within 2 hours.

ACTION 23 - Establish SECONDARY CONTAINMENT INTEGRITY with the standby gas treatment system operating within one hour.

ACTION 24 - Isolate the reactor water cleanup system.

ACTION 25 - Close the affected system isolation valves and declare the affected system inoperable.

ACTION 26 - Verify power availability to the bus at least once per 12 hours.

ACTION 27 - Deactivate the shutdown cooling supply and reactor vessel head spray isolation valves in the closed position until the reactor steam dome pressure is within the specified limits.

NOTES

* When handling irradiated fuel in the secondary containment.

(a) Refer to plant procedure _____ for valves in each valve group.

(b) A channel may be placed in an inoperable status for up to 2 hours for required surveillance without placing the trip system in the tripped condition provided at least one other OPERABLE channel in the same trip system is monitoring that parameter.

(c) With only one channel per trip system, 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 2 hours or the ACTION required by Table 3.3.2-1 for that Trip Function shall be taken.

(d) A channel is OPERABLE if 2 of 4 instruments in that channel are OPERABLE.

(e) With reactor steam pressure $\geq$ 500 psig.

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

NOTES

(f) Closes only RWCU outlet isolation valve.

(g) Alarm only.

(h) Does not isolate E11-F015A,B.

(i) Does not isolate B32-F019 or B32-F020.

(j) Valve isolation depends upon low steam supply pressure coincident with high drywell pressure.

(k) Secondary containment isolation dampers as listed in plant procedure _____.

TABLE 3.3.2-2

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

TRIP FUNCTION AND INSTRUMENT NUMBER	TRIP SETPOINT	ALLOWABLE VALUE
1. PRIMARY CONTAINMENT ISOLATION		
a. Reactor Vessel Water Level -		
1. Low, Level 1 (B21-LTM-N017A-1,B-1,C-1,D-1)	$\geq$ + 162.5 inches[(a)]	$\geq$ + 162.5 inches[(a)]
2. Low, Level 3 (B21-LTS-N024A-1-2,B-1-2; B21-LTS-N025A-1-2,B-1-2)	$\geq$ + 2.5 inches[(a)]	$\geq$ + 2.5 inches[(a)]
b. Drywell Pressure - High (C72-PTM-N002A-1,B-1,C-1,D-1)	$\leq$ 2 psig	$\leq$ 2 psig
c. Main Steam Line		
1. Radiation - High (D12-RM-K603A,B,C,D)	$\leq$ 3 x full power background	$\leq$ 3.5 x full power background
2. Pressure - Low (B21-PTM-N015A-1,B-1,C-1,D-1)	$\geq$ 825 psig	$\geq$ 825 psig
3. Flow - High (B21-PDTM-N006A-1,B-1,C-1,D-1; B21-PDTM-N007A-1,B-1,C-1,D-1; B21-PDTM-N008A-1,B-1,C-1,D-1; B21-PDTM-N009A-1,B-1,C-1,D-1)	$\leq$ 140% of rated flow	$\leq$ 140% of rated flow
4. Flow - High (B21-PDTS-N006A-2; B21-PDTS-N007B-2; B21-PDTS-N008C-2; B21-PDTS-N009D-2)	$\leq$ 40% of rated flow	$\leq$ 40% of rated flow

TABLE 3.3.2-2 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

TRIP FUNCTION AND INSTRUMENT NUMBER	TRIP SETPOINT	ALLOWABLE VALUE
PRIMARY CONTAINMENT ISOLATION (Continued)		
d. Main Steam Line Tunnel Temperature - High (B21-TS-N010A,B,C,D; B21-TS-N011A,B,C,D; B21-TS N012A,B,C,D; B21-TS-N013A,B,C,D)	≤ 200°F	≤ 200°F
e. Condenser Vacuum - Low (B21-PTM-N056A-1,B-1,C-1,D-1)	≥ 7 inches Hg vacuum	≥ 7 inches Hg vacuum
f. Turbine Building Area Temperature - High (B21-TS-3225A,B,C,D; B21-TS-3226A,B,C,D; B21-TS-3227A,B,C,D; B21-TS-3228A,B,C,D; B21-TS-3229A,B,C,D; B21-TS-3230A,B,C,D; B21-TS-3231A,B,C,D; B21-TS-3232A,B,C,D)	≤ 200°F	≤ 200°F
g. Reactor Building Exhaust Radiation - High (D12-RM-K609A,B)	≤ 11 mr/hr	≤ 11 mr/hr
2. SECONDARY CONTAINMENT ISOLATION		
a. Reactor Building Exhaust Radiation - High (D12-RM-K609A,B)	≤ 11 mr/hr	≤ 11 mr/hr
b. Drywell Pressure - High (C72-PTM-N002A-1,B-1,C-1,D-1)	≤ 2 psig	≤ 2 psig
c. Reactor Vessel Water Level - Low, Level 2 (B21-LTM-N024A-1-1,B-1-1; B21-LTM-N025A-1-1,B-1-1)	≥ + 112 inches(a)	≥ + 112 inches(a)

TABLE 3.3.2-2 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

TRIP FUNCTION AND INSTRUMENT NUMBER	TRIP SETPOINT	ALLOWABLE VALUE
3. REACTOR WATER CLEANUP SYSTEM ISOLATION		
a. Δ Flow - High (G31-FDS-N603-1A,1B)	≤ 53 gal/min	≤ 53 gal/min
b. Area Temperature - High (G31-TS-N600A,B,C,D,E,F)	≤ 150°F	≤ 150°F
c. Area Ventilation Δ Temperature - High (G31-TDS-N602A,B,C,D,E,F)	≤ 50°F	≤ 50°F
d. SLCS Initiation (C41A-S1)	NA	NA
e. Reactor Vessel Water Level - Low, Level 2 (B21-LTM-N024A-1-1,B-1-1; B21-LTM-N025A-1-1,B-1-1)	≥ + 112 inches(a)	≥ + 112 inches(a)
f. Δ Flow - High - Time Delay Relay (B31-R616C,D)	≤ 45 seconds	≤ 45 seconds
4. CORE STANDBY COOLING SYSTEMS ISOLATION		
a. High Pressure Coolant Injection System Isolation		
1. HPCI Steam Line Flow - High (E41-PDTS-N004-2; E41-PDTS-N005-2)	≤ 300% of rated flow	≤ 300% of rated flow
2. HPCI Steam Line Flow - High Time Delay Relay (E41-TDR-K33; E41-TDR-K43)	3 ≤ t ≤ 7 seconds	3 ≤ t ≤ 12 seconds
3. HPCI Steam Supply Pressure - Low (E41-PSL-N001A,B,C,D)	≥ 100 psig	≥ 100 psig

TABLE 3.3.2-2 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

TRIP FUNCTION AND INSTRUMENT NUMBER	TRIP SETPOINT	ALLOWABLE VALUE
CORE STANDBY COOLING SYSTEMS ISOLATION (Continued)		
4. HPCI Steam Line Tunnel Temperature - High (E41-TS-3314; E41-TS-3315; E41-TS-3316; E41-TS-3317; E41-TS-3318; E41-TS-3354; E41-TS-3488; E41-TS-3489)	≤ 200°F	≤ 200°F
5. Bus Power Monitor (E41-K55; E41-K56)	NA	NA
6. HPCI Turbine Exhaust Diaphragm Pressure - High (E41-PSH-N012A,B,C,D)	≤ 10 psig	≤ 10 psig
7. HPCI Steam Line Ambient Temperature - High (E51-TS-N603C,D)	≤ 200°F	≤ 200°F
8. HPCI Steam Line Area Δ Temperature - High (E51-TDS-N604C,D)	≤ 50°F	≤ 50°F
9. HPCI Equipment Area Temperature - High (E41-TS-N602A,B)	≤ 175°F	≤ 175°F
10. Drywell Pressure - High (E11-PTS-N011C-2,D-2)	≤ 2 psig	≤ 2 psig
b. Reactor Core Isolation Cooling System Isolation		
1. RCIC Steam Line Flow - High (E51-PDTS-N017-2; E51-PDTS-N018-2)	≤ 300% of rated flow	≤ 300% of rated flow

TABLE 3.3.2-2 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

TRIP FUNCTION AND INSTRUMENT NUMBER	TRIP SETPOINT	ALLOWABLE VALUE
CORE STANDBY COOLING SYSTEMS ISOLATION (Continued)		
2. RCIC Steam Line Flow - High Time Delay Relay (E51-TDR-K32; E51-TDR-K12)	3 ≤ t ≤ 7 seconds	3 ≤ t ≤ 12 seconds
3. RCIC Steam Supply Pressure - Low (E51-PS-N019A,B,C,D)	≥ 50 psig	≥ 50 psig
4. RCIC Steam Line Tunnel Temperature - High (E51-TS-3319; E51-TS-3320; E51-TS-3321; E51-TS-3322; E51-TS-3323; E51-TS-3355; E51-TS-3487)	≤ 175°F	≤ 175°F
5. Bus Power Monitor (E51-K42; E51-K43)	NA	NA
6. RCIC Turbine Exhaust Diaphragm Pressure - High (E51-PS-N012A,B,C,D)	≤ 10 psig	≤ 10 psig
7. RCIC Steam Line Ambient Temperature - High (E51-TS-N603A,B)	≤ 200°F	≤ 200°F
8. RCIC Steam Line Area Δ Temperature - High (E51-TDS-N604A,B)	≤ 50°F	≤ 50°F
9. RCIC Equipment Room Ambient Temperature - High (E51-TS-N602A,B)	≤ 175°F	≤ 175°F

TABLE 3.3.2-2 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

TRIP FUNCTION AND INSTRUMENT NUMBER	TRIP SETPOINT	ALLOWABLE VALUE
CORE STANDBY COOLING SYSTEMS ISOLATION (Continued)		
10. RCIC Equipment Room Δ Temperature - High (E51-TDS-N601A,B)	≤ 50°F	≤ 50°F
11. RCIC Steam Line Tunnel Temperature - High Time Delay Relay (E51-KC-M602A,B)	≤ 30 minutes	≤ 30 minutes
12. Drywell Pressure - High (E11-PTS-N011A-2,B-2)	≤ 2 psig	≤ 2 psig
5. SHUTDOWN COOLING SYSTEM ISOLATION		
a. Reactor Vessel Water Level - Low, Level 1 (B21-LTM-N017A-1,B-1,C-1,D-1)	≥ + 162.5 inches(a)	≥ + 162.5 inches(a)
b. Reactor Steam Dome Pressure - High (B32-PS-N018A-1,B)	≤ 140 psig	≤ 140 psig

(a) Vessel water levels refer to REFERENCE LEVEL ZERO.

TABLE 3.3.2-3
ISOLATION SYSTEM INSTRUMENTATION RESPONSE TIME

TRIP FUNCTION AND INSTRUMENT NUMBER	RESPONSE TIME (Seconds)[a][d]
1. PRIMARY CONTAINMENT ISOLATION	
a. Reactor Vessel Water Level -	
1. Low, Level 1 (B21-LT-N017A-1,B-1,C-1,D-1) (B21-LTM-N017A-1,B-1,C-1,D-1)	≤13
2. Low, Level 3 (B21-LT-N024A-1,B-1; B21-LT-N025A-1,B-1) (B21-LTS-N024A-1-2,B-1-2; B21-LTS-N025A-1-2,B-1-2)	≤ 1.0[c] ≤ 13[h]
b. Drywell Pressure - High (C72-PT-N002A,B,C,D) (C72-PTM-N002A-1,B-1,C-1,D-1)	≤13
c. Main Steam Line 1. Radiation - High[b] (D12-RM-K603A,B,C,D)	≤1.0[c] ≤ 13[h]
2. Pressure - Low (B21-PT-N015A,B,C,D) (B21-PTM-N015A-1,B-1,C-1,D-1)	≤13
3. Flow - High (B21-PDT-N006A,B,C,D; B21-PDT-N007A,B,C,D; B21-PDT-N008A,B,C,D; B21-PDT-N009A,B,C,D) (B21-PDTM-N006A-1,B-1,C-1,D-1; B21-PDTM-N007A-1,B-1,C-1,D-1; B21-PDTM-N008A-1,B-1,C-1,D-1; B21-PDTM-N009A-1,B-1,C-1,D-1)	≤0.5[c] ≤ 13[h]
4. Flow - High (B21-PDTS-N006A-2; B21-PDTS-N007B-2; B21-PDTS-N008C-2; B21-PDTS-N009D-2)	≤0.5[c] ≤ 13[h]
d. Main Steam Line Tunnel Temperature - High (B21-TS-N010A,B,C,D; B21-TS-N011A,B,C,D; B21-TS-N012A,B,C,D; B21-TS-N013A,B,C,D)	≤13
e. Condenser Vacuum - Low (B21-PT-N056A,B,C,D) (B21-PTM-N056A-1,B-1,C-1,D-1)	≤13

TABLE 3.3.2-3 (Continued)

ISOLATION SYSTEM INSTRUMENTATION RESPONSE TIME

TRIP FUNCTION AND INSTRUMENT NUMBER	RESPONSE TIME (Seconds)(a)(d)
PRIMARY CONTAINMENT ISOLATION (Continued)	
f. Turbine Building Area Temperature - High (B21-TS-3225A,B,C,D; B21-TS-3226A,B,C,D; B21-TS-3227A,B,C,D; B21-TS-3228A,B,C,D; B21-TS-3229A,B,C,D; B21-TS-3230A,B,C,D; B21-TS-3231A,B,C,D; B21-TS-3232A,B,C,D)	NA
g. Reactor Building Exhaust Radiation - High(b) (D12-RE-N010A,B) (D12-RM-K609A,B)	NA
2. SECONDARY CONTAINMENT ISOLATION	
a. Reactor Building Exhaust Radiation - High(b) (D12-RE-N0010A,B) (D12-RM-K609A,B)	≤13
b. Drywell Pressure - High (C72-PT-N002A,B,C,D) (C72-PTM-N002A-1,B-1,C-1,D-1)	≤13
c. Reactor Vessel Water Level - Low, Level 2 (B21-LT-N024A-1,B-1; B21-LT-N025A-1,B-1) (B21-LTM-N024A-1-1,B-1-1; B21-LTM-N025A-1-1,B-1-1)	≤ 13
3. REACTOR WATER CLEANUP SYSTEM ISOLATION	
a. Δ Flow - High (G31-FDS-N603-1A,1B)	≤45(g)
b. Area Temperature - High (G31-TS-N600A,B,C,D,E,F)	≤13
c. Area Ventilation Δ Temperature - High (G31-TDS-N602A,B,C,D,E,F)	≤13
d. SLCS Initiation (C41A-S1)	NA
e. Reactor Vessel Water Level - Low, Level 2 (B21-LT-N024A-1,B-1; B21-LT-N025A-1,B-1) (B21-LTM-N024A-1-1,B-1-1; B21-LTM-N025A-1-1,B-1-1)	≤ 13
f. Δ Flow - High - Time Delay Relay (G31-R616C,D)	NA

TABLE 3.3.2-3 (Continued)

ISOLATION SYSTEM INSTRUMENTATION RESPONSE TIME

TRIP FUNCTION AND INSTRUMENT NUMBER	RESPONSE TIME (Seconds)[a][d]
4. CORE STANDBY COOLING SYSTEMS ISOLATION	
a. High Pressure Coolant Injection System Isolation	
1. HPCI Steam Line Flow - High (E41-PDT-N004; E41-PDT-N005) (E41-PDTS-N004-2; E41-PDTS-N005-2)	≤13[e]
2. HPCI Steam Line Flow - High Time Delay Relay (E41-TDR-K33; E41-TDR-K43)	NA
3. HPCI Steam Supply Pressure - Low (E41-PSL-N001A,B,C,D)	≤13
4. HPCI Steam Line Tunnel Temperature - High (E41-TS-3314; E41-TS-3315; E41-TS-3316; E41-TS-3317; E41-TS-3318; E41-TS-3354; E41-TS-3488; E41-TS-3489)	≤13
5. Bus Power Monitor (E41-K55; E41-K56)	NA
6. HPCI Turbine Exhaust Diaphragm Pressure - High (E41-PSH-N012A,B,C,D)	NA
7. HPCI Steam Line Ambient Temperature - High (E51-TS-N603C,D)	NA
8. HPCI Steam Line Area Δ Temperature - High (E51-TDS-N604C,D)	NA
9. HPCI Equipment Area Temperature - High (E41-TS-602A,B)	NA
10. Drywell Pressure - High (E11-PT-N011C,D) (E11-PTS-N011C-2,D-2)	NA

TABLE 3.3.2-3 (Continued)

ISOLATION SYSTEM INSTRUMENTATION RESPONSE TIME

TRIP FUNCTION AND INSTRUMENT NUMBER	RESPONSE TIME (Seconds)[a][d]
b. Reactor Core Isolation Cooling System Isolation	
1. RCIC Steam Line Flow - High (E51-PDT-N017; E51-PDT-N018) (E51-PDTS-N017-2; E51-PDTS-N018-2)	≤ 13[f]
2. RCIC Steam Line Flow - High Time Delay Relay (E51-TDR-K32; E51-TDR-K12)	NA
3. RCIC Steam Supply Pressure - Low (E51-PS-N019A,B,C,D)	NA
4. RCIC Steam Line Tunnel Temperature - High (E51-TS-3319; E51-TS-3320; E51-TS-3321; E51-TS-3322; E51-TS-3323; E51-TS-3355; E51-TS-3487)	NA
5. Bus Power Monitor (E51-K42; E51-K43)	NA
6. RCIC Turbine Exhaust Diaphram Pressure - High (E51-PS-N012A,B,C,D)	NA
7. RCIC Steam Line Ambient Temperature - High (E51-TS-N603A,B)	NA
8. RCIC Steam Line Area Δ Temperature - High (E51-TDS-N604A,B)	NA
9. RCIC Equipment Room Ambient Temperature - High (E51-TS-N602A,B)	NA
10. RCIC Equipment Room Δ Temperature - High (E51-TDS-N601A,B)	NA
11. RCIC Steam Line Tunnel Temperature - High Time Delay Relay (E51-KC-M602A,B)	NA
12. Drywell Pressure - High (E11-PT-N011A,B) (E11-PTS-N011A-2,B-2)	NA

TABLE 3.3.2-3 (Continued)

ISOLATION SYSTEM INSTRUMENTATION RESPONSE TIME

TRIP FUNCTION AND INSTRUMENT NUMBER	RESPONSE TIME (Seconds)[(a)(d)]
5. SHUTDOWN COOLING SYSTEM ISOLATION	
a. Reactor Vessel Water Level - Low, Level 1 (B21-LT-N017A-1,B-1,C-1,D-1) (B21-LTM-N017A-1,B-1,C-1,D-1)	NA
b. Reactor Steam Dome Pressure - High (B32-PS-N018A-1,B)	NA

TABLE 3.3.2-3 (Continued)

ISOLATION SYSTEM INSTRUMENTATION RESPONSE TIME

NOTES

(a) The isolation system instrumentation response time shall be measured and recorded as a part of the ISOLATION SYSTEM RESPONSE TIME. Isolation system instrumentation response time specified includes any delay for diesel generator starting assumed in the accident analysis.

(b) Radiation monitors are exempt from response time testing. Response time shall be measured from detector output or the input of the first electronic component in the channel.

(c) Isolation actuation instrumentation response time for MSIVs only. No diesel generator delays assumed.

(d) Isolation system instrumentation response time specified for the Trip Function actuating each valve group/damper shall be added to isolation time shown in plant procedure _____ for valves in each valve group and secondary containment isolation damper to obtain ISOLATION SYSTEM RESPONSE TIME for each valve/damper.

(e) Includes time delay added by the time delay relay (E41-TDR-K33 and E41-TDR-K43).

(f) Includes time delay added by the time delay relay (E51-TDR-K32 and E51-TDR-K12).

(g) Includes time delay added by the time delay relay (G31-R616C,D).

(h) Isolation system instrumentation response time for associated valves except MSIVs.

TABLE 4.3.2-1

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION AND INSTRUMENT NUMBER	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED
1. PRIMARY CONTAINMENT ISOLATION				
a. Reactor Vessel Water Level -				
1. Low, Level 1				
(B21-LT-N017A-1,B-1,C-1,D-1)	NA[a]	NA	R[b]	1, 2, 3
(B21-LTM-N017A-1,B-1,C-1,D-1)	D	M	M	1, 2, 3
2. Low, Level 3				
(B21-LT-N024A-1,B-1; B21-LT-N025A-1,B-1)	NA[a]	NA	R[b]	1, 2, 3
(B21-LTS-N024A-1-2,B-1-2; B21-LTS-N025A-1-2,B-1-2)	D	M	M	1, 2, 3
b. Drywell Pressure - High				
(C72-PT-N002A,B,C,D)	NA[a]	NA	R[b]	1, 2, 3
(C72-PTM-N002A-1,B-1,C-1,D-1)	D	M	M	1, 2, 3
c. Main Steam Line				
1. Radiation - High				
(D12-RM-K603A,B,C,D; D12-RE-N006A,B,C,D)	D	W	R[d]	1, 2, 3
2. Pressure - Low				
(B21-PT-N015A,B,C,D)	NA[a]	NA	R[b]	1
(B21-PTM-N015A-1,B-1,C-1,D-1)	D	M	M	1
3. Flow - High				
(B21-PDT-N006A,B,C,D; B21-PDT-N007A,B,C,D; B21-PDT-N008A,B,C,D; B21-PDT-N009A,B,C,D)	NA[a]	NA	R[b]	1
(B21-PDTM-N006A-1,B-1,C-1,D-1; B21-PDTM-N007A-1,B-1,C-1,D-1; B21-PDTM-N008A-1,B-1,C-1,D-1; B21-PDTM-N009A-1,B-1,C-1,D-1)	D	M	M	1

TABLE 4.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION AND INSTRUMENT NUMBER	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED
PRIMARY CONTAINMENT ISOLATION (Continued)				
4. Flow - High (B21-PDTS-N006A-2; B21-PDTS-N007B-2; B21-PDTS-N008C-2; B21-PDTS-N009D-2)	D	M	M	2, 3
d. Main Steam Line Tunnel Temperature - High (B21-TS-N010A,B,C,D; B21-TS-N011A,B,C,D; B21-TS-N012A,B,C,D; B21-TS-N013A,B,C,D)	NA	M	R	1, 2, 3
e. Condenser Vacuum - Low (B21-PT-N056A,B,C,D)	NA[a]	NA	R[b]	1, 2[f]
(B21-PTM-N056A-1,B-1,C-1,D-1)	D	M	M	1, 2[f]
f. Turbine Building Area Temperature - High (B21-TS-3225A,B,C,D; B21-TS-3226A,B,C,D; B21-TS-3227A,B,C,D; B21-TS-3228A,B,C,D; B21-TS-3229A,B,C,D; B21-TS-3230A,B,C,D; B21-TS-3231A,B,C,D; B21-TS-3232A,B,C,D)	NA	M	R	1, 2, 3
g. Reactor Building Exhaust Radiation - High (D12-RE-N010A,B; D12-RM-K609A,B)	D	M	R	1, 2, 3

TABLE 4.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION AND INSTRUMENT NUMBER	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED
2. SECONDARY CONTAINMENT ISOLATION				
a. Reactor Building Exhaust Radiation - High (D12-RE-N010A,B; D12-RM-K609A,B)	D	M	R	1,2,3,5, and (e)
b. Drywell Pressure - High (C72-PT-N002A,B,C,D)	NA(a)	NA	R(b)	1, 2, 3
(C72-PTM-N002A-1,B-1,C-1,D-1)	D	M	M	1, 2, 3
c. Reactor Vessel Water Level - Low, Level 2 (B21-LT-N024A-1,B-1; B21-LT-N025A-1,B-1)	NA(a)	NA	R(b)	1, 2, 3
(B21-LTM-N024A-1-1,B-1-1; B21-LTM-N025A-1-1,B-1-1)	D	M	M	1, 2, 3
3. REACTOR WATER CLEANUP SYSTEM ISOLATION				
a. Δ Flow - High (G31-FDS-N603-1A,1B)	D	M	R	1, 2, 3
b. Area Temperature - High (G31-TS-N600A,B,C,D,E,F)	NA	M	R	1, 2, 3
c. Area Ventilation Δ Temperature - High (G31-TDS-N602A,B,C,D,E,F)	NA	M	R	1, 2, 3
d. SLCS Initiation (C41A-S1)	NA	R	NA	1, 2, 3
e. Reactor Vessel Water Level - Low, Level 2 (B21-LT-N024A-1,B-1; B21-LT-N025A-1,B-1)	NA(a)	NA	R(b)	1, 2, 3
(B21-LTM-N024A-1-1,B-1-1; B21-LTM-N025A-1-1,B-1-1)	D	M	M	1, 2, 3
f. Δ Flow - High - Time Delay Relay (G31-R616C,D)	NA	M	R	1, 2, 3

TABLE 4.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION AND INSTRUMENT NUMBER	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED
4. CORE STANDBY COOLING SYSTEMS ISOLATION				
a. High Pressure Coolant Injection System Isolation				
1. HPCI Steam Line Flow - High (E41-PDT-N004; E41-PDT-N005)	NA[a]	NA	R[b]	1, 2, 3
(E41-PDTS-N004-2; E41-PDTS-N005-2)	D	M	M	1, 2, 3
2. HPCI Steam Line Flow - High Time Delay Relay (E41-TDR-K33; E41-TDR-K43)	NA	R	R	1, 2, 3
3. HPCI Steam Supply Pressure - Low (E41-PSL-N001A,B,C,D)	NA	M	R	1, 2, 3
4. HPCI Steam Line Tunnel Temperature - High (E41-TS-3314; E41-TS-3315; E41-TS-3316; E41-TS-3317; E41-TS-3318; E41-TS-3354; E41-TS-3488; E41-TS-3489)	NA	M	Q	1, 2, 3
5. Bus Power Monitor (E41-K55; E41-K56)	NA	R	NA	1, 2, 3
6. HPCI Turbine Exhaust Diaphragm Pressure - High (E41-PSH-N012A,B,C,D)	NA	M	Q	1, 2, 3

TABLE 4.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION AND INSTRUMENT NUMBER	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED
CORE STANDBY COOLING SYSTEMS ISOLATION (Continued)				
7. HPCI Steam Line Ambient Temperature - High (E51-TS-N603C,D)	NA	M	R	1, 2, 3
8. HPCI Steam Line Area Δ Temperature - High (E51-TDS-N604C,D)	NA	M	R	1, 2, 3
9. HPCI Equipment Area Temperature - High (E41-TS-N602A,B)	NA	M	Q	1, 2, 3
10. Drywell Pressure - High (E11-PT-N011C,D)	NA[a]	NA	R[b]	1, 2, 3
(E11-PTS-N011C-2,D-2)	D	M	M	1, 2, 3
b. Reactor Core Isolation Cooling System Isolation				
1. RCIC Steam Line Flow - High (E51-PDT-N017; E51-PDT-N018)	NA[a]	NA	R[b]	1, 2, 3
(E51-PDTM-N017-2; E51-PDTM-N018-2)	D	M	M	1, 2, 3
2. RCIC Steam Line Flow - High Time Delay Relay (E51-TDR-K32; E51-TDR-K12)	NA	R	R	1, 2, 3
3. RCIC Steam Supply Pressure - Low (E51-PS-N019A,B,C,D)	NA	M	Q	1, 2, 3

TABLE 4.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION AND INSTRUMENT NUMBER	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED
CORE STANDBY COOLING SYSTEMS ISOLATION (Continued)				
4. RCIC Steam Line Tunnel Temperature - High (E51-TS-3319; E51-TS-3320; E51-TS-3321; E51-TS-3322; E51-TS-3323; E51-TS-3355; E51-TS-3487)	NA	M	R	1, 2, 3
5. Bus Power Monitor (E51-K42; E51-K43)	NA	R	NA	1, 2, 3
6. RCIC Turbine Exhaust Diaphragm Pressure - High (E51-PS-NO12A,B,C,D)	NA	M	R	1, 2, 3
7. RCIC Steam Line Ambient Temperature - High (E51-TS-N603A,B)	NA	M	R	1, 2, 3
8. RCIC Steam Line Area Δ Temperature - High (E51-TDS-N604A,B)	NA	M	R	1, 2, 3
9. RCIC Equipment Room Ambient Temperature - High (E51-TS-N602A,B)	NA	M	Q	1, 2, 3
10. RCIC Equipment Room Δ Temperature - High (E51-TDS-N601A,B)	NA	M	Q	1, 2, 3
11. RCIC Steam Line Temperature - High Time Delay Relay (E51-KC-M602A,B)	NA	M	R	1, 2, 3

TABLE 4.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION AND INSTRUMENT NUMBER	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED
CORE STANDBY COOLING SYSTEMS ISOLATION (Continued)				
12. Drywell Pressure - High				
(E11-PT-N011A,B)	NA[a]	NA	R[b]	1, 2, 3
(E11-PTS-N011A-2,B-2)	D	M	M	1, 2, 3
5. SHUTDOWN COOLING SYSTEM ISOLATION				
a. Reactor Vessel Water Level - Low, Level 1				
(B21-LT-N017A-1,B-1,C-1,D-1)	NA[a]	NA	R[b]	1, 2, 3
(B21-LTM-N017A-1,B-1,C-1,D-1)	D	M	M	1, 2, 3
b. Reactor Steam Dome Pressure - High (B32-PS-N018A-1,B)	NA	S/U[c], M	R	1, 2, 3

TABLE 4.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

NOTES

(a) The transitter channel check is satisfied by the trip unit channel check. A separate transmitter check is not required.

(b) Transmitters are exempted from the monthly channel calibration.

(c) If not performed within the previous 31 days.

(d) Testing shall verify that the mechanical vacuum pump trips and the mechanical vacuum pump line valve closes.

(e) When handling irradiated fuel in the secondary containment.

(f) When reactor steam pressure $\geq$ 500 psig.

3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 PRIMARY CONTAINMENT

PRIMARY CONTAINMENT INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.1.1 PRIMARY CONTAINMENT INTEGRITY shall be maintained.

APPLICABILITY: CONDITIONS 1, 2, and 3.

ACTION:

Without PRIMARY CONTAINMENT INTEGRITY, restore PRIMARY CONTAINMENT INTEGRITY within 2 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.1 PRIMARY CONTAINMENT INTEGRITY shall be demonstrated:

a. At least once per 31 days by verifying that all primary containment penetrations* not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in position, except as provided in Specification 3.6.3.

b. By verifying each primary containment air lock OPERABLE per Specification 3.6.1.3.

c. By verifying the suppression pool OPERABLE per Specification 3.6.2.1.

* Except valves, blind flanges, and deactivated automatic valves which are located inside the containment, the MSIV Pit, the RWCU Penetration Triangle Room, or the TIP Room, and are locked, sealed, or otherwise secured in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except such verification need not be performed when the primary containment has not been de-inerted since the last verification or more often than once per 92 days. Those valves located above the drywell head requiring head shield block removal for verification will be verified prior to each replacement of the shield blocks.

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LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

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BASES

CONTAINMENT SYSTEMS

PRIMARY CONTAINMENT LEAKAGE

LIMITING CONDITION FOR OPERATION

3.6.1.2 Primary containment leakage rates shall be limited to:

a. An overall integrated leakage rate of:

1. Less than or equal to L_a, 0.5 percent by weight of the containment air per 24 hours at P_a, 49 psig, or

2. Less than or equal to L_t, 0.357 percent by weight of the containment air per 24 hours at a reduced pressure of P_t, 25 psig.

b. A combined leakage rate of less than or equal to 0.60 L_a for all penetrations and all valves, except for main steam line isolation valves*, subject to Type B and C tests when pressurized to P_a, 49 psig.

c. *Less than or equal to 11.5 scf per hour for any one main steam line isolation valve when tested at 25 psig.

APPLICABILITY: When PRIMARY CONTAINMENT INTEGRITY is required per Specification 3.6.1.1.

ACTION:

With:

a. The measured overall integrated primary containment leakage rate exceeding 0.75 L_a or 0.75 L_t, as applicable, or

b. The measured combined leakage rate for all penetrations and all valves, except for main steam line isolation valves*, subject to Type B and C tests exceeding 0.60 L_a, or

c. The measured leakage rate exceeding 11.5 scf per hour for any one main steam line isolation valve,

restore:

a. The overall integrated leakage rate(s) to less than or equal to 0.75 L_a or 0.75 L_t, as applicable, and

b. The combined leakage rate for all penetrations and all valves, except for main steam line isolation valves*, subject to Type B and C tests to less than or equal to 0.60 L_a, and

* Exemption to Appendix "J" of 10 CFR 50.

CONTAINMENT SYSTEMS

3/4.6.3 PRIMARY CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.6.3 The primary containment isolation valves and reactor instrumentation system isolation valves listed in plant procedure _____ shall be OPERABLE with isolation times as specified in plant procedure _____.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

a. With one or more of the primary containment isolation valve(s) specified in plant procedure _____ inoperable, operation may continue and the provisions of Specification 3.0.4 are not applicable provided that at least one isolation valve is maintained OPERABLE in each affected penetration that is open and either:

   1. The inoperable valve(s) is restored to OPERABLE status within 8 hours, or

   2. Each affected penetration line is isolated within 8 hours by use of at least one deactivated automatic valve secured in the isolation position, or

   3. Each affected penetration line is isolated within 8 hours by use of at least one closed manual valve or blind flange.

   Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. With one or more of the reactor instrumentation system isolation valves listed in plant procedure _____ inoperable, operation may continue and the provisions of Specifications 3.0.3 and 3.0.4 are not applicable provided that within 8 hours;

   1. The inoperable valve is returned to OPERABLE status, or

   2. The instrument line is isolated and the associated instrument is declared inoperable.

   Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS

4.6.3.1 Each primary containment isolation valve specified in plant procedure _____ shall be demonstrated OPERABLE prior to returning the valve to service after maintenance, repair, or replacement work is performed on the valve or its associated actuator, control, or power circuit by performance of the cycling test and verification of isolation time.

4.6.3.2 Each isolation valve specified in plant procedure _____ shall be demonstrated OPERABLE at least once per 18 months by verifying that on a containment isolation test signal each isolation valve actuates to its isolation position.

4.6.3.3 The isolation time of each power-operated or automatic valve specified in plant procedure _____ shall be determined to be within its limit when tested pursuant to Specification 4.0.5.

4.6.3.4 Each reactor instrumentation system isolation valve specified in plant procedure _____ shall be demonstrated OPERABLE at least once per 18 months by cycling each valve through at least one complete cycle of full travel.

CONTAINMENT SYSTEMS

3/4.6.4 VACUUM RELIEF

DRYWELL - SUPPRESSION CHAMBER VACUUM BREAKERS

LIMITING CONDITION FOR OPERATION

3.6.4.1 All drywell-suppression chamber vacuum breakers shall be OPERABLE and in the closed position with:

a. The position indicator OPERABLE, and

b. An opening setpoint of less than or equal to 0.5 psid.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

a. With no more than 2 drywell-suppression chamber vacuum breakers inoperable for opening but known to be in the closed position, the provisions of Specification 3.0.4 are not applicable and operation may continue until the next COLD SHUTDOWN provided the surveillance requirements of Specification 4.6.4.1.a are performed on the OPERABLE vacuum breakers within 4 hours and at least once per 15 days thereafter until the inoperable vacuum breakers are restored to OPERABLE status.

b. With one drywell-suppression chamber vacuum breaker in the open position, as indicated by the position indicating system, the provisions of Specification 3.0.4 are not applicable and operation may continue provided the surveillance requirements of Specification 4.6.4.1.a are performed on the OPERABLE vacuum breakers and the surveillance requirements of Specification 4.6.4.1.b are performed within 8 hours and at least once per 72 hours thereafter until the inoperable vacuum breaker is restored to the closed position.

c. With the position indicator of any drywell-suppression chamber vacuum breaker inoperable, the provisions of Specification 3.0.4 are not applicable and operation may continue, provided the surveillance requirements of Specification 4.6.4.1.b are performed within 8 hours and at least once per 72 hours thereafter until the inoperable position indicator is returned to OPERABLE status.

d. Otherwise, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS

4.6.4.1 Each drywell-suppression chamber vacuum breaker shall be demonstrated OPERABLE:

a. At least once per 31 days and after any discharge of steam to the suppression chamber from any source, by exercising each vacuum breaker through one complete cycle and verifying that each vacuum breaker is closed as indicated by the position indication system.

b. Whenever a vacuum breaker is in the open position, as indicated by the position indication system, by conducting a test that verifies that the differential pressure is maintained greater than 1/2 the initial delta P for one hour without N_2 makeup.

c. At least once per 18 months during shutdown by:

1. Verifying the opening setpoint, from the closed position, to be less than or equal to 0.5 psid,

2. Performance of a CHANNEL CALIBRATION that each position indicator indicates the vacuum breaker to be open if the vacuum breaker does not satisfy the delta P test in 4.6.4.1.b.

CONTAINMENT SYSTEMS

SUPPRESSION POOL - REACTOR BUILDING VACUUM BREAKERS

LIMITING CONDITION FOR OPERATION

3.6.4.2 All suppression pool-Reactor Building vacuum breakers shall be OPERABLE with:

a. an opening setpoint of less than or equal to 0.5 psid

b. an OPERABLE Nitrogen Backup System consisting of two independent subsystems (one subsystem for each vacuum breaker).

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

a. With one suppression pool-Reactor Building vacuum breaker inoperable for opening but known to be in the closed position, restore the inoperable vacuum breaker 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.

b. With one Nitrogen Backup System subsystem inoperable, verify the remaining subsystem is OPERABLE and restore the inoperable subsystem to OPERABLE status within 31 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

c. With both Nitrogen Backup System subsystems inoperable, restore at least one inoperable subsystem to OPERABLE status within 7 days; otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

SURVEILLANCE REQUIREMENTS

4.6.4.2.1 Each suppression pool-Reactor Building vacuum breaker shall be demonstrated OPERABLE:

a. At least once per 92 days by:

   1. Manually verifying that each vacuum breaker check valve is free to open, and

   2. Cycling each vacuum breaker butterfly valve through at least one complete cycle of full travel.

b. At least once per 18 months by:

   1. Demonstrating that the force required to open each vacuum breaker check valve does not exceed 0.5 psid.

SURVEILLANCE REQUIREMENTS (Continued)

2. Demonstrating that the vacuum breaker butterfly valve opens at -0.45 ± 0.05 psid, drywell pressure going negative relative to Reactor Building pressure.

3. Visual inspections.

4.6.4.2.2 The Nitrogen Backup System shall be demonstrated OPERABLE:

a. At least once per 24 hours by verifying that each subsystem is pressurized to greater than or equal to 1130 psig.

b. At least once per 18 months by verifying that each subsystem maintains system pressure with a leakage rate of less than or equal to .65 SCFM at a starting pressure greater than or equal to 1130 psig.

c. At least once per 18 months by performing a logic system functional test to ensure actuation of the nitrogen backup system.

CONTAINMENT SYSTEMS

3/4.6.5 SECONDARY CONTAINMENT

SECONDARY CONTAINMENT INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.5.1 SECONDARY CONTAINMENT INTEGRITY shall be maintained.

APPLICABILITY: CONDITIONS 1, 2, 3, 5, and *.

ACTION:

Without SECONDARY CONTAINMENT INTEGRITY, restore SECONDARY CONTAINMENT INTEGRITY within 8 hours, or:

a. In CONDITION 1, 2, OR 3, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. In CONDITION 5 or *, suspend irradiated fuel handling in the secondary containment, CORE ALTERATIONS, and activities which could reduce the SHUTDOWN MARGIN. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.6.5.1 SECONDARY CONTAINMENT INTEGRITY shall be demonstrated by verifying:

a. At least once per 92 days that each secondary containment isolation damper is OPERABLE or secured in the closed position per Specification 3.6.5.2.

b. At least once per 18 months by operating a standby gas treatment system for 1 hour and maintaining $\geq$ 1/4 inch of vacuum, water gauge, at a flow rate not exceeding 3000 CFM.

*When irradiated fuel is being handled in the secondary containment.

CONTAINMENT SYSTEMS

SECONDARY CONTAINMENT AUTOMATIC ISOLATION DAMPERS

LIMITING CONDITION FOR OPERATION

3.6.5.2 The secondary containment automatic isolation dampers specified in plant procedure _____ shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3, 5, and *.

ACTION:

With one or more of the secondary containment isolation dampers specified in plant procedure _____ inoperable, operation may continue and the provisions of Specification 3.0.4 are not applicable, provided that at least one isolation damper is maintained OPERABLE in each affected penetration that is open, and:

a. The inoperable damper is restored to OPERABLE status within 8 hours, or

b. The affected penetration is isolated by use of a closed damper within 8 hours, or

c. SECONDARY CONTAINMENT INTEGRITY is demonstrated within 8 hours and the damper is restored to OPERABLE status within 7 days.

Otherwise, in OPERATIONAL CONDITION 1, 2, or 3, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

Otherwise, in OPERATIONAL CONDITION 5 or *, suspend irradiated fuel handling in the secondary containment, CORE ALTERATIONS, or activities that could reduce the SHUTDOWN MARGIN. The provisions of Specification 3.0.3 are not applicable.

*When irradiated fuel is being handled in the secondary containment.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS

4.6.5.2 Each secondary containment automatic isolation damper specified in plant procedure _____ shall be demonstrated OPERABLE:

a. At least once per 92 days by cycling each automatic isolation damper testable during plant operation through at least one complete cycle of full travel.

b. Prior to returning the damper to service after maintenance, repair, or replacement work is performed on the damper or its associated actuator, control, or power circuit by performance of the cycling test and verification of isolation time.

c. At least once per 18 months during COLD SHUTDOWN or REFUELING by:

1. Cycling each automatic damper through at least one complete cycle of full travel and measuring the isolation time, and

2. Verifying that on a secondary containment isolation test signal each automatic damper actuates to its isolation position.

CONTAINMENT SYSTEMS

3/4.6.6 CONTAINMENT ATMOSPHERE CONTROL

STANDBY GAS TREATMENT SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.6.1 Two independent standby gas treatment subsystems shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3, 5, and *.

ACTION:

a. With one standby gas treatment subsystem inoperable:

1. In OPERATIONAL CONDITION 1, 2, or 3, restore the inoperable sybsystem 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.

2. In OPERATIONAL CONDITION 5 or *, restore the inoperable subsystem to OPERABLE status within 31 days or suspend irradiated fuel handling in the secondary containment, CORE ALTERATIONS, or operations that could reduce the SHUTDOWN MARGIN. The provisions of Specification 3.0.3 are not applicable.

b. With both standby gas treatment subsystems inoperable:

1. In OPERATIONAL CONDITION 1, 2, or 3, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.

2. In OPERATIONAL CONDITION 5 or *, suspend all irradiated fuel handling in the secondary containment, CORE ALTERATIONS, or operations that could reduce the SHUTDOWN MARGIN. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.6.6.1 Each standby gas treatment subsystem shall be demonstrated OPERABLE:

a. At least once per 31 days by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the subsystem operates for at least 10 hours with the heaters on automatic control.

*When irradiated fuel is being handled in the secondary containment.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:

1. Verifying that the cleanup system satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 1, July 1976, and the system flow rate is 3000 cfm ± 10%.

2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 1, July 1976, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 1, July 1976.

3. Verifying a system flow rate of 3000 cfm ± 10% during system operation when tested in accordance with ANSI N510-1975.

c. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal that a laboratory analysis of representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 1, July 1976, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 1, July 1976.

d. At least once per 18 months by:

1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 8.5 inches Water Gauge while operating the filter train at a flow rate of 3000 cfm ± 10%.

2. Verifying that the filter train starts on each secondary containment isolation test signal.

3. Verifying that the heaters will dissipate at least 15.2 kw when tested in accordance with ANSI N510-1975.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the system at a flow rate of 3000 cfm ± 10%.

f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove ≥ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the system at a flow rate of 3000 cfm ± 10%.

CONTAINMENT SYSTEMS

CONTAINMENT ATMOSPHERE DILUTION SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.6.2 The containment atmosphere dilution (CAD) system shall be OPERABLE with:

a. An OPERABLE flow path capable of supplying nitrogen to the drywell, and

b. A minimum supply of 4350 gallons of liquid nitrogen.

APPLICABILITY: CONDITION 1*.

ACTION:

With the CAD system inoperable, restore the CAD system to OPERABLE status within 31 days or be in at least STARTUP within the next 8 hours. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.6.6.2 The CAD system shall be demonstrated to be OPERABLE:

a. At least once per 31 days by verifying that:

1. The system contains a minimum of 4350 gallons of liquid nitrogen, and

2. Each valve (manual, power-operated, or automatic) in the flow path not locked, sealed, or otherwise secured in position, is in its correct position.

b. At least once per 18 months by:

1. Cycling each power-operated (excluding automatic) valve in the flow path through at least one complete cycle of full travel, and

2. Verifying that each automatic valve in the flow path actuates to its correct position on a Group 2 and 6 isolation test signal.

*When oxygen concentration is required to be < 4% per Specification 3.6.6.3.

CONTAINMENT SYSTEMS

OXYGEN CONCENTRATION

LIMITING CONDITION FOR OPERATION

3.6.6.3* The primary containment atmosphere oxygen concentration shall be less than 4% by volume during the period from:

a. Within 24 hours after THERMAL POWER > 15% of RATED THERMAL POWER, to

b. Within 24 hours prior to a scheduled reduction of THERMAL POWER to < 15% of RATED THERMAL POWER.

APPLICABILITY: CONDITION 1.

ACTION:

With the oxygen concentration in the primary containment exceeding the limit, be in at least START-UP within 8 hours.

SURVEILLANCE REQUIREMENTS

4.6.6.3 The oxygen concentration in the primary containment shall be verified to be within the limit within 24 hours after THERMAL POWER > 15% of RATED THERMAL POWER and at least once per 7 days thereafter.

*For the period commencing at 0630 on June 29, 1981, a temporary exemption is allowed to operate BSEP-2 in Condition 1 with containment oxygen concentration exceeding 4% by volume for 72 hours.

CONTAINMENT SYSTEMS

GAS ANALYZER SYSTEMS

LIMITING CONDITION FOR OPERATION

3.6.6.4 Two independent gas analyzer systems for the drywell and suppression chamber shall be OPERABLE with each system consisting of an oxygen analyzer and a hydrogen analyzer.

APPLICABILITY: CONDITION 1.

ACTION:

a. With one oxygen and/or one hydrogen analyzer inoperable, restore at least two oxygen and two hydrogen analyzers to OPERABLE status within 31 days or be in at least STARTUP within the next 8 hours. The provisions of Specification 3.0.4 are not applicable.

b. With no gas analyzer OPERABLE for oxygen and/or hydrogen, be in at least STARTUP within 8 hours.

SURVEILLANCE REQUIREMENTS

4.6.6.4 Each gas analyzer system (CAC-AT-4409, Division I and CAC-AT-4410, Division II) shall be demonstrated OPERABLE at least once per 92 days by performing a CHANNEL CALIBRATION using standard gas samples containing a nominal:

a. Zero volume percent hydrogen, balance nitrogen.

b. Seven to ten volume percent hydrogen, balance nitrogen.

c. Twenty-five to thirty volume percent hydrogen, balance nitrogen.

d. Zero volume percent oxygen, balance nitrogen.

e. Seven to ten percent oxygen, balance nitrogen.

f. Twenty to twenty-five percent oxygen, balance nitrogen.

CONTAINMENT SYSTEMS

BASES

3/4.6.3 PRIMARY CONTAINMENT ISOLATION VALVES (Continued)

A list of automatic closing primary containment isolation valves and their associated closure times shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The addition and deletion of primary containment isolation valves shall be made in accordance with Section 50.59 of 10 CFR Part 50.

3/4.6.4 VACUUM RELIEF

Vacuum relief breakers are provided to equalize the pressure between the drywell and suppression pool and the suppression pool and reactor building. This system will maintain the structural integrity of the containment under conditions of large differential pressures.

The vacuum breakers between the drywell and the suppression pool must not be inoperable in the open position since this would allow bypassing of the suppression pool in case of an accident. There are an adequate number of valves to provide some redundancy so that operation may continue with no more than 2 vacuum breakers inoperable and secured in the closed position.

Each set of vacuum relief valves between the suppression chamber and reactor building provides 100% relief, which may be required in the unlikely event that negative pressures develop in the primary containment.

The Nitrogen Backup System provides backup motive power for these suppression pool-reactor building vacuum breakers on a loss of instrument air. The normal non-interruptible instrument air system for these vacuum breakers is designed as a Seismic Class I system supplied by air compressors powered from the emergency buses. The Nitrogen System serves as a backup to the air system and thus the loss of the Nitrogen System, or portions thereof, does not make the vacuum breakers inoperable. This design allows for the out of service times in Actions b and c. The Nitrogen Backup System is added to the Suppression Pool-Reactor Building Vacuum Breaker specification to satisfy NRC concerns relative to 10 CFR 50.44(c)(3) as addressed in the Brunswick Safety Evaluation Report dated October 30, 1986 concerning Generic Letter 84-09. Pressurization to 1130 psig assures sufficient system capacity to provide 24 hours of operation with design valve actuation and system leakage.

3/4.6.5 SECONDARY CONTAINMENT

Secondary containment is designed to minimize any ground level release of radioactive material which may result from an accident. The reactor building provides secondary containment during normal operation when the drywell is sealed and in service. When the reactor is shut down or during refueling the drywell may be open and the reactor building then becomes the primary containment.

3/4.6.5 SECONDARY CONTAINMENT (Continued)

Establishing and maintaining a vacuum in the building with the standby gas treatment system, once per 18 months, along with the surveillance of the valves, is adequate to ensure that there are no violations of the integrity of the secondary containment.

A list of secondary containment automatic isolation dampers shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The addition and deletion of secondary containment automatic isolation dampers shall be made in accordance with Section 50.59 of 10 CFR Part 50.

3/4.6.6 CONTAINMENT ATMOSPHERE CONTROL

The OPERABILITY of the containment iodine filter trains ensures that sufficient iodine removal capability will be available in the event of a LOCA. The reduction of containment iodine inventory reduces the resulting site boundary radiation doses associated with containment leakage. The operation of this system and resultant iodine removal capacity are consistent with the assumptions used in the LOCA analyses.

The OPERABILITY of the equipment and systems required for the detection and control of hydrogen gas ensures that this equipment will be available to maintain the hydrogen concentration within containment below its flammable limit during post-LOCA conditions. The containment inerting system is capable of controlling the expected hydrogen generation associated with 1) zirconium-water reactions, 2) radiolytic decomposition of water, and 3) corrosion of metals within containment. The hydrogen control system is consistent with the recommendations of Regulatory Guide 1.7, "Control of Combustible Gas Concentrations in Containment Following a LOCA."