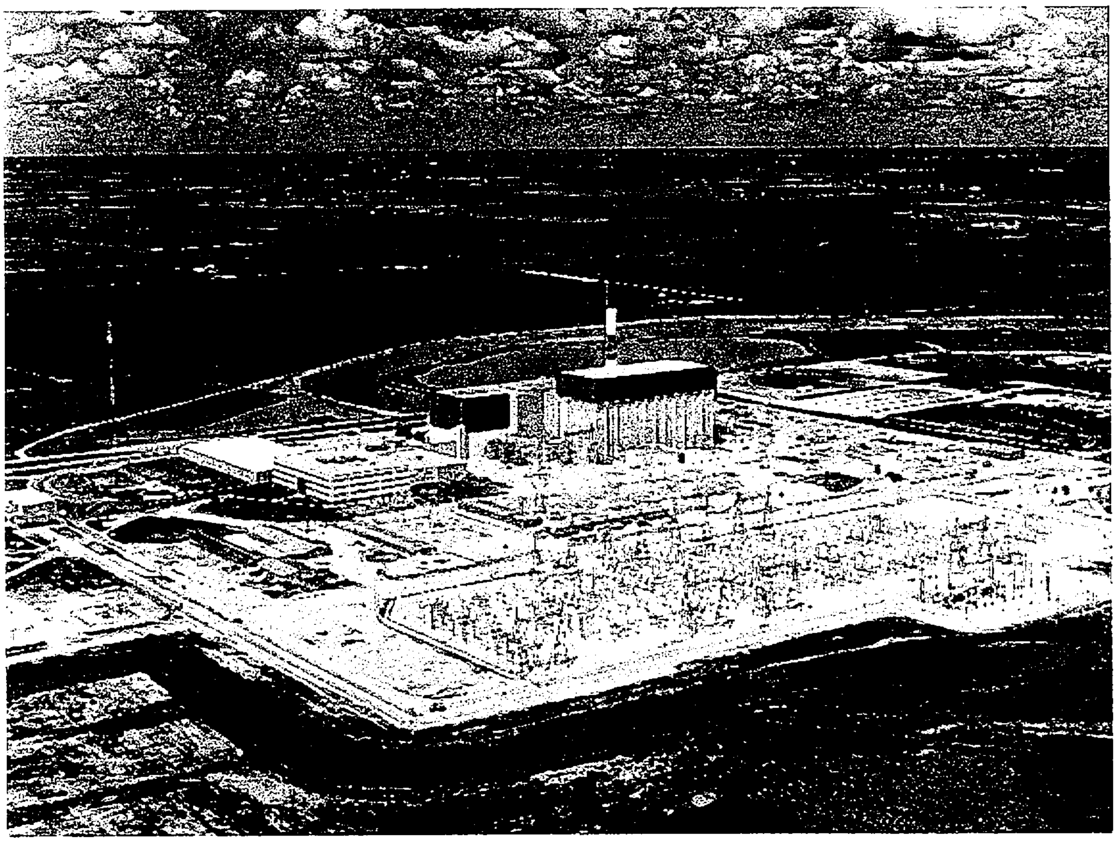
Improved Technical Specifications



LaSalle County Station

Volume 3:
Section 3.3; ITS, Bases,
and CTS Markup/DOCs

ComEd

3.3 INSTRUMENTATION

3.3.1.1 Reactor Protection System (RPS) Instrumentation

LCO 3.3.1.1 The RPS instrumentation for each Function in Table 3.3.1.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.1.1-1.

ACTIONS

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

1. Separate Condition entry is allowed for each channel.

2. When Function 2.b and 2.c channels are inoperable due to the APRM gain adjustment factor (GAF) not within limits, entry into associated Conditions and Required Actions may be delayed for up to 2 hours if the GAF is > 1.02, and for up to 12 hours if the GAF is < 0.98.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required channels inoperable.	A.1 Place channel in trip. __OR__ A.2 Place associated trip system in trip.	12 hours 12 hours
B. One or more Functions with one or more required channels inoperable in both trip systems.	B.1 Place channel in one trip system in trip. __OR__ B.2 Place one trip system in trip.	6 hours 6 hours

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more Functions with RPS trip capability not maintained.	C.1 Restore RPS trip capability.	1 hour
D. Required Action and associated Completion Time of Condition A, B, or C not met.	D.1 Enter the Condition referenced in Table 3.3.1.1-1 for the channel.	Immediately
E. As required by Required Action D.1 and referenced in Table 3.3.1.1-1.	E.1 Reduce THERMAL POWER to < 25% RTP.	4 hours
F. As required by Required Action D.1 and referenced in Table 3.3.1.1-1.	F.1 Be in MODE 2.	6 hours
G. As required by Required Action D.1 and referenced in Table 3.3.1.1-1.	G.1 Be in MODE 3.	12 hours
H. As required by Required Action D.1 and referenced in Table 3.3.1.1-1.	H.1 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately

SURVEILLANCE REQUIREMENTS

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

1. Refer to Table 3.3.1.1-1 to determine which SRs apply for each RPS Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains RPS trip capability.

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.1.1.2	-----------------NOTE------------------ Not required to be performed until 12 hours after THERMAL POWER $\geq$ 25% RTP. -- Verify the absolute difference between the average power range monitor (APRM) channels and the calculated power $\leq$ 2% RTP while operating at $\geq$ 25% RTP.	7 days
SR 3.3.1.1.3	Adjust the channel to conform to a calibrated flow signal.	7 days
SR 3.3.1.1.4	-----------------NOTE------------------ Not required to be performed when entering MODE 2 from MODE 1 until 24 hours after entering MODE 2. -- Perform CHANNEL FUNCTIONAL TEST.	7 days

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.5	Perform CHANNEL FUNCTIONAL TEST.	7 days
SR 3.3.1.1.6	Verify the source range monitor (SRM) and intermediate range monitor (IRM) channels overlap.	Prior to fully withdrawing SRMs
SR 3.3.1.1.7	------------------NOTE------------------ Only required to be met during entry into MODE 2 from MODE 1. -- Verify the IRM and APRM channels overlap.	7 days
SR 3.3.1.1.8	Calibrate the local power range monitors.	1000 effective full power hours
SR 3.3.1.1.9	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.1.1.10	Perform CHANNEL CALIBRATION.	92 days

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.11	------------------NOTES------------------ 1. Neutron detectors are excluded. 2. For Function 2.a, not required to be performed when entering MODE 2 from MODE 1 until 24 hours after entering MODE 2. --- Perform CHANNEL CALIBRATION.	184 days
SR 3.3.1.1.12	Perform CHANNEL FUNCTIONAL TEST.	24 months
SR 3.3.1.1.13	------------------NOTES------------------ 1. Neutron detectors are excluded. 2. For Function 1, not required to be performed when entering MODE 2 from MODE 1 until 24 hours after entering MODE 2. --- Perform CHANNEL CALIBRATION.	24 months
SR 3.3.1.1.14	Verify the APRM Flow Biased Simulated Thermal Power − Upscale time constant is $\leq$ 7 seconds.	24 months
SR 3.3.1.1.15	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 months

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.16	Verify Turbine Stop Valve—Closure and Turbine Control Valve Fast Closure, Trip Oil Pressure—Low Functions are not bypassed when THERMAL POWER is ≥ 25% RTP.	24 months
SR 3.3.1.1.17	-----------------NOTES----------------- 1. Neutron detectors are excluded. 2. For Functions 3 and 4, the sensor response times may be assumed to be the design sensor response time. 3. For Function 5, "n" equals 4 channels for the purpose of determining the STAGGERED TEST BASIS Frequency. 4. For Function 8, the limit switch response time may be conservatively assumed. 5. For Function 9, the RPS RESPONSE TIME is measured from start of turbine control valve fast closure. --------------------------------------- Verify the RPS RESPONSE TIME is within limits.	24 months on a STAGGERED TEST BASIS

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

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Intermediate Range Monitors					
a. Neutron Flux — High	2	3	G	SR 3.3.1.1.1 SR 3.3.1.1.4 SR 3.3.1.1.6 SR 3.3.1.1.7 SR 3.3.1.1.13 SR 3.3.1.1.15	≤ [122/125] divisions of full scale
	5[(a)]	3	H	SR 3.3.1.1.1 SR 3.3.1.1.5 SR 3.3.1.1.13 SR 3.3.1.1.15	≤ [122/125] divisions of full scale
b. Inop	2	3	G	SR 3.3.1.1.4 SR 3.3.1.1.15	NA
	5[(a)]	3	H	SR 3.3.1.1.5 SR 3.3.1.1.15	NA
2. Average Power Range Monitors					
a. Neutron Flux — High, Setdown	2	2	G	SR 3.3.1.1.1 SR 3.3.1.1.4 SR 3.3.1.1.7 SR 3.3.1.1.8 SR 3.3.1.1.11 SR 3.3.1.1.15	≤ [20]% RTP
b. Flow Biased Simulated Thermal Power — Upscale	1	2	F	SR 3.3.1.1.1 SR 3.3.1.1.2 SR 3.3.1.1.3 SR 3.3.1.1.8 SR 3.3.1.1.9 SR 3.3.1.1.11 SR 3.3.1.1.14 SR 3.3.1.1.15	≤ [0.58 W + 62% RTP and ≤ 115.5%] RTP[(b)]
c. Fixed Neutron Flux — High	1	2	F	SR 3.3.1.1.1 SR 3.3.1.1.2 SR 3.3.1.1.8 SR 3.3.1.1.9 SR 3.3.1.1.11 SR 3.3.1.1.15 SR 3.3.1.1.17	≤ [120]% RTP

(continued)

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

(b) Allowable Value is ≤ [0.58 W + 57.3% RTP and ≤ 115.5%] RTP when reset for single loop operation per LCO 3.4.1, "Recirculation Loops Operating."

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

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
2. Average Power Range Monitors (continued)					
d. Inop	1,2	2	G	SR 3.3.1.1.8 SR 3.3.1.1.9 SR 3.3.1.1.15	NA
3. Reactor Vessel Steam Dome Pressure — High	1,2	2	G	SR 3.3.1.1.9 SR 3.3.1.1.10 SR 3.3.1.1.15 SR 3.3.1.1.17	≤ [1056.0] psig
4. Reactor Vessel Water Level — Low, Level 3	1,2	2	G	SR 3.3.1.1.1 SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.17	≥ [10.9] inches
5. Main Steam Isolation Valve — Closure	1	8	F	SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.17	≤ [12]% closed
6. Drywell Pressure — High	1,2	2	G	SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15	≤ [1.93] psig
7. Scram Discharge Volume Water Level — High					
a. Transmitter/Trip Unit	1,2	2	G	SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15	≤ [767 ft 2.5 in elevation (Unit 1)] ≤ [767 ft 3.75 in elevation (Unit 2)]
	5(a)	2	H	SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15	≤ [767 ft 2.5 in elevation (Unit 1)] ≤ [767 ft 3.75 in elevation (Unit 2)]

(continued)

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

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

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
7. Scram Discharge Volume Water Level — High (continued)					
b. Float Switch	1,2	2	G	SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15	≤ [767 ft 5.5 in] elevation
	5(a)	2	H	SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15	≤ [767 ft 5.5 in] elevation
8. Turbine Stop Valve — Closure	≥ 25% RTP	4	E	SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.16 SR 3.3.1.1.17	≤ [7]% closed
9. Turbine Control Valve Fast Closure, Trip Oil Pressure — Low	≥ 25% RTP	2	E	SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.16 SR 3.3.1.1.17	≥ [424] psig
10. Reactor Mode Switch — Shutdown Position	1,2	2	G	SR 3.3.1.1.12 SR 3.3.1.1.15	NA
	5(a)	2	H	SR 3.3.1.1.12 SR 3.3.1.1.15	NA
11. Manual Scram	1,2	2	G	SR 3.3.1.1.5 SR 3.3.1.1.15	NA
	5(a)	2	H	SR 3.3.1.1.5 SR 3.3.1.1.15	NA

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

3.3 INSTRUMENTATION

3.3.1.2 Source Range Monitor (SRM) Instrumentation

LCO 3.3.1.2 The SRM instrumentation in Table 3.3.1.2-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.1.2-1.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required SRMs inoperable in MODE 2 with intermediate range monitors (IRMs) on Range 2 or below.	A.1 Restore required SRMs to OPERABLE status.	4 hours
B. Three required SRMs inoperable in MODE 2 with IRMs on Range 2 or below.	B.1 Suspend control rod withdrawal.	Immediately
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3.	12 hours
D. One or more required SRMs inoperable in MODE 3 or 4.	D.1 Fully insert all insertable control rods. <u>AND</u>	1 hour (continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. (continued)	D.2	Place reactor mode switch in the shutdown position.	1 hour
E. One or more required SRMs inoperable in MODE 5.	E.1	Suspend CORE ALTERATIONS except for control rod insertion.	Immediately
	<u>AND</u>		
	E.2	Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately

SURVEILLANCE REQUIREMENTS

-----NOTE-----
Refer to Table 3.3.1.2-1 to determine which SRs apply for each applicable MODE or other specified condition.

SURVEILLANCE		FREQUENCY
SR 3.3.1.2.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.1.2.2	-----NOTES----- 1. Only required to be met during CORE ALTERATIONS. 2. One SRM may be used to satisfy more than one of the following. --- Verify an OPERABLE SRM detector is located in: a. The fueled region; b. The core quadrant where CORE ALTERATIONS are being performed when the associated SRM is included in the fueled region; and c. A core quadrant adjacent to where CORE ALTERATIONS are being performed, when the associated SRM is included in the fueled region.	12 hours
SR 3.3.1.2.3	Perform CHANNEL CHECK.	24 hours

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.1.2.4	------------------NOTE------------------ Not required to be met with less than or equal to four fuel assemblies adjacent to the SRM and no other fuel assemblies in the associated core quadrant. -- Verify count rate is: a. $\geq$ 3.0 cps; or b. $\geq$ 0.7 cps with a signal to noise ratio $\geq$ 20:1.	12 hours during CORE ALTERATIONS <u>AND</u> 24 hours
SR 3.3.1.2.5	------------------NOTE------------------ The determination of signal to noise ratio is not required to be met with less than or equal to four fuel assemblies adjacent to the SRM and no other fuel assemblies in the associated core quadrant. -- Perform CHANNEL FUNCTIONAL TEST and determination of signal to noise ratio.	7 days
SR 3.3.1.2.6	------------------NOTE------------------ Not required to be performed until 12 hours after IRMs on Range 2 or below. -- Perform CHANNEL FUNCTIONAL TEST and determination of signal to noise ratio.	31 days

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.1.2.7	------------------NOTES------------------ 1. Neutron detectors are excluded. 2. Not required to be performed until 12 hours after IRMs on Range 2 or below. --- Perform CHANNEL CALIBRATION.	24 months

Table 3.3.1.2-1 (page 1 of 1)
Source Range Monitor Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS
1. Source Range Monitor	2(a)	3	SR 3.3.1.2.1 SR 3.3.1.2.4 SR 3.3.1.2.6 SR 3.3.1.2.7
	3,4	2	SR 3.3.1.2.3 SR 3.3.1.2.4 SR 3.3.1.2.6 SR 3.3.1.2.7
	5	2(b),(c)	SR 3.3.1.2.1 SR 3.3.1.2.2 SR 3.3.1.2.4 SR 3.3.1.2.5 SR 3.3.1.2.7

(a) With IRMs on Range 2 or below.

(b) Only one SRM channel is required to be OPERABLE during spiral offload or reload when the fueled region includes only that SRM detector.

(c) Special movable detectors may be used in place of SRMs if connected to normal SRM circuits.

3.3 INSTRUMENTATION

3.3.2.1 Control Rod Block Instrumentation

LCO 3.3.2.1 The control rod block instrumentation for each Function in Table 3.3.2.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.2.1-1.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One rod block monitor (RBM) channel inoperable.	A.1 Restore RBM channel to OPERABLE status.	24 hours
B. Required Action and associated Completion Time of Condition A not met. OR Two RBM channels inoperable.	B.1 Place one RBM channel in trip.	1 hour
C. Rod worth minimizer (RWM) inoperable during reactor startup.	C.1 Suspend control rod movement except by scram. OR	Immediately

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	C.2.1.1 Verify $\geq$ 12 rods withdrawn. OR C.2.1.2 Verify by administrative methods that startup with RWM inoperable has not been performed in the last calendar year. AND C.2.2 Verify movement of control rods is in compliance with analyzed rod position sequence by a second licensed operator or other qualified member of the technical staff.	Immediately Immediately During control rod movement
D. RWM inoperable during reactor shutdown.	D.1 Verify movement of control rods is in compliance with analyzed rod position sequence by a second licensed operator or other qualified member of the technical staff.	During control rod movement

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. One or more Reactor Mode Switch — Shutdown Position channels inoperable.	E.1 Suspend control rod withdrawal. AND E.2 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

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

1. Refer to Table 3.3.2.1-1 to determine which SRs apply for each Control Rod Block Function.

2. When an RBM channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains control rod block capability.

SURVEILLANCE	FREQUENCY
SR 3.3.2.1.1 Perform CHANNEL FUNCTIONAL TEST.	92 days

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.2.1.2	------------------NOTE------------------ Not required to be performed until 1 hour after any control rod is withdrawn at $\leq$ 10% RTP in MODE 2. -- Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.2.1.3	------------------NOTE------------------ Not required to be performed until 1 hour after THERMAL POWER is $\leq$ 10% RTP in MODE 1. -- Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.2.1.4	------------------NOTE------------------ Neutron detectors are excluded. -- Perform CHANNEL CALIBRATION.	92 days
SR 3.3.2.1.5	------------------NOTE------------------ Neutron detectors are excluded. -- Verify the RBM is not bypassed when THERMAL POWER is $\geq$ 30% RTP and a peripheral control rod is not selected.	24 months
SR 3.3.2.1.6	Verify the RWM is not bypassed when THERMAL POWER is $\leq$ 10% RTP.	24 months

(continued)

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.3.2.1.7	------------------NOTE------------------ Not required to be performed until 1 hour after reactor mode switch is in the shutdown position. -- Perform CHANNEL FUNCTIONAL TEST.	 24 months
SR 3.3.2.1.8	Verify control rod sequences input to the RWM are in conformance with analyzed rod position sequence.	Prior to declaring RWM OPERABLE following loading of sequence into RWM
SR 3.3.2.1.9	Verify the bypassing and position of control rods required to be bypassed in RWM by a second licensed operator or other qualified member of the technical staff.	Prior to and during the movement of control rods bypassed in RWM

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

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Rod Block Monitor				
a. Upscale	(a)	2	SR 3.3.2.1.1 SR 3.3.2.1.4 SR 3.3.2.1.5	As specified in the COLR
b. Inop	(a)	2	SR 3.3.2.1.1 SR 3.3.2.1.5	NA
c. Downscale	(a)	2	SR 3.3.2.1.1 SR 3.3.2.1.4 SR 3.3.2.1.5	≥ [3% RTP]
2. Rod Worth Minimizer	1[(b)], 2[(b)]	1	SR 3.3.2.1.2 SR 3.3.2.1.3 SR 3.3.2.1.6 SR 3.3.2.1.8 SR 3.3.2.1.9	NA
3. Reactor Mode Switch — Shutdown Position	(c)	2	SR 3.3.2.1.7	NA

(a) THERMAL POWER ≥ 30% RTP and no peripheral control rod selected.

(b) With THERMAL POWER ≤ 10% RTP.

(c) Reactor mode switch in the shutdown position.

3.3 INSTRUMENTATION

3.3.2.2 Feedwater System and Main Turbine High Water Level Trip Instrumentation

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

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

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more feedwater system and main turbine high water level trip channels inoperable.	A.1 Place channel in trip.	7 days
B. Feedwater system and main turbine high water level trip capability not maintained.	B.1 Restore feedwater system and main turbine high water level trip capability.	2 hours

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time not met.	C.1 --------NOTE--------- Only applicable if inoperable channel is the result of an inoperable motor-driven feedwater pump breaker or feedwater turbine stop valve. ---------------------	
	Remove affected feedwater pump(s) from service	4 hours
	<u>OR</u>	
	C.2 Reduce THERMAL POWER to < 25% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

-----------------------------------NOTE-----------------------------------
When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided feedwater system and main turbine high water level trip capability is maintained.

SURVEILLANCE	FREQUENCY
SR 3.3.2.2.1 Perform CHANNEL CHECK.	12 hours
SR 3.3.2.2.2 Perform CHANNEL FUNCTIONAL TEST.	92 days

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.2.2.3	Perform CHANNEL CALIBRATION. The Allowable Value shall be ≤ [59.6] inches.	24 months
SR 3.3.2.2.4	Perform LOGIC SYSTEM FUNCTIONAL TEST, including breaker and valve actuation.	24 months

3.3 INSTRUMENTATION

3.3.3.1 Post Accident Monitoring (PAM) Instrumentation

LCO 3.3.3.1 The PAM instrumentation for each Function in Table 3.3.3.1-1 shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

-----NOTES-----

1. LCO 3.0.4 is not applicable.
2. Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one required channel inoperable.	A.1 Restore required channel to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action in accordance with Specification 5.6.6.	Immediately
C. One or more Functions with two required channels inoperable.	C.1 Restore one required channel to OPERABLE status.	7 days

(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. Required Action and associated Completion Time of Condition C not met.	D.1	Enter the Condition referenced in Table 3.3.3.1-1 for the channel.	Immediately
E. As required by Required Action D.1 and referenced in Table 3.3.3.1-1.	E.1	Be in MODE 3.	12 hours
F. As required by Required Action D.1 and referenced in Table 3.3.3.1-1.	F.1	Initiate action in accordance with Specification 5.6.6.	Immediately

SURVEILLANCE REQUIREMENTS

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

1. These SRs apply to each Function in Table 3.3.3.1-1, except where identified in the SR.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the other required channel in the associated Function is OPERABLE.

SURVEILLANCE		FREQUENCY
SR 3.3.3.1.1	Perform CHANNEL CHECK.	31 days
SR 3.3.3.1.2	Perform CHANNEL CALIBRATION for Functions 7 and 8.	92 days
SR 3.3.3.1.3	Perform CHANNEL CALIBRATION for Functions other than Functions 7 and 8.	24 months

Table 3.3.3.1-1 (page 1 of 1)
Post Accident Monitoring Instrumentation

FUNCTION	REQUIRED CHANNELS	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1
1. Reactor Steam Dome Pressure	2	E
2. Reactor Vessel Water Level		
a. Fuel Zone	2	E
b. Wide Range	2	E
3. Suppression Pool Water Level	2	E
4. Drywell Pressure		
a. Narrow Range	2	E
b. Wide Range	2	E
5. Primary Containment Gross Gamma Radiation	2	F
6. Penetration Flow Path PCIV Position	2 per penetration flow path[(a)(b)]	E
7. Drywell O_2 Concentration Analyzer	2	E
8. Drywell H_2 Concentration Analyzer	2	E
9. Suppression Pool Water Temperature	2	E

(a) Not required for isolation valves whose associated penetration flow path is isolated by at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.

(b) Only one position indication channel is required for penetration flow paths with only one installed control room indication channel.

3.3 INSTRUMENTATION

3.3.3.2 Remote Shutdown Monitoring System

LCO 3.3.3.2 The Remote Shutdown Monitoring System Functions shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

-----NOTES-----

1. LCO 3.0.4 is not applicable.
2. Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required Functions inoperable.	A.1 Restore required Function to OPERABLE status.	30 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

-----------------------------------NOTE-----------------------------------
When an instrumentation channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours.

SURVEILLANCE		FREQUENCY
SR 3.3.3.2.1	Perform CHANNEL CHECK for each required instrumentation channel that is normally energized.	31 days
SR 3.3.3.2.2	Perform CHANNEL CALIBRATION for each required instrumentation channel.	24 months

3.3 INSTRUMENTATION

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

LCO 3.3.4.1

a. Two channels per trip system for each EOC-RPT instrumentation Function listed below shall be OPERABLE:

1. Turbine Stop Valve (TSV) — Closure; and

2. Turbine Control Valve (TCV) — Fast Closure, Trip Oil Pressure — Low.

<u>OR</u>

b. LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," limits for inoperable EOC-RPT as specified in the COLR are made applicable.

APPLICABILITY: THERMAL POWER $\geq$ 25% RTP with any recirculation pump in fast speed.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required channels inoperable.	A.1 Restore channel to OPERABLE status. <u>OR</u>	72 hours (continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.2	--------NOTE--------- Not applicable if inoperable channel is the result of an inoperable breaker. --------------------- Place channel in trip.	 72 hours
B. One or more Functions with EOC-RPT trip capability not maintained. <u>AND</u> MCPR limit for inoperable EOC-RPT not made applicable.	B.1 <u>OR</u> B.2	Restore EOC-RPT trip capability. Apply the MCPR limit for inoperable EOC-RPT as specified in the COLR.	2 hours 2 hours
C. Required Action and associated Completion Time not met.	C.1 <u>OR</u> C.2	Remove the associated recirculation pump fast speed breaker from service. Reduce THERMAL POWER to < 25% RTP.	4 hours 4 hours

SURVEILLANCE REQUIREMENTS

------------------------------------NOTE------------------------------------
When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains EOC-RPT trip capability.

SURVEILLANCE		FREQUENCY
SR 3.3.4.1.1	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.4.1.2	Perform CHANNEL CALIBRATION. The Allowable Values shall be: a. TSV − Closure $\leq$ [7]% closed. b. TCV − Fast Closure, Trip Oil Pressure − Low: $\geq$ [424] psig.	24 months
SR 3.3.4.1.3	Perform LOGIC SYSTEM FUNCTIONAL TEST, including breaker actuation.	24 months
SR 3.3.4.1.4	Verify TSV − Closure and TCV − Fast Closure, Trip Oil Pressure − Low Functions are not bypassed when THERMAL POWER is $\geq$ 25% RTP.	24 months

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.4.1.5	------------------NOTE------------------ 1. Breaker arc suppression time may be assumed from the most recent performance of SR 3.3.4.1.6. 2. The Turbine Stop Valve — Closure Function limit switch response time may be conservatively assumed. -- Verify the EOC-RPT SYSTEM RESPONSE TIME is within limits.	24 months on a STAGGERED TEST BASIS
SR 3.3.4.1.6	Determine RPT breaker arc suppression time.	60 months

3.3 INSTRUMENTATION

3.3.4.2 Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT) Instrumentation

LCO 3.3.4.2 Two channels per trip system for each ATWS-RPT instrumentation Function listed below shall be OPERABLE:

a. Reactor Vessel Water Level — Low Low, Level 2; and

b. Reactor Steam Dome Pressure — High.

APPLICABILITY: MODE 1.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Restore channel to OPERABLE status. <u>OR</u> A.2 --------NOTE-------- Not applicable if inoperable channel is the result of an inoperable breaker. -------------------- Place channel in trip.	14 days 14 days

(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One Function with ATWS-RPT trip capability not maintained.	B.1	Restore ATWS-RPT trip capability.	72 hours
C. Both Functions with ATWS-RPT trip capability not maintained.	C.1	Restore ATWS-RPT trip capability for one Function.	1 hour
D. Required Action and associated Completion Time not met.	D.1	Remove the associated recirculation pump from service.	6 hours
	<u>OR</u>		
	D.2	Be in MODE 2.	6 hours

SURVEILLANCE REQUIREMENTS

------------------------------------NOTE------------------------------------
When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains ATWS-RPT trip capability.

SURVEILLANCE		FREQUENCY
SR 3.3.4.2.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.4.2.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.4.2.3	Perform CHANNEL CALIBRATION. The Allowable Values shall be: a. Reactor Vessel Water Level — Low Low, Level 2: $\geq$ [-54] inches; and b. Reactor Steam Dome Pressure — High: $\leq$ [1147] psig.	24 months
SR 3.3.4.2.4	Perform LOGIC SYSTEM FUNCTIONAL TEST, including breaker actuation.	24 months

3.3 INSTRUMENTATION

3.3.5.1 Emergency Core Cooling System (ECCS) Instrumentation

LCO 3.3.5.1 The ECCS instrumentation for each Function in Table 3.3.5.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.5.1-1.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Enter the Condition referenced in Table 3.3.5.1-1 for the channel.	Immediately

(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. As required by Required Action A.1 and referenced in Table 3.3.5.1-1.	B.1	--------NOTES-------- 1. Only applicable in MODES 1, 2, and 3. 2. Only applicable for Functions 1.a, 1.b, 2.a and 2.b. ---------------------	
		Declare supported feature(s) inoperable when its redundant feature ECCS initiation capability is inoperable.	1 hour from discovery of loss of initiation capability for feature(s) in both divisions
	<u>AND</u>		
	B.2	--------NOTES-------- 1. Only applicable in MODES 1, 2, and 3. 2. Only applicable for Functions 3.a and 3.b. ---------------------	
		Declare High Pressure Core Spray (HPCS) System inoperable.	1 hour from discovery of loss of HPCS initiation capability
	<u>AND</u>		
	B.3	Place channel in trip.	24 hours

(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. As required by Required Action A.1 and referenced in Table 3.3.5.1-1.	C.1	--------NOTES-------- 1. Only applicable in MODES 1, 2, and 3. 2. Only applicable for Functions 1.c and 2.c. --------------------- Declare supported feature(s) inoperable when its redundant feature ECCS initiation capability is inoperable.	1 hour from discovery of loss of initiation capability for feature(s) in both divisions
	<u>AND</u>		
	C.2	Restore channel to OPERABLE status.	24 hours

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. As required by Required Action A.1 and referenced in Table 3.3.5.1-1.	D.1 --------NOTES-------- 1. Only applicable in MODES 1, 2, and 3. 2. Only applicable for Functions 1.d, 1.e, 1.f, 1.g, 2.d, 2.e, and 2.f. --------------------- Declare supported feature(s) inoperable when its redundant feature ECCS initiation capability is inoperable.	1 hour from discovery of loss of initiation capability for feature(s) in both divisions
	<u>AND</u>	
	D.2 --------NOTE--------- Only applicable for Functions 1.d and 2.d. --------------------- Declare supported feature(s) inoperable.	24 hours from discovery of loss of initiation capability for feature(s) in one division
	<u>AND</u>	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	D.3	--------NOTE--------- Only applicable for Functions 1.g and 2.f. --------------------- Restore channel to OPERABLE status.	24 hours
	<u>AND</u>		
	D.4	Restore channel to OPERABLE status.	7 days
E. As required by Required Action A.1 and referenced in Table 3.3.5.1-1.	E.1	Declare Automatic Depressurization System (ADS) valves inoperable.	1 hour from discovery of loss of ADS initiation capability in both trip systems
	<u>AND</u>		
	E.2	Place channel in trip.	96 hours from discovery of inoperable channel concurrent with HPCS or reactor core isolation cooling (RCIC) inoperable <u>AND</u> 8 days

(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
F. As required by Required Action A.1 and referenced in Table 3.3.5.1-1.	F.1	--------NOTE--------- Only applicable for Functions 4.c, 4.e, 4.f, 4.g, 5.c, 5.e, and 5.f. --------------------- Declare ADS valves inoperable.	1 hour from discovery of loss of ADS initiation capability in both trip systems
	<u>AND</u>		
	F.2	Restore channel to OPERABLE status.	96 hours from discovery of inoperable channel concurrent with HPCS or RCIC inoperable <u>AND</u> 8 days
G. Required Action and associated Completion Time of Condition B, C, D, E, or F not met.	G.1	Declare associated supported feature(s) inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

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

1. Refer to Table 3.3.5.1-1 to determine which SRs apply for each ECCS Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed as follows: (a) for up to 6 hours for Functions 3.c, 3.d, 3.e, and 3.f; and (b) for up to 6 hours for Functions other than 3.c, 3.d, 3.e, and 3.f, provided the associated Function or the redundant Function maintains ECCS initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.5.1.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.5.1.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.5.1.3	Perform CHANNEL CALIBRATION.	92 days
SR 3.3.5.1.4	Perform CHANNEL CALIBRATION.	24 months
SR 3.3.5.1.5	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 months

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

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Low Pressure Coolant Injection-A (LPCI) and Low Pressure Core Spray (LPCS) Subsystems					
a. Reactor Vessel Water Level — Low Low Low, Level 1	1,2,3, 4(a),5(a)	2(b)	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ [-137.0] inches
b. Drywell Pressure — High	1,2,3	2(b)	B	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≤ [1.77] psig
c. LPCI Pump A Start — Time Delay Relay	1,2,3, 4(a),5(a)	1	C	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≤ [6] seconds
d. Reactor Steam Dome Pressure — Low (Injection Permissive)	1,2,3	2	D	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ [490] psig and ≤ [520] psig
	4(a),5(a)	2	B	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ [490] psig and ≤ [520] psig
e. LPCS Pump Discharge Flow — Low (Bypass)	1,2,3, 4(a),5(a)	1	D	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ [850] gpm and ≤ [1811] gpm
f. LPCI Pump A Discharge Flow — Low (Bypass)	1,2,3, 4(a),5(a)	1	D	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ [800] gpm and ≤ [2130] gpm
g. LPCS and LPCI A Injection Line Pressure—Low (Injection Permissive)	1,2,3	1 per valve	D	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ [490] psig and ≤ [520] psig
	4(a),5(a)	1 per valve	B	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ [490] psig and ≤ [520] psig
h. Manual Initiation	1,2,3, 4(a),5(a)	1	C	SR 3.3.5.1.5	NA

(continued)

(a) When associated ECCS subsystem(s) are required to be OPERABLE per LCO 3.5.2, "ECCS—Shutdown."

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

Table 3.3.5.1-1 (page 2 of 4)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
2. LPCI B and LPCI C Subsystems					
a. Reactor Vessel Water Level — Low Low Low, Level 1	1,2,3, 4(a),5(a)	2(b)	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ [-137.0] inches
b. Drywell Pressure — High	1,2,3	2(b)	B	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≤ [1.77] psig
c. LPCI Pump B Start — Time Delay Relay	1,2,3, 4(a),5(a)	1	C	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≤ [6] seconds
d. Reactor Steam Dome Pressure — Low (Injection Permissive)	1,2,3	2	D	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ [490] psig and ≤ [520] psig
	4(a),5(a)	2	B	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ [490] psig and ≤ [520] psig
e. LPCI Pump B and LPCI Pump C Discharge Flow — Low (Bypass)	1,2,3, 4(a),5(a)	1 per pump	D	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ [800] gpm and ≤ [2130] gpm
f. LPCI B and LPCI C Injection Line Pressure—Low (Injection Permissive)	1,2,3	1 per valve	D	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ [490] psig and ≤ [520] psig
	4(a),5(a)	1 per valve	B	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ [490] psig and ≤ [520] psig
g. Manual Initiation	1,2,3, 4(a),5(a)	1	C	SR 3.3.5.1.5	NA

(continued)

(a) When associated ECCS subsystem(s) are required to be OPERABLE per LCO 3.5.2.

(b) Also required to initiate the associated DG.

Table 3.3.5.1-1 (page 3 of 4)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
3. High Pressure Core Spray (HPCS) System					
a. Reactor Vessel Water Level — Low Low, Level 2	1,2,3, 4(a),5(a)	4(b)	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ [-54.0] inches
b. Drywell Pressure — High	1,2,3	4(b)	B	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≤ [1.77] psig
c. Reactor Vessel Water Level — High, Level 8	1,2,3, 4(a),5(a)	2	C	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≤ [59.6] inches
d. HPCS Pump Discharge Pressure — High (Bypass)	1,2,3, 4(a),5(a)	1	D	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ [110] psig
e. HPCS System Flow Rate — Low (Bypass)	1,2,3, 4(a),5(a)	1	D	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ [1200] gpm and ≤ [1660] gpm
f. Manual Initiation	1,2,3, 4(a),5(a)	1	C	SR 3.3.5.1.5	NA
4. Automatic Depressurization System (ADS) Trip System A					
a. Reactor Vessel Water Level — Low Low Low, Level 1	1,2(c),3(c)	2	E	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ [-137.0] inches
b. Drywell Pressure — High	1,2(c),3(c)	2	E	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≤ [1.77] psig
c. ADS Initiation Timer	1,2(c),3(c)	1	F	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≤ [117] seconds

(continued)

(a) When associated ECCS subsystem(s) are required to be OPERABLE per LCO 3.5.2.

(b) Also required to initiate the associated DG.

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

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

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
4. ADS Trip System A (continued)					
d. Reactor Vessel Water Level — Low, Level 3 (Confirmatory)	$1,2^{(c)},3^{(c)}$	1	E	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ [10.9] inches
e. LPCS Pump Discharge Pressure — High	$1,2^{(c)},3^{(c)}$	2	F	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ [136] psig and ≤ [186] psig
f. LPCI Pump A Discharge Pressure — High	$1,2^{(c)},3^{(c)}$	2	F	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ [106] psig and ≤ [156] psig
g. ADS Drywell Pressure Bypass Timer	$1,2^{(c)},3^{(c)}$	2	F	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≤ [9.5] minutes
h. Manual Initiation	$1,2^{(c)},3^{(c)}$	2	F	SR 3.3.5.1.5	NA
5. ADS Trip System B					
a. Reactor Vessel Water Level — Low Low Low, Level 1	$1,2^{(c)},3^{(c)}$	2	E	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ [-137.0] inches
b. Drywell Pressure — High	$1,2^{(c)},3^{(c)}$	2	E	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≤ [1.77] psig
c. ADS Initiation Timer	$1,2^{(c)},3^{(c)}$	1	F	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≤ [117] seconds
d. Reactor Vessel Water Level — Low, Level 3 (Confirmatory)	$1,2^{(c)},3^{(c)}$	1	E	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ [10.9] inches
e. LPCI Pumps B & C Discharge Pressure — High	$1,2^{(c)},3^{(c)}$	2 per pump	F	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ [106] psig and ≤ [156] psig
f. ADS Drywell Pressure Bypass Timer	$1,2^{(c)},3^{(c)}$	2	F	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≤ [9.5] minutes
g. Manual Initiation	$1,2^{(c)},3^{(c)}$	2	F	SR 3.3.5.1.5	NA

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

3.3 INSTRUMENTATION

3.3.5.2 Reactor Core Isolation Cooling (RCIC) System Instrumentation

LCO 3.3.5.2 The RCIC System instrumentation for each Function in Table 3.3.5.2-1 shall be OPERABLE.

APPLICABILITY: MODE 1,
MODES 2 and 3 with reactor steam dome pressure > 150 psig.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Enter the Condition referenced in Table 3.3.5.2-1 for the channel.	Immediately
B. As required by Required Action A.1 and referenced in Table 3.3.5.2-1.	B.1 Declare RCIC System inoperable. <u>AND</u> B.2 Place channel in trip.	1 hour from discovery of loss of RCIC initiation capability 24 hours

(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. As required by Required Action A.1 and referenced in Table 3.3.5.2-1.	C.1	Restore channel to OPERABLE status.	24 hours
D. As required by Required Action A.1 and referenced in Table 3.3.5.2-1.	D.1	--------NOTE--------- Only applicable if RCIC pump suction is not aligned to the suppression pool. --------------------	
		Declare RCIC System inoperable.	1 hour from discovery of loss of RCIC initiation capability
	<u>AND</u>		
	D.2.1	Place channel in trip.	24 hours
	<u>OR</u>		
	D.2.2	Align RCIC pump suction to the suppression pool.	24 hours
E. Required Action and associated Completion Time of Condition B, C, or D not met.	E.1	Declare RCIC System inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

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

1. Refer to Table 3.3.5.2-1 to determine which SRs apply for each RCIC Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed as follows: (a) for up to 6 hours for Functions 2 and 4; and (b) for up to 6 hours for Functions 1 and 3 provided the associated Function maintains RCIC initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.5.2.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.5.2.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.5.2.3	Perform CHANNEL CALIBRATION.	24 months
SR 3.3.5.2.4	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 months

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

FUNCTION	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Reactor Vessel Water Level — Low Low, Level 2	4	B	SR 3.3.5.2.2 SR 3.3.5.2.3 SR 3.3.5.2.4	≥ [-54.0] inches
2. Reactor Vessel Water Level — High, Level 8	2	C	SR 3.3.5.2.1 SR 3.3.5.2.2 SR 3.3.5.2.3 SR 3.3.5.2.4	≤ [59.6] inches
3. Condensate Storage Tank Level — Low	2	D	SR 3.3.5.2.2 SR 3.3.5.2.3 SR 3.3.5.2.4	≥ [715 ft 8] inches
4. Manual Initiation	1	C	SR 3.3.5.2.4	NA

3.3 INSTRUMENTATION

3.3.6.1 Primary Containment Isolation Instrumentation

LCO 3.3.6.1 The primary containment isolation instrumentation for each Function in Table 3.3.6.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.6.1-1.

ACTIONS

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

1. Separate Condition entry is allowed for each channel.

2. For Function 1.e, when automatic isolation capability is inoperable for required Reactor Building Ventilation System corrective maintenance, filter changes, damper cycling, or required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 4 hours.

3. For Function 1.e, when automatic isolation capability is inoperable due to loss of reactor building ventilation or for performance of SR 3.6.4.1.3 or SR 3.6.4.1.4, entry into associated Conditions and Required Action may be delayed for up to 12 hours.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Place channel in trip.	12 hours for Functions 2.b, 2.f, and 5.a <u>AND</u> 24 hours for Functions other than Functions 2.b, 2.f, and 5.a

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more automatic Functions with isolation capability not maintained.	B.1 Restore isolation capability.	1 hour
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Enter the Condition referenced in Table 3.3.6.1-1 for the channel.	Immediately
D. As required by Required Action C.1 and referenced in Table 3.3.6.1-1.	D.1 Isolate associated main steam line (MSL).	12 hours
	<u>OR</u>	
	D.2.1 Be in MODE 3.	12 hours
	<u>AND</u>	
	D.2.2 Be in MODE 4.	36 hours
E. As required by Required Action C.1 and referenced in Table 3.3.6.1-1.	E.1 Be in MODE 2.	6 hours
F. As required by Required Action C.1 and referenced in Table 3.3.6.1-1.	F.1 Isolate the affected penetration flow path(s).	1 hour

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. As required by Required Action C.1 and referenced in Table 3.3.6.1-1.	G.1 Isolate the affected penetration flow path(s).	24 hours
H. Required Action and associated Completion Time of Condition F or G not met. <u>OR</u> As required by Required Action C.1 and referenced in Table 3.3.6.1-1.	H.1 Be in MODE 3. <u>AND</u> H.2 Be in MODE 4.	12 hours 36 hours
I. As required by Required Action C.1 and referenced in Table 3.3.6.1-1.	I.1 Declare associated standby liquid control (SLC) subsystem inoperable. <u>OR</u> I.2 Isolate the Reactor Water Cleanup (RWCU) System.	1 hour 1 hour

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
J. As required by Required Action C.1 and referenced in Table 3.3.6.1-1.	J.1 Initiate action to restore channel to OPERABLE status.	Immediately
	<u>OR</u>	
	J.2 Initiate action to isolate the Residual Heat Removal (RHR) Shutdown Cooling (SDC) System.	Immediately

SURVEILLANCE REQUIREMENTS

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

1. Refer to Table 3.3.6.1-1 to determine which SRs apply for each Primary Containment Isolation Function.
2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains isolation capability.

SURVEILLANCE	FREQUENCY
SR 3.3.6.1.1 Perform CHANNEL CHECK.	12 hours
SR 3.3.6.1.2 Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.6.1.3 Perform CHANNEL CALIBRATION.	92 days

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.6.1.4	Perform CHANNEL CALIBRATION.	24 months
SR 3.3.6.1.5	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 months
SR 3.3.6.1.6	--------------------NOTE--------------- The sensor response time may be assumed to be the design sensor response time. -- Verify the ISOLATION SYSTEM RESPONSE TIME of the Main Steam Isolation Valves is within limits.	24 months on a STAGGERED TEST BASIS

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

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION C.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Main Steam Line Isolation					
a. Reactor Vessel Water Level — Low Low Low, Level 1	1,2,3	2	D	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5 SR 3.3.6.1.6	≥ [-137.0] inches
b. Main Steam Line Pressure — Low	1	2	E	SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6	≥ [827] psig
c. Main Steam Line Flow — High	1,2,3	2 per MSL	D	SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6	≤ [116] psid
d. Condenser Vacuum — Low	1,2(a), 3(a)	2	D	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≥ [3.8] inches Hg vacuum
e. Main Steam Line Tunnel Differential Temperature — High	1,2,3	2	D	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ [67°F]
f. Manual Initiation	1,2,3	2	G	SR 3.3.6.1.5	NA
2. Primary Containment Isolation					
a. Reactor Vessel Water Level — Low Low, Level 2	1,2,3	2	H	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≥ [-54.0] inches
b. Drywell Pressure — High	1,2,3	2	H	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ [1.93] psig
c. Reactor Building Ventilation Exhaust Plenum Radiation-High	1,2,3	2	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ [12.9] mR/hr
d. Fuel Pool Ventilation Exhaust Radiation—High	1,2,3	2	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ [15] mR/hr

(continued)

(a) With any turbine stop valve not closed.

Table 3.3.6.1-1 (page 2 of 4)
Primary Containment Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION C.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
2. Primary Containment Isolation (continued)					
e. Reactor Vessel Water Level—Low Low Low, Level 1	1,2,3	2	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≥ [-137.0] inches
f. Reactor Vessel Water Level—Low, Level 3	1,2,3	2	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≥ [10.9] inches
g. Manual Initiation	1,2,3	1	G	SR 3.3.6.1.5	NA
3. Reactor Core Isolation Cooling (RCIC) System Isolation					
a. RCIC Steam Line Flow — High	1,2,3	1	F	SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5	≤ [169] inches water
b. RCIC Steam Line Flow— Timer	1,2,3	1	F	SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5	≥ [3] seconds and ≤ [7] seconds
c. RCIC Steam Supply Pressure — Low	1,2,3	2	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≥ [58.2] psig
d. RCIC Turbine Exhaust Diaphragm Pressure — High	1,2,3	2	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ [24.0] psig
e. RCIC Equipment Room Temperature — High	1,2,3	1	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ [277]°F
f. RCIC Equipment Room Differential Temperature — High	1,2,3	1	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ [153]°F
g. RCIC Steam Line Tunnel Temperature — High	1,2,3	1	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ [277]°F
h. RCIC Steam Line Tunnel Differential Temperature — High	1,2,3	1	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ [153]°F
i. Drywell Pressure — High	1,2,3	2	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ [1.77] psig

(continued)

Table 3.3.6.1-1 (page 3 of 4)
Primary Containment Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION C.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
3. RCIC System Isolation (continued)					
j. Manual Initiation	1,2,3	1(b)	G	SR 3.3.6.1.5	NA
4. Reactor Water Cleanup (RWCU) System Isolation					
a. Differential Flow — High	1,2,3	1	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ [85] gpm
b. Differential Flow — Timer	1,2,3	1	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ [46] seconds
c. RWCU Heat Exchanger Areas Temperature-High	1,2,3	1 per area	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ [157]°F
d. RWCU Heat Exchanger Areas Ventilation Differential Temperature — High	1,2,3	1 per area	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ [39]°F
e. RWCU Pump and Valve Area Temperature — High	1,2,3	1 per area	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ [209]°F
f. RWCU Pump and Valve Area Differential Temperature — High	1,2,3	1 per area	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ [91]°F
g. RWCU Holdup Pipe Area Temperature — High	1,2,3	1	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ [209]°F
h. RWCU Holdup Pipe Area Ventilation Differential Temperature — High	1,2,3	1	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ [91]°F
i. RWCU Filter/ Demineralizer Valve Room Area Temperature—High	1,2,3	1	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ [209]°F
j. RWCU Filter/ Demineralizer Valve Room Area Ventilation Differential Temperature — High	1,2,3	1	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ [91]°F

(continued)

(b) Only inputs into one of two trip systems.

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

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION C.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
4. RWCU System Isolation (continued)					
k. Reactor Vessel Water Level — Low Low, Level 2	1,2,3	2	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≥ [-54.0] inches
l. Standby Liquid Control System Initiation	1,2	2(b)	I	SR 3.3.6.1.5	NA
m. Manual Initiation	1,2,3	1	G	SR 3.3.6.1.5	NA
5. RHR Shutdown Cooling System Isolation					
a. Reactor Vessel Water Level — Low, Level 3	3,4,5	2(c)	J	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≥ [10.9] inches
b. Reactor Vessel Pressure — High	1,2,3	1	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ [142] psig
(c) Manual Initiation	1,2,3	1	G	SR 3.3.6.1.5	NA

(b) Only inputs into one of two trip systems.

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

3.3 INSTRUMENTATION

3.3.6.2 Secondary Containment Isolation Instrumentation

LCO 3.3.6.2 The secondary containment isolation instrumentation for each Function in Table 3.3.6.2-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.6.2-1.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Place channel in trip.	12 hours for Function 2 AND 24 hours for Functions other than Function 2
B. One or more automatic Functions with isolation capability not maintained.	B.1 Restore isolation capability.	1 hour
C. Required Action and associated Completion Time not met.	C.1.1 Isolate the associated penetration flow path(s). OR	1 hour (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	C.1.2 Declare associated secondary containment isolation valve(s) inoperable.	1 hour
	AND	
	C.2.1 Place the associated standby gas treatment (SGT) subsystem(s) in operation.	1 hour
	OR	
	C.2.2 Declare associated SGT subsystem(s) inoperable.	1 hour

SURVEILLANCE REQUIREMENTS

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

1. Refer to Table 3.3.6.2-1 to determine which SRs apply for each Secondary Containment Isolation Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours, provided the associated Function maintains isolation capability.

SURVEILLANCE	FREQUENCY
SR 3.3.6.2.1 Perform CHANNEL CHECK.	12 hours

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.6.2.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.6.2.3	Perform CHANNEL CALIBRATION.	24 months
SR 3.3.6.2.4	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 months

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

FUNCTION	APPLICABLE MODES AND OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Reactor Vessel Water Level — Low Low, Level 2	1,2,3,(a)	2	SR 3.3.6.2.2 SR 3.3.6.2.3 SR 3.3.6.2.4	≥ [-54.0] inches
2. Drywell Pressure — High	1,2,3	2	SR 3.3.6.2.2 SR 3.3.6.2.3 SR 3.3.6.2.4	≤ [1.93] psig
3. Reactor Building Ventilation Exhaust Plenum Radiation — High	1,2,3, (a),(b)	2	SR 3.3.6.2.1 SR 3.3.6.2.2 SR 3.3.6.2.3 SR 3.3.6.2.4	≤ [12.9] mR/hr
4. Fuel Pool Ventilation Exhaust Radiation — High	1,2,3, (a),(b)	2	SR 3.3.6.2.1 SR 3.3.6.2.2 SR 3.3.6.2.3 SR 3.3.6.2.4	≤ [15] mR/hr
5. Manual Initiation	1,2,3, (a),(b)	1	SR 3.3.6.2.4	NA

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

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

3.3 INSTRUMENTATION

3.3.7.1 Control Room Area Filtration (CRAF) System Instrumentation

LCO 3.3.7.1 Two channels per trip system for the Control Room Air Intake Radiation—High Function shall be OPERABLE for each CRAF subsystem.

APPLICABILITY: MODES 1, 2, and 3,
During movement of irradiated fuel assemblies in the secondary containment,
During CORE ALTERATIONS,
During operations with a potential for draining the reactor vessel (OPDRVs).

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Declare associated CRAF subsystem inoperable.	1 hour from discovery of loss of CRAF subsystem initiation capability
	<u>AND</u>	
	A.2 Place channel in trip.	6 hours

(continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. Required Action and associated Completion Time not met.	B.1	Place the associated CRAF subsystem in the pressurizaton mode of operation.	1 hour
	<u>OR</u>		
	B.2	Declare associated CRAF subsystem inoperable.	1 hour

SURVEILLANCE REQUIREMENTS

-----------------------------------NOTE-----------------------------------
When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains CRAF subsystem initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.7.1.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.7.1.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.7.1.3	Perform CHANNEL CALIBRATION. The Allowable Value shall be $\leq$ [3.5] mR/hr.	24 months
SR 3.3.7.1.4	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 months

3.3 INSTRUMENTATION

3.3.8.1 Loss of Power (LOP) Instrumentation

LCO 3.3.8.1 The LOP instrumentation for each Function in Table 3.3.8.1-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
When the associated diesel generator (DG) is required to be OPERABLE by LCO 3.8.2, "AC Sources — Shutdown."

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Place channel in trip.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Declare associated DG inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

------------------------------------NOTES------------------------------------
1. Refer to Table 3.3.8.1-1 to determine which SRs apply for each LOP Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 2 hours provided the associated Function maintains LOP initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.8.1.1	Perform CHANNEL FUNCTIONAL TEST.	24 months
SR 3.3.8.1.2	Perform CHANNEL CALIBRATION.	24 months
SR 3.3.8.1.3	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 months

Table 3.3.8.1-1 (page 1 of 1)
Loss of Power Instrumentation

FUNCTION	REQUIRED CHANNELS PER DIVISION	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Divisions 1 and 2 — 4.16 kV Emergency Bus Undervoltage			
a. Loss of Voltage — 4.16 kV Basis and Time Delay	2	SR 3.3.8.1.1 SR 3.3.8.1.2 SR 3.3.8.1.3	≥ [2363] V and ≤ [2887] with ≤ [11] seconds time delay and ≥ [2246V] and ≤ [2746] V with ≥ [5] seconds time delay
b. Degraded Voltage — 4.16 kV Basis	2	SR 3.3.8.1.1 SR 3.3.8.1.2 SR 3.3.8.1.3	≥ [3814] V and ≤ [3900] V
c. Degraded Voltage — Time Delay, No LOCA	2	SR 3.3.8.1.1 SR 3.3.8.1.2 SR 3.3.8.1.3	≥ [4.5] minutes and ≤ [5.5] minutes
d. Degraded Voltage — Time Delay, LOCA	2	SR 3.3.8.1.1 SR 3.3.8.1.2 SR 3.3.8.1.3	≥ [9] seconds and ≤ [11] seconds
2. Division 3 — 4.16 kV Emergency Bus Undervoltage			
a. Loss of Voltage — 4.16 kV Basis	2	SR 3.3.8.1.1 SR 3.3.8.1.2 SR 3.3.8.1.3	≥ [2583] V and ≤ [3157] V
b. Loss of Voltage — Time Delay	2	SR 3.3.8.1.1 SR 3.3.8.1.2 SR 3.3.8.1.3	≥ [2.0] seconds and ≤ [11] seconds
c. Degraded Voltage — 4.16 kV Basis	2	SR 3.3.8.1.1 SR 3.3.8.1.2 SR 3.3.8.1.3	≥ [3814] V and ≤ [3900] V
d. Degraded Voltage — Time Delay, No LOCA	2	SR 3.3.8.1.1 SR 3.3.8.1.2 SR 3.3.8.1.3	≥ [4.5] minutes and ≤ [5.5] minutes
e. Degraded Voltage — Time Delay, LOCA	2	SR 3.3.8.1.1 SR 3.3.8.1.2 SR 3.3.8.1.3	≥ [9] seconds and ≤ [11] seconds

3.3 INSTRUMENTATION

3.3.8.2 Reactor Protection System (RPS) Electric Power Monitoring

LCO 3.3.8.2 Two RPS electric power monitoring assemblies shall be OPERABLE for each inservice RPS motor generator set or alternate power supply.

APPLICABILITY: MODES 1, 2, and 3,
MODES 4 and 5 with residual heat removal (RHR) shutdown cooling (SDC) isolation valves open,
MODE 5, with any control rod withdrawn from a core cell containing one or more fuel assemblies,
During movement of irradiated fuel assemblies in the secondary containment,
During CORE ALTERATIONS,
During operations with a potential for draining the reactor vessel (OPDRVs).

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or both inservice power supplies with one electric power monitoring assembly inoperable.	A.1 Remove associated inservice power supply(s) from service.	72 hours
B. One or both inservice power supplies with both electric power monitoring assemblies inoperable.	B.1 Remove associated inservice power supply(s) from service.	1 hour

(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, or 3.	C.1	Be in MODE 3.	12 hours
	AND		
	C.2	Be in MODE 4.	36 hours
D. Required Action and associated Completion Time of Condition A or B not met in MODE 4 or 5 with RHR SDC isolation valves open.	D.1	Initiate action to restore one electric power monitoring assembly to OPERABLE status for inservice power supply(s) supplying required instrumentation.	Immediately
	OR		
	D.2	Initiate action to isolate the RHR SDC System.	Immediately
E. Required Action and associated Completion Time of Condition A or B not met in MODE 5 with any control rod withdrawn from a core cell containing one or more fuel assemblies.	E.1	Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Required Action and associated Completion Time of Condition A or B not met during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.	F.1.1 Isolate the associated secondary containment penetration flow path(s).	Immediately
	<u>OR</u>	
	F.1.2 Declare the associated secondary containment isolation valve(s) inoperable.	Immediately
	<u>AND</u>	
	F.2.1 Place the associated standby gas treatment (SGT) subsystem(s) in operation.	Immediately
	<u>OR</u>	
	F.2.2 Declare associated SGT subsystem(s) inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.8.2.1	-----------------NOTE------------------ Only required to be performed prior to entering MODE 2 or 3 from MODE 4, when in MODE 4 for ≥ 24 hours. --------------------------------------- Perform CHANNEL FUNCTIONAL TEST.	184 days
SR 3.3.8.2.2	Perform CHANNEL CALIBRATION. The Allowable Values shall be: a. Overvoltage ≤ [132] V (with time delay set to ≤ [4] seconds). b. Undervoltage ≥ [108] V (with time delay set to ≤ [4] seconds). c. Underfrequency ≥ [57] Hz (with time delay set to ≤ [4] seconds)	24 months
SR 3.3.8.2.3	Perform a system functional test.	24 months

B 3.3 INSTRUMENTATION

B 3.3.1.1 Reactor Protection System (RPS) Instrumentation

BASES

BACKGROUND

The RPS initiates a reactor scram when one or more monitored parameters exceed their specified limit to preserve the integrity of the fuel cladding and the reactor coolant pressure boundary (RCPB), and minimize the energy that must be absorbed following a loss of coolant accident (LOCA). This can be accomplished either automatically or manually.

The protection and monitoring functions of the RPS have been designed to ensure safe operation of the reactor. This is achieved by specifying limiting safety system settings (LSSS) in terms of parameters directly monitored by the RPS, as well as LCOs on other reactor system parameters, and equipment performance. The LSSS are defined in this Specification as the Allowable Values, which, in conjunction with the LCOs, establish the threshold for protective system action to prevent exceeding acceptable limits, including Safety Limits (SLs), during Design Basis Accidents (DBAs).

The RPS, as described in the UFSAR, Section 7.2 (Ref. 1), includes sensors, relays, bypass circuits, and switches that are necessary to cause initiation of a reactor scram. Functional diversity is provided by monitoring a wide range of dependent and independent parameters. The input parameters to the scram logic are from instrumentation that monitors reactor vessel water level; reactor vessel pressure; neutron flux; main steam line isolation valve position; turbine control valve (TCV) fast closure, trip oil pressure low; turbine stop valve (TSV) position; drywell pressure and scram discharge volume (SDV) water level; as well as reactor mode switch in shutdown position and manual scram signals. There are at least four redundant sensor input signals from each of these parameters. Most channels include instrument switches or electronic equipment (e.g., trip units) that compares measured input signals with pre-established setpoints. When a setpoint is exceeded, the channel outputs an RPS trip signal to the trip logic.

The RPS is comprised of two independent trip systems (A and B), with two logic channels in each trip system (logic channels A1 and A2, B1 and B2), as described in Reference 1.

(continued)

BASES

BACKGROUND (continued)

The outputs of the logic channels in a trip system are combined in a one-out-of-two logic so either channel can trip the associated trip system. The tripping of both trip systems will produce a reactor scram. This logic arrangement is referred to as one-out-of-two taken twice logic. Each trip system can be reset by use of a reset switch. If a full scram occurs (both trip systems trip), a relay prevents reset of the trip systems for 10 seconds. This 10 second delay on reset is only possible if the conditions that caused the scram have been cleared. This ensures that the scram function will be completed.

Two pilot scram valves are located in the hydraulic control unit (HCU) for each control rod drive (CRD). Each pilot scram valve is solenoid operated, with the solenoids normally energized. The pilot scram valves control the air supply to the scram inlet and outlet valves for the associated CRD. When either pilot scram valve solenoid is energized, air pressure holds the scram valves closed and, therefore, both pilot scram valve solenoids must be de-energized to cause a control rod to scram. The scram valves control the supply and discharge paths for the CRD water during a scram. One of the pilot scram valve solenoids for each CRD is controlled by trip system A, and the other solenoid is controlled by trip system B. Any trip of trip system A in conjunction with any trip in trip system B results in de-energizing both solenoids, air bleeding off, scram valves opening, and control rod scram.

The backup scram valves, which energize on a scram signal to depressurize the scram air header, are also controlled by the RPS. Additionally, the RPS System controls the SDV vent and drain valves such that when both trip systems trip, the SDV vent and drain valves close to isolate the SDV.

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

The actions of the RPS are assumed in the safety analyses of References 2, 3, and 4. The RPS initiates a reactor scram when monitored parameter values exceed the Allowable Values specified by the setpoint methodology and listed in Table 3.3.1.1-1 to preserve the integrity of the fuel cladding, the RCPB, and the containment by minimizing the energy that must be absorbed following a LOCA.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

RPS instrumentation satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii). Functions not specifically credited in the accident analysis are retained for the overall redundancy and diversity of the RPS as required by the NRC approved licensing basis.

The OPERABILITY of the RPS is dependent on the OPERABILITY of the individual instrumentation channel Functions specified in Table 3.3.1.1-1. Each Function must have a required number of OPERABLE channels per RPS trip system, with their setpoints within the specified Allowable Value, where appropriate. The actual setpoint is calibrated consistent with applicable setpoint methodology assumptions. Each channel must also respond within its assumed response time, where applicable.

Allowable Values are specified for each RPS Function specified in the Table. Nominal trip setpoints are specified in the setpoint calculations. The nominal setpoints are selected to ensure that the actual setpoints do not exceed the Allowable Value between successive CHANNEL CALIBRATIONS. Operation with a trip setpoint less conservative than the nominal trip setpoint, but within its Allowable Value, is acceptable. A channel is inoperable if its actual trip setpoint is not within its required Allowable Value.

Trip setpoints are those predetermined values of output at which an action should take place. The setpoints are compared to the actual process parameter (e.g., reactor vessel water level), and when the measured output value of the process parameter exceeds the setpoint, the associated device (e.g., trip unit) changes state. The analytic limits are derived from the limiting values of the process parameters obtained from the safety analysis. The trip setpoints are determined from the analytic limits, corrected for defined process, calibration, and instrumentation errors. The Allowable Values are then determined, based on the trip setpoint values, by accounting for the calibration based errors. These calibration based errors are limited to reference accuracy, instrument drift, errors associated with measurement and test equipment, and calibration tolerance of loop components. The trip setpoints and Allowable Values determined in this manner provide adequate protection

(continued)

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APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

because instrument uncertainties, process effects, calibration tolerances, instrument drift, and severe environment errors (for channels that must function in harsh environments as defined by 10 CFR 50.49) are accounted for and appropriately applied for the instrumentation.

The OPERABILITY of pilot scram valves and associated solenoids, backup scram valves, and SDV valves, described in the Background section, are not addressed by this LCO.

The individual Functions are required to be OPERABLE in the MODES or other conditions specified in the Table that may require an RPS trip to mitigate the consequences of a design basis accident or transient. To ensure a reliable scram function, a combination of Functions is required in each MODE to provide primary and diverse initiation signals.

The only MODES specified in Table 3.3.1.1-1 are MODES 1 and 2, and MODE 5 with any control rod withdrawn from a core cell containing one or more fuel assemblies. No RPS Function is required in MODES 3 and 4, since all control rods are fully inserted and the Reactor Mode Switch Shutdown Position control rod withdrawal block (LCO 3.3.2.1) does not allow any control rod to be withdrawn. Under these conditions, the RPS function is not required to be OPERABLE. In MODE 5, control rods withdrawn from a core cell containing no fuel assemblies do not affect the reactivity of the core and therefore are not required to have the capability to scram. Provided all other control rods remain inserted, no RPS Function is required. In this condition, the required SDM (LCO 3.1.1) and refuel position one-rod-out interlock (LCO 3.9.2) ensure that no event requiring RPS will occur.

The specific Applicable Safety Analyses, LCO, and Applicability discussions are listed below on a Function by Function basis.

1.a. Intermediate Range Monitor (IRM) Neutron Flux—High

The IRMs monitor neutron flux levels from the upper range of the source range monitors (SRMs) to the lower range of the average power range monitors (APRMs). The IRMs are capable of generating trip signals that can be used to prevent fuel

(continued)

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APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

1.a. Intermediate Range Monitor (IRM) Neutron Flux—High (continued)

damage resulting from abnormal operating transients in the intermediate power range. In this power range, the most significant source of reactivity change is due to control rod withdrawal. The IRM provides a diverse protection function from the rod worth minimizer (RWM), which monitors and controls the movement of control rods at low power. The RWM prevents the withdrawal of an out of sequence control rod during startup that could result in an unacceptable neutron flux excursion (Ref. 5). The IRM provides a backup to the APRM in mitigation of the neutron flux excursion. However, to demonstrate the capability of the IRM System to mitigate control rod withdrawal events, a generic analysis has been performed (Ref. 6) to evaluate the consequences of control rod withdrawal events during startup that are mitigated only by the IRM. This analysis, which assumes that one IRM channel in each trip system is bypassed, demonstrates that the IRMs provide protection against local control rod withdrawal errors and results in peak fuel enthalpy below the 170 cal/gm fuel failure threshold criterion.

The IRMs are also capable of limiting other reactivity excursions during startup, such as cold water injection events, although no credit is specifically assumed.

The IRM System is divided into two groups of IRM channels, with four IRM channels inputting to each trip system. The analysis of Reference 6 assumes that one channel in each trip system is bypassed. Therefore, six channels with three channels in each trip system are required for IRM OPERABILITY to ensure that no single instrument failure will preclude a scram from this Function on a valid signal. This trip is active in each of the 10 ranges of the IRM, which must be selected by the operator to maintain the neutron flux within the monitored level of an IRM range.

The analysis of Reference 6 has adequate conservatism to permit the IRM Allowable Value specified in Table 3.3.1.1-1.

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APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

1.a. Intermediate Range Monitor (IRM) Neutron Flux — High (continued)

The Intermediate Range Monitor Neutron Flux — High Function must be OPERABLE during MODE 2 when control rods may be withdrawn and the potential for criticality exists. In MODE 5, when a cell with fuel has its control rod withdrawn, the IRMs provide monitoring for and protection against unexpected reactivity excursions. In MODE 1, the APRM System, the RWM and Rod Block Monitor provide protection against control rod withdrawal error events and the IRMs are not required. The IRMs are automatically bypassed when the Reactor Mode Switch is in the run position.

1.b. Intermediate Range Monitor — Inop

This trip signal provides assurance that a minimum number of IRMs are OPERABLE. Anytime an IRM mode switch is moved to any position other than "Operate," the detector voltage drops below a preset level, or a module is not plugged in, an inoperative trip signal will be received by the RPS unless the IRM is bypassed. Since only one IRM in each trip system may be bypassed, only one IRM in each RPS trip system may be inoperable without resulting in an RPS trip signal.

This Function was not specifically credited in the accident analysis, but it is retained for the overall redundancy and diversity of the RPS as required by the NRC approved licensing basis.

Six channels of Intermediate Range Monitor — Inop with three channels in each trip system are required to be OPERABLE to ensure that no single instrument failure will preclude a scram from this Function on a valid signal.

There is no Allowable Value for this Function.

This Function is required to be OPERABLE when the Intermediate Range Monitor Neutron Flux — High Function is required.

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BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

2.a. Average Power Range Monitor Neutron Flux—High, Setdown

The APRM channels receive input signals from the local power range monitors (LPRM) within the reactor core, which provide an indication of the power distribution and local power changes. The APRM channels average these LPRM signals to provide a continuous indication of average reactor power from a few percent to greater than RTP. For operation at low power (i.e., MODE 2), the Average Power Range Monitor Neutron Flux—High, Setdown Function is capable of generating a trip signal that prevents fuel damage resulting from abnormal operating transients in this power range. For most operation at low power levels, the Average Power Range Monitor Neutron Flux—High, Setdown Function will provide a secondary scram to the Intermediate Range Monitor Neutron Flux—High Function because of the relative setpoints. With the IRMs at Range 9 or 10, it is possible that the Average Power Range Monitor Neutron Flux—High, Setdown Function will provide the primary trip signal for a corewide increase in power. The initial core, fuel cycle independent analysis provided in Reference 5 indicates that a primary trip signal from the Average Power Range Monitor Neutron Flux—High, Setdown Function would provide acceptable results.

The safety analyses (Ref. 5) take credit for the Average Power Range Monitor Neutron Flux—High, Setdown Function. This Function ensures that, before the reactor mode switch is placed in the run position, reactor power does not exceed 25% RTP (SL 2.1.1.1) when operating at low reactor pressure and low core flow. Therefore, it prevents fuel damage during significant reactivity increases with THERMAL POWER < 25% RTP.

The APRM System is divided into two groups of channels with three APRM channel inputs to each trip system. The system is designed to allow one channel in each trip system to be bypassed. Any one APRM channel in a trip system can cause the associated trip system to trip. Four channels of Average Power Range Monitor Neutron Flux—High, Setdown, with two channels in each trip system are required to be OPERABLE to ensure that no single failure will preclude a scram from this Function on a valid signal. In addition, to

(continued)

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APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

2.a. Average Power Range Monitor Neutron Flux — High, Setdown (continued)

provide adequate coverage of the entire core, at least 14 LPRM inputs are required for each APRM channel, with at least two LPRM inputs from each of the four axial levels at which the LPRMs are located.

The Allowable Value is based on preventing significant increases in power when THERMAL POWER is < 25% RTP.

The Average Power Range Monitor Neutron Flux — High, Setdown Function must be OPERABLE during MODE 2 when control rods may be withdrawn and the potential for fuel damage from abnormal operating transients exists. In MODE 1, the Average Power Range Monitor Neutron Flux — High Function provides protection against reactivity transients and the RWM and Rod Block Monitor protect against control rod withdrawal error events.

2.b. Average Power Range Monitor Flow Biased Simulated Thermal Power — Upscale

The Average Power Range Monitor Flow Biased Simulated Thermal Power — Upscale Function monitors neutron flux to approximate the THERMAL POWER being transferred to the reactor coolant. The APRM neutron flux is electronically filtered with a time constant representative of the fuel heat transfer dynamics to generate a signal proportional to the THERMAL POWER in the reactor. The trip level is varied as a function of recirculation drive flow (i.e., at lower core flows the setpoint is reduced proportional to the reduction in power experienced as core flow is reduced) but is clamped at an upper limit that is always lower than the Average Power Range Monitor Fixed Neutron Flux — High Function Allowable Value. The Average Power Range Monitor Flow Biased Simulated Thermal Power — Upscale Function provides protection against transients where THERMAL POWER increases slowly (such as the loss of feedwater heating event) and protects the fuel cladding integrity by ensuring that the MCPR SL is not exceeded. During these events, the THERMAL POWER increase does not significantly lag the neutron flux response and, because of a lower trip setpoint,

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APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

2.b. Average Power Range Monitor Flow Biased Simulated Thermal Power — Upscale (continued)

will initiate a scram before the high neutron flux scram. For rapid neutron flux increase events, the THERMAL POWER lags the neutron flux and the Average Power Range Monitor Fixed Neutron Flux — High Function will provide a scram signal before the Average Power Range Monitor Flow Biased Simulated Thermal Power — Upscale Function setpoint is exceeded.

The APRM System is divided into two groups of channels with three APRM inputs to each trip system. The system is designed to allow one channel in each trip system to be bypassed. Any one Average Power Range Monitor channel in a trip system can cause the associated trip system to trip. Four channels of Average Power Range Monitor Flow Biased Simulated Thermal Power — Upscale, with two channels in each trip system arranged in one-out-of-two logic, are required to be OPERABLE to ensure that no single instrument failure will preclude a scram from this Function on a valid signal. In addition, to provide adequate coverage of the entire core, at least 14 LPRM inputs are required for each APRM channel, with at least two LPRM inputs from each of the four axial levels at which the LPRMs are located. Each APRM channel receives two independent, redundant flow signals representative of total recirculation drive flow. The total drive flow signals are generated by four flow units, two of which supply signals to the trip system A APRMs, while the other two supply signals to the trip system B APRMs. Each flow unit signal is provided by summing the flow signals from the two recirculation loops. These redundant flow signals are sensed from four pairs of elbow taps, two on each recirculation loops. No single active component failure can cause more than one of these two redundant signals to read incorrectly. To obtain the most conservative reference signals, the total flow signals from the two flow units (associated with a trip system as described above) are routed to a low auction circuit associated with each APRM. Each APRM's auction circuit selects the lower of the two flow unit signals for use as the scram trip reference for that particular APRM. Each required Average Power Range Monitor Flow Biased Simulated

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APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

2.b. Average Power Range Monitor Flow Biased Simulated Thermal Power — Upscale (continued)

Thermal Power — Upscale channel only requires an input from one OPERABLE flow unit, since the individual APRM channel will perform the intended function with only one OPERABLE flow unit input. However, in order to maintain single failure criteria for the Function, at least one required Average Power Range Monitor Flow Biased Simulated Thermal Power — Upscale channel in each trip system must be capable of maintaining an OPERABLE flow unit signal in the event of a failure of an auction circuit, or a flow unit, in the associated trip system (e.g., if a flow unit is inoperable, one of the two required Average Power Range Monitor Flow Biased Simulated Thermal Power — Upscale channels in the associated trip system must be considered inoperable).

Although the Average Power Range Monitor Flow Biased Simulated Thermal Power — Upscale Function is not specifically credited in the safety analysis, the associated Allowable Value provides additional margin from transient induced fuel damage beyond that provided by the Average Power Range Monitor Fixed Neutron Flux — High Function. "W," in the Allowable Value column of Table 3.3.1.1-1, is the percentage of recirculation loop flow which provides a rated core flow of 108.5 million lbs/hr. The THERMAL POWER time constant of $\leq$ 7 seconds is based on the fuel heat transfer dynamics and provides a signal that is proportional to the THERMAL POWER.

The Average Power Range Monitor Flow Biased Simulated Thermal Power — Upscale Function is required to be OPERABLE in MODE 1 when there is the possibility of generating excessive THERMAL POWER and potentially exceeding the SL applicable to high pressure and core flow conditions (MCPR SL). During MODES 2 and 5, other IRM and APRM Functions provide protection for fuel cladding integrity.

2.c. Average Power Range Monitor Fixed Neutron Flux — High

The APRM channels provide the primary indication of neutron flux within the core and respond almost instantaneously to neutron flux increases. The Average Power Range Monitor Fixed Neutron Flux — High Function is capable of generating a

(continued)

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APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

2.c. Average Power Range Monitor Fixed Neutron Flux—High (continued)

trip signal to prevent fuel damage or excessive Reactor Coolant System (RCS) pressure. For the overpressurization protection analysis of Reference 2, the Average Power Range Monitor Fixed Neutron Flux—High Function is assumed to terminate the main steam isolation valve (MSIV) closure event and, along with the safety/relief valves (S/RVs), limits the peak reactor pressure vessel (RPV) pressure to less than the ASME Code limits. The control rod drop accident (CRDA) analysis (Ref. 8) takes credit for the Average Power Range Monitor Fixed Neutron Flux—High Function to terminate the CRDA. The recirculation flow control failure event also credits this function (Ref. 4).

The APRM System is divided into two groups of channels with three APRM channels inputting to each trip system. The system is designed to allow one channel in each trip system to be bypassed. Any one APRM channel in a trip system can cause the associated trip system to trip. Four channels of Average Power Range Monitor Fixed Neutron Flux—High with two channels in each trip system arranged in a one-out-of-two logic are required to be OPERABLE to ensure that no single instrument failure will preclude a scram from this Function on a valid signal. In addition, to provide adequate coverage of the entire core, at least 14 LPRM inputs are required for each APRM channel, with at least two LPRM inputs from each of the four axial levels at which the LPRMs are located.

The Allowable Value is based on the Analytical Limit assumed in the CRDA analyses.

The Average Power Range Monitor Fixed Neutron Flux—High Function is required to be OPERABLE in MODE 1 where the potential consequences of the analyzed transients could result in the SLs (e.g., MCPR and RCS pressure) being exceeded. Although the Average Power Range Monitor Fixed Neutron Flux—High Function is assumed in the CRDA analysis (Ref. 8) that is applicable in MODE 2, the Average Power Range Monitor Neutron Flux—High, Setdown Function

(continued)

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APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

2.c. Average Power Range Monitor Fixed Neutron Flux – High (continued)

conservatively bounds the assumed trip and, together with the assumed IRM trips, provides adequate protection. Therefore, the Average Power Monitor Fixed Neutron Flux – High Function is not required in MODE 2.

2.d. Average Power Range Monitor – Inop

This signal provides assurance that a minimum number of APRMs are OPERABLE. Anytime an APRM mode switch is moved to any position other than Operate, an APRM module is unplugged, or the APRM has too few LPRM inputs (< 14), an inoperative trip signal will be received by the RPS, unless the APRM is bypassed. Since only one APRM in each trip system may be bypassed, only one APRM in each trip system may be inoperable without resulting in an RPS trip signal. This Function was not specifically credited in the accident analysis, but it is retained for the overall redundancy and diversity of the RPS as required by the NRC approved licensing basis.

Four channels of Average Power Range Monitor – Inop with two channels in each trip system are required to be OPERABLE to ensure that no single failure will preclude a scram from this Function on a valid signal.

There is no Allowable Value for this Function.

This Function is required to be OPERABLE in the MODES where the other APRM Functions are required.

3. Reactor Vessel Steam Dome Pressure – High

An increase in the RPV pressure during reactor operation compresses the steam voids and results in a positive reactivity insertion. This causes the neutron flux and THERMAL POWER transferred to the reactor coolant to increase, which could challenge the integrity of the fuel cladding and the RCPB. No specific safety analysis takes direct credit for this Function. However, the Reactor

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APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

3. Reactor Vessel Steam Dome Pressure — High (continued)

Vessel Steam Dome Pressure — High Function initiates a scram for transients that result in a pressure increase, counteracting the pressure increase by rapidly reducing core power. For the overpressurization protection analysis of Reference 2, the reactor scram (the analyses conservatively assume scram on the Average Power Range Monitor Fixed Neutron Flux — High signal, not the Reactor Vessel Steam Dome Pressure-High or the Main Steam Isolation Valve — Closure signals), along with the S/RVs, limits the peak RPV pressure to less than the ASME Section III Code limits.

High reactor pressure signals are initiated from four pressure switches that sense reactor pressure. The Reactor Vessel Steam Dome Pressure — High Allowable Value is chosen to provide a sufficient margin to the ASME Section III Code limits during the event.

Four channels of Reactor Vessel Steam Dome Pressure — High Function, with two channels in each trip system arranged in a one-out-of-two logic, are required to be OPERABLE to ensure that no single instrument failure will preclude a scram from this Function on a valid signal. The Function is required to be OPERABLE in MODES 1 and 2 since the RCS is pressurized and the potential for pressure increase exists.

4. Reactor Vessel Water Level — Low, Level 3

Low RPV water level indicates the capability to cool the fuel may be threatened. Should RPV water level decrease too far, fuel damage could result. Therefore, a reactor scram is initiated at Level 3 to substantially reduce the heat generated in the fuel from fission. The Reactor Vessel Water Level — Low, Level 3 Function is assumed in the analysis of the recirculation line break (Ref. 3). The reactor scram reduces the amount of energy required to be absorbed and, along with the actions of the Emergency Core Cooling Systems (ECCS), ensures that the fuel peak cladding temperature remains below the limits of 10 CFR 50.46.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

4. Reactor Vessel Water Level — Low, Level 3 (continued)

Reactor Vessel Water Level — Low, Level 3 signals are initiated from four differential pressure transmitters that sense the difference between the pressure due to a constant column of water (reference leg) and the pressure due to the actual water level (variable leg) in the vessel.

Four channels of Reactor Vessel Water Level — Low, Level 3 Function, with two channels in each trip system arranged in a one-out-of-two logic, are required to be OPERABLE to ensure that no single instrument failure will preclude a scram from this Function on a valid signal.

The Reactor Vessel Water Level — Low, Level 3 Allowable Value is selected to ensure that, for transients involving loss of all normal feedwater flow, initiation of the low pressure ECCS at RPV Water Level 1 will not be required.

The Function is required in MODES 1 and 2 where considerable energy exists in the RCS resulting in the limiting transients and accidents. ECCS initiations at Reactor Vessel Water Level — Low Low, Level 2 and Low Low Low, Level 1 provide sufficient protection for level transients in all other MODES.

5. Main Steam Isolation Valve — Closure

MSIV closure results in loss of the main turbine and the condenser as a heat sink for the Nuclear Steam Supply System and indicates a need to shut down the reactor to reduce heat generation. Therefore, a reactor scram is initiated on a Main Steam Isolation Valve — Closure signal before the MSIVs are completely closed in anticipation of the complete loss of the normal heat sink and subsequent overpressurization transient. However, for the overpressurization protection analysis of Reference 2, the Average Power Range Monitor Fixed Neutron Flux — High Function, along with the S/RVs, limits the peak RPV pressure to less than the ASME Code limits. That is, the direct scram on position switches for MSIV closure events is not assumed in the overpressurization analysis. Additionally, MSIV closure is assumed in the transients analyzed in Reference 4 (e.g., low steam line pressure, manual closure of MSIVs, high steam line flow).

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APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

5. Main Steam Isolation Valve — Closure (continued)

The reactor scram reduces the amount of energy required to be absorbed and, along with the actions of the ECCS, ensures that the fuel peak cladding temperature remains below the limits of 10 CFR 50.46.

MSIV closure signals are initiated from position switches located on each of the eight MSIVs. Each MSIV has two position switches; one inputs to RPS trip system A while the other inputs to RPS trip system B. Thus, each RPS trip system receives an input from eight Main Steam Isolation Valve — Closure channels, each consisting of one position switch. The logic for the Main Steam Isolation Valve — Closure Function is arranged such that either the inboard or outboard valve on three or more of the main steam lines (MSLs) must close in order for a scram to occur. In addition, certain combinations of valves closed in two lines will result in a half scam.

The Main Steam Isolation Valve — Closure Allowable Value is specified to ensure that a scram occurs prior to a significant reduction in steam flow, thereby reducing the severity of the subsequent pressure transient.

Sixteen channels of the Main Steam Isolation Valve — Closure Function with eight channels in each trip system are required to be OPERABLE to ensure that no single instrument failure will preclude the scram from this Function on a valid signal. This Function is only required in MODE 1 since, with the MSIVs open and the heat generation rate high, a pressurization transient can occur if the MSIVs close. In MODE 2, the heat generation rate is low enough so that the other diverse RPS functions provide sufficient protection.

6. Drywell Pressure — High

High pressure in the drywell could indicate a break in the RCPB. A reactor scram is initiated to minimize the possibility of fuel damage and to reduce the amount of energy being added to the coolant and the drywell. The

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

6. Drywell Pressure — High (continued)

Drywell Pressure — High Function is a secondary scram signal to Reactor Vessel Water Level — Low, Level 3 for LOCA analysis. This Function was not specifically credited with the Appendix K accident analysis to initiate a reactor trip, but is retained for the overall redundancy and diversity of the RPS as required by the NRC approved licensing basis.

The reactor scram reduces the amount of energy required to be absorbed and, along with the actions of the ECCS, ensures that the fuel peak cladding temperature remains below the limits of 10 CFR 50.46.

High drywell pressure signals are initiated from four pressure switches that sense drywell pressure. The Allowable Value was selected to be as low as possible and be indicative of a LOCA inside primary containment.

Four channels of Drywell Pressure — High Function, with two channels in each trip system, are required to be OPERABLE to ensure that no single instrument failure will preclude a scram from this Function on a valid signal. The Function is required in MODES 1 and 2 where considerable energy exists in the RCS, resulting in the limiting transients and accidents.

7.a, b. Scram Discharge Volume Water Level — High

The SDV receives the water displaced by the motion of the CRD pistons during a reactor scram. Should this volume fill to a point where there is insufficient volume to accept the displaced water, control rod insertion would be hindered. Therefore, a reactor scram is initiated when the remaining free volume is still sufficient to accommodate the water from a full core scram. However, even though the two types of Scram Discharge Volume Water Level — High Functions are an input to the RPS logic, no credit is taken for a scram initiated from these Functions for any of the design basis accidents or transients analyzed in the UFSAR. However, they are retained to ensure that the RPS remains OPERABLE.

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APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

7.a, b. Scram Discharge Volume Water Level — High (continued)

SDV water level is measured by two diverse methods. The level in each of the two SDVs is measured by two float type level switches and two transmitters and trip units for a total of eight level signals. The outputs of these devices are arranged so that there is a signal from a level switch and a transmitter and trip unit to each RPS logic channel. The level measurement instrumentation satisfies the recommendations of Reference 9.

The Allowable Value is chosen low enough to ensure that there is sufficient volume in the SDV to accommodate the water from a full scram.

Four channels of each type of Scram Discharge Volume Water Level — High Function, with two channels of each type in each trip system, are required to be OPERABLE to ensure that no single instrument failure will preclude a scram from these Functions on a valid signal. These Functions are required in MODES 1 and 2, and in MODE 5 with any control rod withdrawn from a core cell containing one or more fuel assemblies, since these are the MODES and other specified conditions when control rods are withdrawn. At all other times, this Function may be bypassed.

8. Turbine Stop Valve — Closure

Closure of the TSVs results in the loss of a heat sink that produces reactor pressure, neutron flux, and heat flux transients that must be limited. Therefore, a reactor scram is initiated at the start of TSV closure in anticipation of the transients that would result from the closure of these valves. The Turbine Stop Valve — Closure is the primary scram signal for the turbine trip event analyzed in Reference 4. For this event, the reactor scram reduces the amount of energy required to be absorbed and, along with the actions of the End of Cycle Recirculation Pump Trip (EOC-RPT) System, ensures that the MCPR SL is not exceeded.

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BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

8. Turbine Stop Valve – Closure (continued)

Turbine Stop Valve – Closure signals are initiated by valve stem position switches at each stop valve. Two switches are associated with each stop valve. One of the two switches provides input to RPS trip system A; the other, to RPS trip system B. Thus, each RPS trip system receives an input from four Turbine Stop Valve – Closure channels, each consisting of one valve stem position switch. The logic for the Turbine Stop Valve – Closure Function is such that three or more TSVs must be closed to produce a scram. In addition, certain combinations of two valves closed will result in a half scram.

This Function must be enabled at THERMAL POWER ≥ 25% RTP. This is normally accomplished automatically by pressure switches sensing turbine first stage pressure; therefore, opening the turbine bypass valves may affect this Function.

The Turbine Stop Valve – Closure Allowable Value is selected to detect imminent TSV closure thereby reducing the severity of the subsequent pressure transient.

Eight channels of Turbine Stop Valve – Closure Function, with four channels in each trip system, are required to be OPERABLE to ensure that no single instrument failure will preclude a scram from this Function if the TSVs should close. This Function is required, consistent with analysis assumptions, whenever THERMAL POWER is ≥ 25% RTP. This Function is not required when THERMAL POWER is < 25% RTP since the Reactor Vessel Steam Dome Pressure – High and the Average Power Range Monitor Fixed Neutron Flux – High Functions are adequate to maintain the necessary safety margins.

9. Turbine Control Valve Fast Closure, Trip Oil Pressure – Low

Fast closure of the TCVs results in the loss of a heat sink that produces reactor pressure, neutron flux, and heat flux transients that must be limited. Therefore, a reactor scram is initiated on TCV fast closure in anticipation of the

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APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

9. Turbine Control Valve Fast Closure, Trip Oil Pressure — Low (continued)

transients that would result from the closure of these valves. The Turbine Control Valve Fast Closure, Trip Oil Pressure — Low Function is the primary scram signal for the generator load rejection event analyzed in Reference 4. For this event, the reactor scram reduces the amount of energy required to be absorbed and, along with the actions of the EOC-RPT System, ensures that the MCPR SL is not exceeded.

Turbine Control Valve Fast Closure, Trip Oil Pressure — Low signals are initiated by the EHC fluid pressure to each control valve. There is one pressure switch associated with each control valve, the signal from each switch being assigned to a separate RPS logic channel. This Function must be enabled at THERMAL POWER $\geq$ 25% RTP. This is accomplished automatically by pressure switches sensing turbine first stage pressure; therefore, opening the turbine bypass valves may affect this Function.

The Turbine Control Valve Fast Closure, Trip Oil Pressure — Low Allowable Value is selected high enough to detect imminent TCV fast closure.

Four channels of Turbine Control Valve Fast Closure, Trip Oil Pressure — Low Function, with two channels in each trip system arranged in a one-out-of-two logic, are required to be OPERABLE to ensure that no single instrument failure will preclude a scram from this Function on a valid signal. This Function is required, consistent with the analysis assumptions, whenever THERMAL POWER is $\geq$ 25% RTP. This Function is not required when THERMAL POWER is < 25% RTP since the Reactor Vessel Steam Dome Pressure — High and the Average Power Range Monitor Fixed Neutron Flux — High Functions are adequate to maintain the necessary safety margins.

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BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

10. Reactor Mode Switch — Shutdown Position

The Reactor Mode Switch — Shutdown Position Function provides signals, via the manual scram logic channels, that are redundant to the automatic protective instrumentation channels and provide manual reactor trip capability. This Function was not specifically credited in the accident analysis, but it is retained for the overall redundancy and diversity of the RPS as required by the NRC approved licensing basis.

The reactor mode switch is a single switch with four channels (one from each of the four independent banks of contacts), each of which inputs into one of the RPS logic channels.

There is no Allowable Value for this Function since the channels are mechanically actuated based solely on reactor mode switch position.

Four channels of Reactor Mode Switch — Shutdown Position Function, with two channels in each trip system, are available and required to be OPERABLE. The Reactor Mode Switch — Shutdown Position Function is required to be OPERABLE in MODES 1 and 2, and in MODE 5 with any control rod withdrawn from a core cell containing one or more fuel assemblies, since these are the MODES and other specified conditions when control rods are withdrawn.

11. Manual Scram

The Manual Scram push button channels provide signals, via the manual scram logic channels, to each of the four RPS logic channels that are redundant to the automatic protective instrumentation channels and provide manual reactor trip capability. This Function was not specifically credited in the accident analysis, but it is retained for the overall redundancy and diversity of the RPS as required by the NRC approved licensing basis.

There is one Manual Scram push button channel for each of the four RPS logic channels. In order to cause a scram it is necessary that at least one channel in each trip system be actuated.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

11. Manual Scram (continued)

There is no Allowable Value for this Function since the channels are mechanically actuated based solely on the position of the push buttons.

Four channels of Manual Scram with two channels in each trip system arranged in a one-out-of-two logic, are available and required to be OPERABLE in MODES 1 and 2, and in MODE 5 with any control rod withdrawn from a core cell containing one or more fuel assemblies, since these are the MODES and other specified conditions when control rods are withdrawn.

ACTIONS

Note 1 has been provided to modify the ACTIONS related to RPS instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable RPS instrumentation channels provide appropriate compensatory measures for separate, inoperable channels. As such, Note 1 has been provided that allows separate Condition entry for each inoperable RPS instrumentation channel.

Note 2 has been provided to modify the ACTIONS for the RPS instrumentation functions of APRM Flow Biased Simulated Thermal Power—Upscale (Function 2.b) and APRM Fixed Neutron Flux—High (Function 2.c) when they are inoperable due to failure of SR 3.3.1.1.2 and gain adjustments are necessary. Note 2 allows entry into associated Conditions and Required Actions to be delayed for up to 2 hours if the gain adjustment factor (GAF) is high (non-conservative), and for up to 12 hours if the GAF is low (conservative). The GAF for any channel is defined as the power value determined by the heat balance divided by the APRM reading for that channel. Upon completion of the gain adjustment, or

(continued)

BASES

ACTIONS (continued)

expiration of the allowed time, the channel must be returned to OPERABLE status or the applicable Condition entered and the Required Actions taken. This Note is based on the time required to perform gain adjustments on multiple channels and additional time is allowed when the GAF is out of limits but conservative.

A.1 and A.2

Because of the diversity of sensors available to provide trip signals and the redundancy of the RPS design, an allowable out of service time of 12 hours has been shown to be acceptable (Ref. 10) to permit restoration of any inoperable required channel to OPERABLE status. However, this out of service time is only acceptable provided the associated Function's inoperable channel is in one trip system and the Function still maintains RPS trip capability (refer to Required Actions B.1, B.2, and C.1 Bases.) If the inoperable channel cannot be restored to OPERABLE status within the allowable out of service time, the channel or the associated trip system must be placed in the tripped condition per Required Actions A.1 and A.2. Placing the inoperable channel in trip (or the associated trip system in trip) would conservatively compensate for the inoperability, restore capability to accommodate a single failure, and allow operation to continue. Alternately, if it is not desired to place the channel (or trip system) in trip (e.g., as in the case where placing the inoperable channel in trip would result in a scram or recirculation pump trip (RPT)), Condition D must be entered and its Required Action taken.

B.1 and B.2

Condition B exists when, for any one or more Functions, at least one required channel is inoperable in each trip system. In this condition, provided at least one channel per trip system is OPERABLE, the RPS still maintains trip capability for that Function, but cannot accommodate a single failure in either trip system.

(continued)

BASES

ACTIONS

B.1 and B.2 (continued)

Required Actions B.1 and B.2 limit the time the RPS scram logic for any Function would not accommodate single failure in both trip systems (e.g., one-out-of-one and one-out-of-one arrangement for a typical four channel Function). The reduced reliability of this logic arrangement was not evaluated in Reference 10 for the 12 hour Completion Time. Within the 6 hour allowance, the associated Function will have all required channels either OPERABLE or in trip (or in any combination) in one trip system.

Completing one of these Required Actions restores RPS to an equivalent reliability level as that evaluated in Reference 10, which justified a 12 hour allowable out of service time as presented in Condition A. The trip system in the more degraded state should be placed in trip or, alternatively, all the inoperable channels in that trip system should be placed in trip (e.g., a trip system with two inoperable channels could be in a more degraded state than a trip system with four inoperable channels, if the two inoperable channels are in the same Function while the four inoperable channels are all in different Functions). The decision as to which trip system is in the more degraded state should be based on prudent judgment and current plant conditions (i.e., what MODE the plant is in). If this action would result in a scram or RPT, it is permissible to place the other trip system or its inoperable channels in trip.

The 6 hour Completion Time is judged acceptable based on the remaining capability to trip, the diversity of the sensors available to provide the trip signals, the low probability of extensive numbers of inoperabilities affecting all diverse Functions, and the low probability of an event requiring the initiation of a scram.

Alternately, if it is not desired to place the inoperable channels (or one trip system) in trip (e.g., as in the case where placing the inoperable channel or associated trip system in trip would result in a scram or RPT), Condition D must be entered and its Required Action taken.

(continued)

BASES

ACTIONS (continued)

C.1

Required Action C.1 is intended to ensure that appropriate actions are taken if multiple, inoperable, untripped channels within the same trip system for the same Function result in the Function not maintaining RPS trip capability. A Function is considered to be maintaining RPS trip capability when sufficient channels are OPERABLE or in trip (or the associated trip system is in trip), such that both trip systems will generate a trip signal from the given Function on a valid signal. For the typical Function with one-out-of-two taken twice logic and the IRM and APRM Functions, this would require both trip systems to have one channel OPERABLE or in trip (or the associated trip system in trip). For Function 5 (Main Steam Isolation Valve—Closure), this would require both trip systems to have each channel associated with the MSIVs in three MSLs (not necessarily the same MSLs for both trip systems), OPERABLE or in trip (or the associated trip system in trip). For Function 8 (Turbine Stop Valve—Closure), this would require both trip systems to have three channels, each OPERABLE or in trip (or the associated trip system in trip).

The Completion Time is intended to allow the operator time to evaluate and repair any discovered inoperabilities. The 1 hour Completion Time is acceptable because it minimizes risk while allowing time for restoration or tripping of channels.

D.1

Required Action D.1 directs entry into the appropriate Condition referenced in Table 3.3.1.1-1. The applicable Condition specified in the Table is Function and MODE or other specified condition dependent and may change as the Required Action of a previous Condition is completed. Each time an inoperable channel has not met any Required Action of Condition A, B, or C, and the associated Completion Time has expired, Condition D will be entered for that channel and provides for transfer to the appropriate subsequent Condition.

(continued)

BASES

ACTIONS (continued)

E.1, F.1, and G.1

If the channel(s) is not restored to OPERABLE status or placed in trip (or the associated trip system placed in trip) within the allowed Completion Time, the plant must be placed in a MODE or other specified condition in which the LCO does not apply. The Completion Times are reasonable, based on operating experience, to reach the specified condition from full power conditions in an orderly manner and without challenging plant systems. In addition, the Completion Time of Required Action E.1 is consistent with the Completion Time provided in LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)."

H.1

If the channel(s) is not restored to OPERABLE status or placed in trip (or the associated trip system placed in trip) within the allowed Completion Time, the plant must be placed in a MODE or other specified condition in which the LCO does not apply. This is done by immediately initiating action to fully insert all insertable control rods in core cells containing one or more fuel assemblies. Control rods in core cells containing no fuel assemblies do not affect the reactivity of the core and are, therefore, not required to be inserted. Action must continue until all insertable control rods in core cells containing one or more fuel assemblies are fully inserted.

SURVEILLANCE REQUIREMENTS

As noted at the beginning of the SRs, the SRs for each RPS instrumentation Function are located in the SRs column of Table 3.3.1.1-1.

The Surveillances are modified by a Note to indicate that, when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours, provided the associated Function maintains RPS trip capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

entered and Required Actions taken. This Note is based on the RPS reliability analysis (Ref. 10) assumption of the average time required to perform channel surveillance. That analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that the RPS will trip when necessary.

SR 3.3.1.1.1

Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the instrument channels could be an indication of excessive instrument drift on one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limit.

The Frequency is based upon operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the channels required by the LCO.

SR 3.3.1.1.2

To ensure that the APRMs are accurately indicating the true core average power, the APRMs are calibrated to the reactor power calculated from a heat balance. The Frequency of once per 7 days is based on minor changes in LPRM sensitivity, which could affect the APRM reading between performances of SR 3.3.1.1.8.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.1.1.2 (continued)

An allowance is provided that requires the SR to be performed only at ≥ 25% RTP because it is difficult to accurately maintain APRM indication of core THERMAL POWER consistent with a heat balance when < 25% RTP. At low power levels, a high degree of accuracy is unnecessary because of the inherent margin to thermal limits (MCPR and APLHGR). At ≥ 25% RTP, the Surveillance is required to have been satisfactorily performed within the last 7 days in accordance with SR 3.0.2. A Note is provided which allows an increase in THERMAL POWER above 25% if the 7 day Frequency is not met per SR 3.0.2. In this event, the SR must be performed within 12 hours after reaching or exceeding 25% RTP. Twelve hours is based on operating experience and in consideration of providing a reasonable time in which to complete the SR.

SR 3.3.1.1.3

The Average Power Range Monitor Flow Biased Simulated Thermal Power — Upscale Function uses the recirculation loop drive flows to vary the trip setpoint. This SR ensures that the total loop drive flow signals from the flow unit used to vary the setpoint are appropriately compared to a calibrated flow signal and therefore the APRM Function accurately reflects the required setpoint as a function of flow. Each flow signal from the respective flow unit must be ≤ 100% of the calibrated flow signal. If the flow unit signal is not within the limit, one required APRM that receives an input from the inoperable flow unit must be declared inoperable.

The Frequency of 7 days is based on engineering judgment, operating experience, and the reliability of this instrumentation.

SR 3.3.1.1.4

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the channel will perform the intended function.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.1.1.4 (continued)

Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

As noted, SR 3.3.1.1.4 is not required to be performed when entering MODE 2 from MODE 1 since testing of the MODE 2 required IRM and APRM Functions cannot be performed in MODE 1 without utilizing jumpers, lifted leads, or movable links. This allows entry into MODE 2 if the 7 day Frequency is not met per SR 3.0.2. In this event, the SR must be performed within 24 hours after entering MODE 2 from MODE 1. Twenty-four hours is based on operating experience and in consideration of providing a reasonable time in which to complete the SR.

A Frequency of 7 days provides an acceptable level of system average unavailability over the Frequency interval and is based on reliability analysis (Ref. 10).

SR 3.3.1.1.5

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the channel will perform the intended Function. A Frequency of 7 days provides an acceptable level of system average availability over the Frequency and is based on the reliability analysis of Reference 10. (The Manual Scram Function's CHANNEL FUNCTIONAL TEST Frequency was credited in the analysis to extend many automatic scram Functions' Frequencies.)

SR 3.3.1.1.6 and SR 3.3.1.1.7

These Surveillances are established to ensure that no gaps in neutron flux indication exist from subcritical to power operation for monitoring core reactivity status.

The overlap between SRMs and IRMs is required to be demonstrated to ensure that reactor power will not be increased into a region without adequate neutron flux

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.1.1.6 and SR 3.3.1.1.7 (continued)

indication. This is required prior to fully withdrawing SRMs since indication is being transitioned from the SRMs to the IRMs.

The overlap between IRMs and APRMs is of concern when reducing power into the IRM range. On power increases, the system design will prevent further increases (initiate a rod block) if adequate overlap is not maintained. The IRM/APRM and SRM/IRM overlap are acceptable if a ½ decade overlap exists.

As noted, SR 3.3.1.1.7 is only required to be met during entry into MODE 2 from MODE 1. That is, after the overlap requirement has been met and indication has transitioned to the IRMs, maintaining overlap is not required (APRMs may be reading downscale once in MODE 2).

If overlap for a group of channels is not demonstrated (e.g., IRM/APRM overlap), the reason for the failure of the Surveillance should be determined and the appropriate channel(s) declared inoperable. Only those appropriate channel(s) that are required in the current MODE or condition should be declared inoperable.

A Frequency of 7 days is reasonable based on engineering judgment and the reliability of the IRMs and APRMs.

SR 3.3.1.1.8

LPRM gain settings are determined from the local flux profiles measured by the Traversing Incore Probe (TIP) System. This establishes the relative local flux profile for appropriate representative input to the APRM System. The 1000 effective full power hours (EFPH) Frequency is based on operating experience with LPRM sensitivity changes.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.1.1.9 and SR 3.3.1.1.12

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the channel will perform the intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

The 92 day Frequency of SR 3.3.1.1.9 is based on the reliability analysis of Reference 10.

The 24 month Frequency of SR 3.3.1.1.12 is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 24 month Frequency.

SR 3.3.1.1.10, SR 3.3.1.1.11, and SR 3.3.1.1.13

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

Note 1 of SR 3.3.1.1.11 and SR 3.3.1.1.13 states that neutron detectors are excluded from CHANNEL CALIBRATION because of the difficulty of simulating a meaningful signal. Changes in neutron detector sensitivity are compensated for by performing the 7 day calorimetric calibration (SR 3.3.1.1.2) and the 1000 EFPH LPRM calibration against the TIPs (SR 3.3.1.1.8). A second Note to SR 3.3.1.1.11 and SR 3.3.1.1.13 is provided that requires the APRM and IRM SRs to be performed within 24 hours of entering MODE 2 from MODE 1. Testing of the MODE 2 APRM and IRM Functions cannot be performed in MODE 1 without utilizing jumpers, lifted leads, or movable links. This Note allows entry into MODE 2 from MODE 1 if the associated Frequency is not met per SR 3.0.2.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.1.1.10, SR 3.3.1.1.11, and SR 3.3.1.1.13 (continued)

Twenty-four hours is based on operating experience and in consideration of providing a reasonable time in which to complete the SR. The Frequencies of SR 3.3.1.1.10 and SR 3.3.1.1.11 are based upon the assumption of a 92 day and 184 day calibration interval, respectively, in the determination of the magnitude of equipment drift in the setpoint analysis. The Frequency of SR 3.3.1.1.11 is based on the assumption of a 24 month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.1.1.14

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

The Frequency of 24 months is based on engineering judgment and reliability of the components.

SR 3.3.1.1.15

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

The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.1.1.15 (continued)

Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 24 month Frequency.

SR 3.3.1.1.16

This SR ensures that scrams initiated from the Turbine Stop Valve—Closure and Turbine Control Valve Fast Closure, Trip Oil Pressure—Low Functions will not be inadvertently bypassed when THERMAL POWER is ≥ 25% RTP. This involves calibration of the bypass channels. Adequate margins for the instrument setpoint methodology are incorporated into the Allowable Value and the actual setpoint. Because main turbine bypass flow can affect this setpoint nonconservatively (THERMAL POWER is derived from turbine first stage pressure), the main turbine bypass valves must remain closed during in-service calibration at THERMAL POWER ≥ 25% RTP, if performing the calibration using actual turbine first stage pressure, to ensure that the calibration is valid.

If any bypass channel setpoint is nonconservative (i.e., the Functions are bypassed at ≥ 25% RTP, either due to open main turbine bypass valve(s) or other reasons), then the affected Turbine Stop Valve—Closure and Turbine Control Valve Fast Closure, Trip Oil Pressure—Low Functions are considered inoperable. Alternatively, the bypass channel can be placed in the conservative condition (nonbypass). If placed in the nonbypass condition, this SR is met and the channel is considered OPERABLE.

The Frequency of 24 months is based on engineering judgment and reliability of the components.

SR 3.3.1.1.17

This SR ensures that the individual channel response times are less than or equal to the maximum values assumed in the accident analysis. The RPS RESPONSE TIME acceptance criteria are included in Reference 11.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.1.1.17 (continued)

As noted (Note 1), neutron detectors are excluded from RPS RESPONSE TIME testing. The principles of detector operation virtually ensure an instantaneous response time. In addition, Note 2 states the response time of the sensor for Functions 3 and 4 may be assumed to be the design sensor response time, and therefore, are excluded from RPS RESPONSE TIME testing. This is allowed since the sensor response time is a small part of the overall RPS RESPONSE TIME (Ref. 12). However, the response time for the remaining portion of the channel, including the trip unit and relay logic, is required to be performed. Note 4 states that the response time of the limit switches for Function 8 may be conservatively assumed and therefore, are excluded from the RPS RESPONSE TIME testing. This is allowed since the actual measurement of the limit switch response time is not practicable as this test is done during the refueling outage when the turbine stop valves are fully closed, and thus the limit switch in the RPS circuitry is open. The response time of the limit switch is conservatively assumed to be 10 ms. Note 5 modifies the starting point of the RPS RESPONSE TIME test for Function 9, since this starting point (start of turbine control valve fast closure) corresponds to safety analysis assumptions.

RPS RESPONSE TIME tests are conducted on a 24 month STAGGERED TEST BASIS. Note 3 requires STAGGERED TEST BASIS Frequency to be determined based on 4 channels per trip system, in lieu of the 8 channels specified in Table 3.3.1.1-1 for the MSIV Closure Function. This Frequency is based on the logic interrelationships of the various channels required to produce an RPS scram signal. Therefore, staggered testing results in response time verification of these devices every 24 months. The 24 month Frequency is consistent with the refueling cycle and is based upon plant operating experience, which shows that random failures of instrumentation components causing serious time degradation, but not channel failure, are infrequent.

(continued)

BASES (continued)

REFERENCES

1. UFSAR, Section 7.2.
2. UFSAR, Section 5.2.2.
3. UFSAR, Section 6.3.3.
4. UFSAR, Chapter 15.
5. UFSAR, Section 15.4.1.
6. NEDO-23842, "Continuous Control Rod Withdrawal in the Startup Range," April 18, 1978.
7. UFSAR, Section 7.6.3.3.
8. UFSAR, Section 15.4.9.
9. Letter, P. Check (NRC) to G. Lainas (NRC), "BWR Scram Discharge System Safety Evaluation," December 1, 1980.
10. NEDO-30851-P-A, "Technical Specification Improvement Analyses for BWR Reactor Protection System," March 1988.
11. Technical Requirements Manual.
12. NEDO-32291-A, "System Analyses for the Elimination of Selected Response Time Testing Requirements," October 1995.

B 3.3 INSTRUMENTATION

B 3.3.1.2 Source Range Monitor (SRM) Instrumentation

BASES

BACKGROUND

The SRMs provide the operator with information relative to the neutron level at very low flux levels in the core. As such, the SRM indication is used by the operator to monitor the approach to criticality and to determine when criticality is achieved. The SRMs are not fully withdrawn until the count rate is greater than a minimum allowed count rate (a control rod block is set at this condition). After SRM to intermediate range monitor (IRM) overlap is demonstrated (as required by SR 3.3.1.1.6), the SRMs are normally fully withdrawn from the core.

The SRM subsystem of the Neutron Monitoring System (NMS) consists of four channels. Each of the SRM channels can be bypassed, but only one at any given time, by the operation of a bypass switch. Each channel includes one detector that can be physically positioned in the core. Each detector assembly consists of a miniature fission chamber with associated cabling, signal conditioning equipment, and electronics associated with the various SRM functions. The signal conditioning equipment converts the current pulses from the fission chamber to analog DC currents that correspond to the count rate. Each channel also includes indication, alarm, and control rod blocks. However, this LCO specifies OPERABILITY requirements only for the monitoring and indication functions of the SRMs.

During refueling, shutdown, and low power operations, the primary indication of neutron flux levels is provided by the SRMs or special movable detectors connected to the normal SRM circuits. The SRMs provide monitoring of reactivity changes during fuel or control rod movement and give the control room operator early indication of unexpected subcritical multiplication that could be indicative of an approach to criticality.

APPLICABLE SAFETY ANALYSES

Prevention and mitigation of prompt reactivity excursions during refueling and low power operation are provided by LCO 3.9.1, "Refueling Equipment Interlocks"; LCO 3.1.1, "SHUTDOWN MARGIN (SDM)"; LCO 3.3.1.1, "Reactor Protection

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)	System (RPS) Instrumentation," Intermediate Range Monitor (IRM) Neutron Flux High and Average Power Range Monitor (APRM) Neutron Flux—High, Setdown Functions; and LCO 3.3.2.1, "Control Rod Block Instrumentation." The SRMs have no safety function and are not assumed to function during any UFSAR design basis accident or transient analysis. However, the SRMs provide the only on scale monitoring of neutron flux levels during startup and refueling. Therefore, they are being retained in the Technical Specifications.
LCO	During startup in MODE 2, three of the four SRM channels are required to be OPERABLE to monitor the reactor flux level prior to and during control rod withdrawal, to monitor subcritical multiplication and reactor criticality, and to monitor neutron flux level and reactor period until the flux level is sufficient to maintain the IRM on Range 3 or above. All channels but one are required in order to provide a representation of the overall core response during those periods when reactivity changes are occurring throughout the core. In MODES 3 and 4, with the reactor shut down, two SRM channels provide redundant monitoring of flux levels in the core. In MODE 5, during a spiral offload or reload, an SRM outside the fueled region will no longer be required to be OPERABLE, since it is not capable of monitoring normal changes in neutron flux in the fueled region of the core. Thus, CORE ALTERATIONS are allowed in a quadrant with no OPERABLE SRM in an adjacent quadrant, as provided in the Table 3.3.1.2-1, footnote (b), requirement that the bundles being spiral reloaded or spiral offloaded are all in a single fueled region containing at least one OPERABLE SRM is met. Spiral reloading and offloading encompass reloading or offloading a cell on the edges of a continuous fueled region (the cell can be reloaded or offloaded in any sequence). In nonspiral routine operations, two SRMs are required to be OPERABLE to provide redundant monitoring of reactivity changes occurring in the reactor core. Because of the local nature of reactivity changes during refueling, adequate

(continued)

BASES

LCO (continued)

coverage is provided by requiring one SRM to be OPERABLE in the quadrant of the reactor core where CORE ALTERATIONS are being performed and the other SRM to be OPERABLE in an adjacent quadrant containing fuel. These requirements ensure that the reactivity of the core will be continuously monitored during CORE ALTERATIONS.

Special movable detectors, according to Table 3.3.1.2-1, footnote (c), may be used in MODE 5 in place of the normal SRM nuclear detectors. These special detectors must be connected to the normal SRM circuits in the NMS such that the applicable neutron flux indication can be generated. These special detectors provide more flexibility in monitoring reactivity changes during fuel loading, since they can be positioned anywhere within the core during refueling. They must still meet the location requirements of SR 3.3.1.2.2, and all other required SRs for SRMs.

For an SRM channel to be considered OPERABLE, it must be providing neutron flux monitoring indication. In addition, in MODE 5, the required SRMs must be inserted to the normal operating level and be providing continuous visual indication in the control room.

APPLICABILITY

The SRMs are required to be OPERABLE in MODE 2 prior to the IRMs being on scale on Range 3, and MODES 3, 4, and 5, to provide for neutron monitoring. In MODE 1, the APRMs provide adequate monitoring of reactivity changes in the core; therefore, the SRMs are not required. In MODE 2, with IRMs on Range 3 or above, the IRMs provide adequate monitoring and the SRMs are not required.

ACTIONS

A.1 and B.1

In MODE 2, with the IRMs on Range 2 or below, SRMs provide the means of monitoring core reactivity and criticality. With any number of the required SRMs inoperable, the ability to monitor is degraded. Therefore, a limited time is allowed to restore the inoperable channels to OPERABLE status.

Providing that at least one SRM remains OPERABLE, Required Action A.1 allows 4 hours to restore the required SRMs to OPERABLE status. This is a reasonable time since there is

(continued)

ACTIONS

A.1 and B.1 (continued)

adequate capability remaining to monitor the core, limited risk of an event during this time, and sufficient time to take corrective actions to restore the required SRMs to OPERABLE status or to establish alternate IRM monitoring capability. During this time, control rod withdrawal and power increase are not precluded by this Required Action. Having the ability to monitor the core with at least one SRM, proceeding to IRM Range 3 or greater (with overlap required by SR 3.3.1.1.6) and thereby exiting the Applicability of this LCO, is acceptable for ensuring adequate core monitoring and allowing continued operation.

With three required SRMs inoperable, Required Action B.1 allows no positive changes in reactivity (control rod withdrawal must be immediately suspended) due to the inability to monitor the changes. Required Action A.1 still applies and allows 4 hours to restore monitoring capability prior to requiring control rod insertion. This allowance is based on the limited risk of an event during this time, provided that no control rod withdrawals are allowed, and the desire to concentrate efforts on repair, rather than to immediately shut down, with no SRMs OPERABLE.

C.1

In MODE 2 with the IRMs on Range 2 or below, if the required number of SRMs is not restored to OPERABLE status within the allowed Completion Time, the reactor shall be placed in MODE 3. With all control rods fully inserted, the core is in its least reactive state with the most margin to criticality. The allowed Completion Time of 12 hours is reasonable, based on operating experience, to reach MODE 3 in an orderly manner and without challenging plant systems.

D.1 and D.2

With one or more required SRM channels inoperable in MODE 3 or 4, the neutron flux monitoring capability is degraded or nonexistent. The requirement to fully insert all insertable control rods ensures that the reactor will be at its minimum reactivity level while no neutron monitoring capability is available. Placing the reactor mode switch in the shutdown

(continued)

BASES

ACTIONS

D.1 and D.2 (continued)

position prevents subsequent control rod withdrawal by maintaining a control rod block. The allowed Completion Time of 1 hour is sufficient to accomplish the Required Action, and takes into account the low probability of an event requiring the SRM occurring during this time.

E.1 and E.2

With one or more required SRMs inoperable in MODE 5, the capability to detect local reactivity changes in the core during refueling is degraded. CORE ALTERATIONS must be immediately suspended, and action must be immediately initiated to fully insert all insertable control rods in core cells containing one or more fuel assemblies. Suspending CORE ALTERATIONS prevents the two most probable causes of reactivity changes, fuel loading and control rod withdrawal, from occurring. Inserting all insertable control rods ensures that the reactor will be at its minimum reactivity, given that fuel is present in the core. Suspension of CORE ALTERATIONS shall not preclude completion of the movement of a component to a safe, conservative position.

Action (once required to be initiated) to insert control rods must continue until all insertable rods in core cells containing one or more fuel assemblies are inserted.

SURVEILLANCE REQUIREMENTS

As noted at the beginning of the SRs, the SRs for each SRM Applicable MODE or other specified condition are found in the SRs column of Table 3.3.1.2-1.

SR 3.3.1.2.1 and SR 3.3.1.2.3

Performance of the CHANNEL CHECK ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to the same parameter indicated on other similar channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations

(continued)

SURVEILLANCE REQUIREMENTS

SR 3.3.1.2.1 and SR 3.3.1.2.3 (continued)

between the instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff, based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limit.

The Frequency of once every 12 hours for SR 3.3.1.2.1 is based on operating experience that demonstrates channel failure is rare. While in MODES 3 and 4, reactivity changes are not expected; therefore, the 12 hour Frequency is relaxed to 24 hours for SR 3.3.1.2.3. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the channels required by the LCO.

SR 3.3.1.2.2

To provide adequate coverage of potential reactivity changes in the core, one SRM is required to be OPERABLE in the quadrant where CORE ALTERATIONS are being performed, and the other OPERABLE SRM must be in an adjacent quadrant containing fuel. Note 1 states that this SR is required to be met only during CORE ALTERATIONS. It is not required to be met at other times in MODE 5 since core reactivity changes are not occurring. This Surveillance consists of a review of plant logs to ensure that SRMs required to be OPERABLE for given CORE ALTERATIONS are, in fact, OPERABLE. In the event that only one SRM is required to be OPERABLE, per Table 3.3.1.2-1, footnote (b), only the a. portion of this SR is effectively required. Note 2 clarifies that more than one of the three requirements can be met by the same OPERABLE SRM. The 12 hour Frequency is based upon operating experience and supplements operational controls over refueling activities, which include steps to ensure that the SRMs required by the LCO are in the proper quadrant.

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.1.2.4

This Surveillance consists of a verification of the SRM instrument readout to ensure that the SRM reading is greater than a specified minimum count rate with the detector fully inserted. This ensures that the detectors are indicating count rates indicative of neutron flux levels within the core. With few fuel assemblies loaded, the SRMs will not have a high enough count rate to satisfy the SR. Therefore, allowances are made for loading sufficient "source" material, in the form of irradiated fuel assemblies, to establish the minimum count rate.

To accomplish this, the SR is modified by a Note that states that the count rate is not required to be met on an SRM that has less than or equal to four fuel assemblies adjacent to the SRM and no other fuel assemblies are in the associated core quadrant. With four or less fuel assemblies loaded around each SRM and no other fuel assemblies in the associated quadrant, even with a control rod withdrawn the configuration will not be critical. When movable detectors are being used, detector location must be selected such that each group of fuel assemblies is separated by at least two fuel cells from any other fuel assemblies.

The Frequency is based upon channel redundancy and other information available in the control room, and ensures that the required channels are frequently monitored while core reactivity changes are occurring. When no reactivity changes are in progress, the Frequency is relaxed from 12 hours to 24 hours.

SR 3.3.1.2.5 and SR 3.3.1.2.6

Performance of a CHANNEL FUNCTIONAL TEST demonstrates the associated channel will function properly. SR 3.3.1.2.5 is required in MODE 5, and the 7 day Frequency ensures that the channels are OPERABLE while core reactivity changes could be in progress. This 7 day Frequency is reasonable, based on operating experience and on other Surveillances (such as a CHANNEL CHECK) that ensure proper functioning between CHANNEL FUNCTIONAL TESTS.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.1.2.5 and SR 3.3.1.2.6 (continued)

SR 3.3.1.2.6 is required to be met in MODE 2 with IRMs on Range 2 or below and in MODES 3 and 4. Since core reactivity changes do not normally take place in MODES 3 and 4 and core reactivity changes are due only to control rod movement in MODE 2, the Frequency is extended from 7 days to 31 days. The 31 day Frequency is based on operating experience and on other Surveillances (such as CHANNEL CHECK) that ensure proper functioning between CHANNEL FUNCTIONAL TESTS.

Verification of the signal to noise ratio also ensures that the detectors are inserted to a normal operating level. In a fully withdrawn condition, the detectors are sufficiently removed from the fueled region of the core to essentially eliminate neutrons from reaching the detector. Any count rate obtained while fully withdrawn is assumed to be "noise" only.

With few fuel assemblies loaded, the SRMs will not have a high enough count rate to determine the signal to noise ratio. Therefore, allowances are made for loading sufficient "source" material, in the form of irradiated fuel assemblies, to establish the conditions necessary to determine the signal to noise ratio. To accomplish this, SR 3.3.1.2.5 is modified by a Note that states that the determination of signal to noise ratio is not required to be met on an SRM that has less than or equal to four fuel assemblies adjacent to the SRM and no other fuel assemblies are in the associated core quadrant. With four or less fuel assemblies loaded around each SRM and no other fuel assemblies in the associated quadrant, even with a control rod withdrawn the configuration will not be critical.

The Note to SR 3.3.1.2.6 allows the Surveillance to be delayed until entry into the specified condition of the Applicability. The SR must be performed in MODE 2 within 12 hours of entering MODE 2 with IRMs on Range 2 or below. The allowance to enter the Applicability with the 31 day Frequency not met is reasonable, based on the limited time of 12 hours allowed after entering the Applicability and the inability to perform the Surveillance while at higher power levels. Although the Surveillance could be performed while on IRM Range 3, the plant would not be expected to maintain

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.1.2.5 and SR 3.3.1.2.6 (continued)

steady state operation at this power level. In this event, the 12 hour Frequency is reasonable, based on the SRMs being otherwise verified to be OPERABLE (i.e., satisfactorily performing the CHANNEL CHECK) and the time required to perform the Surveillances.

SR 3.3.1.2.7

Performance of a CHANNEL CALIBRATION verifies the performance of the SRM detectors and associated circuitry. The Frequency considers the plant conditions required to perform the test, the ease of performing the test, and the likelihood of a change in the system or component status. The neutron detectors are excluded from the CHANNEL CALIBRATION (Note 1) because they cannot readily be adjusted. The detectors are fission chambers that are designed to have a relatively constant sensitivity over the range, and with an accuracy specified for a fixed useful life.

Note 2 to the Surveillance allows the Surveillance to be delayed until entry into the specified condition of the Applicability. The SR must be performed in MODE 2 within 12 hours of entering MODE 2 with IRMs on Range 2 or below. The allowance to enter the Applicability with the 24 month Frequency not met is reasonable, based on the limited time of 12 hours allowed after entering the Applicability and the inability to perform the Surveillance while at higher power levels. Although the Surveillance could be performed while on IRM Range 3, the plant would not be expected to maintain steady state operation at this power level. In this event, the 12 hour Frequency is reasonable, based on the SRMs being otherwise verified to be OPERABLE (i.e., satisfactorily performing the CHANNEL CHECK) and the time required to perform the Surveillances.

REFERENCES

None.

B 3.3 INSTRUMENTATION

B 3.3.2.1 Control Rod Block Instrumentation

BASES

BACKGROUND

Control rods provide the primary means for control of reactivity changes. Control rod block instrumentation includes channel sensors, logic circuitry, switches, and relays that are designed to ensure that specified fuel design limits are not exceeded for postulated transients and accidents. During high power operation, the rod block monitor (RBM) provides protection for control rod withdrawal error events. During low power operations, control rod blocks from the rod worth minimizer (RWM) enforce specific control rod sequences designed to mitigate the consequences of the control rod drop accident (CRDA). During shutdown conditions, control rod blocks from the Reactor Mode Switch—Shutdown Position Function ensure that all control rods remain inserted to prevent inadvertent criticalities.

The purpose of the RBM is to limit control rod withdrawal if localized neutron flux exceeds a predetermined setpoint during control rod manipulations (Ref. 1). It is assumed to function to block further control rod withdrawal to preclude a MCPR Safety Limit (SL) violation. The RBM supplies a trip signal to the Reactor Manual Control System (RMCS) to appropriately inhibit control rod withdrawal during power operation above the 30% RATED THERMAL POWER setpoint when a non peripheral control rod is selected. The RBM has two channels, either of which can initiate a control rod block when the channel output exceeds the control rod block setpoint. One RBM channel inputs into one RMCS rod block circuit and the other RBM channel inputs into the second RMCS rod block circuit. The RBM channel signal is generated by averaging a set of local power range monitor (LPRM) signals. One RBM channel averages the signals from LPRM detectors at the A and C positions in the assigned LPRM assemblies. The second RBM channel averages the signals from the LPRM detectors at the B and D positions. Assignment of LPRM assemblies to be used in RBM averaging is controlled by the selection of control rods. With no control rod selected, the RBM output is set to zero. However, when a control rod is selected, the gain of each

(continued)

BASES

BACKGROUND (continued)

RBM channel output is normalized to an assigned average power range monitor (APRM) channel. The assigned APRM channel is on the same RPS trip system as the RBM channel. The gain setting is held constant during the movement of that particular control rod to provide an indication of the change in the relative local power level. If the APRM used to normalize the RBM reading is indicating < 30% or a peripheral control rod is selected, the RBM is zeroed and the RBM is bypassed (Refs. 1 and 2).

If any LPRM detector assigned to an RBM is bypassed, the computed average signal is adjusted automatically to compensate for the number of LPRM signals. The minimum number of LPRM inputs required for each RBM channel to prevent an instrument inoperative alarm is four when using four LPRM assemblies, three when using three LPRM assemblies, and two when using two LPRM assemblies. If the normalizing APRM channel is bypassed, a second APRM channel automatically provides the normalizing signal (Refs. 1 and 2).

In addition, to preclude rod movement with an inoperable RBM, a downscale trip and an inoperable trip are provided.

The purpose of the RWM is to control rod patterns during startup and shutdown, such that only specified control rod sequences and relative positions are allowed over the operating range from all control rods inserted to 10% RTP. The sequences effectively limit the potential amount and rate of reactivity increase during a CRDA. Prescribed control rod sequences are stored in the RWM, which will initiate control rod withdrawal and insert blocks when the actual sequence deviates beyond allowances from the stored sequence. The RWM determines the actual sequence based on position indication for each control rod. The RWM also uses steam flow signals to determine when the reactor power is above the preset power level at which the RWM is automatically bypassed. The RWM is a single channel system that provides input into both RMCS rod block circuits (Refs. 2 and 3).

With the reactor mode switch in the shutdown position, a control rod withdrawal block is applied to all control rods to ensure that the shutdown condition is maintained. This Function prevents inadvertent criticality as the result of a

(continued)

BASES

BACKGROUND (continued)	control rod withdrawal during MODE 3 or 4, or during MODE 5 when the reactor mode switch is required to be in the shutdown position. The reactor mode switch has two channels, each inputting into a separate RMCS rod block circuit. Each reactor mode switch channel has contacts permitting control rod withdrawal in the reactor mode switch positions of run, startup, and refuel interlocked with other plant conditions. With the reactor mode switch in shutdown, the RMCS circuits do not receive a permissive for control rod withdrawal. A rod block in either RMCS circuit will provide a control rod block to all control rods.
APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	<u>1. Rod Block Monitor</u> The RBM is designed to prevent violation of the MCPR SL and the cladding 1% plastic strain fuel design limit that may result from a single control rod withdrawal error (RWE) event. The analytical methods and assumptions used in evaluating the RWE event are summarized in Reference 4. The cycle-specific analysis considers the continuous withdrawal of the maximum worth control rod at its maximum drive speed from the reactor, which is operating at rated power with a control rod pattern that results in the core being placed on thermal design limits. The condition is analyzed to ensure that the results obtained are conservative; the approach also serves to demonstrate the function of the RBM. The RBM Function satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii). Two channels of the RBM are required to be OPERABLE, with their setpoints within the appropriate Allowable Values in the CORE OPERATING LIMITS REPORT to ensure that no single instrument failure can preclude a rod block from this Function. The actual setpoints are calibrated consistent with applicable setpoint methodology. Nominal trip setpoints are specified in the setpoint calculations. The nominal setpoints are selected to ensure that the setpoints do not exceed the Allowable Values between successive CHANNEL CALIBRATIONS. Operation with a trip setpoint less conservative than the nominal trip

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

setpoint, but within its Allowable Value, is acceptable. Trip setpoints are those predetermined values of output at which an action should take place. The setpoints are compared to the actual process parameter (e.g., reactor power), and when the measured output value of the process parameter exceeds the setpoint, the associated device (e.g., trip unit) changes state. The analytic limits are derived from the limiting values of the process parameters obtained from the safety analysis. The trip setpoints are determined from the analytic limits, corrected for defined process, calibration, and instrument errors. The Allowable Values are then determined, based on the trip setpoint values, by accounting for the calibration based errors. These calibration based errors are limited to reference accuracy, instrument drift, errors associated with measurement and test equipment, and calibration tolerance of loop components. The trip setpoints and Allowable Values determined in this manner provide adequate protection because instrument uncertainties, process effects, calibration tolerances, instrument drift, and severe environment errors (for channels that must function in harsh environments as defined by 10 CFR 50.49) are accounted for and appropriately applied for the instrumentation.

The RBM is assumed to mitigate the consequences of an RWE event when operating ≥ 30% RTP and a non-peripheral control rod is selected. Below this power level or if a peripheral control rod is selected, the consequences of an RWE event will not exceed the MCPR SL and, therefore, the RBM is not required to be OPERABLE (Ref. 4).

2. Rod Worth Minimizer

The RWM enforces the analyzed rod position sequence to ensure that the initial conditions of the CRDA analysis are not violated. The analytical methods and assumptions used in evaluating the CRDA are summarized in References 5, 6, and 7. The analyzed rod position sequence requires that control rods be moved in groups, with all control rods assigned to a specific group required to be within specified banked positions. Requirements that the control rod sequence is in compliance with the analyzed rod position sequence are specified in LCO 3.1.6, "Rod Pattern Control."

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

2. Rod Worth Minimizer (continued)

The RWM Function satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

Since the RWM is a system designed to act as a backup to operator control of the rod sequences, only one channel of the RWM is available and required to be OPERABLE (Ref. 7). Special circumstances provided for in the Required Action of LCO 3.1.3, "Control Rod OPERABILITY," and LCO 3.1.6 may necessitate bypassing the RWM to allow continued operation with inoperable control rods, or to allow correction of a control rod pattern not in compliance with the analyzed rod position sequence. The RWM may be bypassed as required by these conditions, but then it must be considered inoperable and the Required Actions of this LCO followed.

Compliance with the analyzed rod position sequence, and therefore OPERABILITY of the RWM, is required in MODES 1 and 2 when THERMAL POWER is ≤ 10% RTP. When THERMAL POWER is > 10% RTP, there is no possible control rod configuration that results in a control rod worth that could exceed the 280 cal/gm fuel design limit during a CRDA (Refs. 6 and 7). In MODES 3 and 4, all control rods are required to be inserted into the core; therefore, a CRDA cannot occur. In MODE 5, since only a single control rod can be withdrawn from a core cell containing fuel assemblies, adequate SDM ensures that the consequences of a CRDA are acceptable, since the reactor will be subcritical.

3. Reactor Mode Switch — Shutdown Position

During MODES 3 and 4, and during MODE 5 when the reactor mode switch is in the shutdown position, the core is assumed to be subcritical; therefore, no positive reactivity insertion events are analyzed. The Reactor Mode Switch — Shutdown Position control rod withdrawal block ensures that the reactor remains subcritical by blocking control rod withdrawal, thereby preserving the assumptions of the safety analysis.

The Reactor Mode Switch — Shutdown Position Function satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

3. Reactor Mode Switch—Shutdown Position (continued)

Two channels are required to be OPERABLE to ensure that no single channel failure will preclude a rod block when required. There is no Allowable Value for this Function since the channels are mechanically actuated based solely on reactor mode switch position.

During shutdown conditions (MODES 3 and 4, and MODE 5 when the reactor mode switch is in the shutdown position), no positive reactivity insertion events are analyzed because assumptions are that control rod withdrawal blocks are provided to prevent criticality. Therefore, when the reactor mode switch is in the shutdown position, the control rod withdrawal block is required to be OPERABLE. During MODE 5 with the reactor mode switch in the refueling position, the refuel position one-rod-out interlock (LCO 3.9.2, "Refuel Position One-Rod-Out Interlock") provides the required control rod withdrawal blocks.

ACTIONS

A.1

With one RBM channel inoperable, the remaining OPERABLE channel is adequate to perform the control rod block function; however, overall reliability is reduced because a single failure in the remaining OPERABLE channel can result in no control rod block capability for the RBM. For this reason, Required Action A.1 requires restoration of the inoperable channel to OPERABLE status. The Completion Time of 24 hours is based on the low probability of an event occurring coincident with a failure in the remaining OPERABLE channel.

B.1

If Required Action A.1 is not met and the associated Completion Time has expired, the inoperable channel must be placed in trip within 1 hour. If both RBM channels are inoperable, the RBM is not capable of performing its intended function; thus, one channel must also be placed in trip. This initiates a control rod withdrawal block, thereby ensuring that the RBM function is met.

(continued)

BASES

ACTIONS

B.1 (continued)

The 1 hour Completion Time is intended to allow the operator time to evaluate and repair any discovered inoperabilities and is acceptable because it minimizes risk while allowing time for restoration or tripping of inoperable channels.

C.1, C.2.1.1, C.2.1.2, and C.2.2

With the RWM inoperable during a reactor startup, the operator is still capable of enforcing the prescribed control rod sequence. However, the overall reliability is reduced because a single operator error can result in violating the control rod sequence. Therefore, control rod movement must be immediately suspended except by scram. Alternatively, startup may continue if at least 12 control rods have already been withdrawn, or a reactor startup with an inoperable RWM during withdrawal of one or more of the first 12 control rods was not performed in the last calendar year (i.e., the current calendar year). These requirements minimize the number of reactor startups initiated with the RWM inoperable. Required Actions C.2.1.1 and C.2.1.2 require verification of these conditions by review of plant logs and control room indications. Once Required Action C.2.1.1 or C.2.1.2 is satisfactorily completed, control rod withdrawal may proceed in accordance with the restrictions imposed by Required Action C.2.2. Required Action C.2.2 allows for the RWM Function to be performed manually and requires a double check of compliance with the prescribed rod sequence by a second licensed operator (Reactor Operator or Senior Reactor Operator) or other task qualified member of the technical staff (e.g., shift technical advisor or reactor engineer).

The RWM may be bypassed under these conditions to allow continued operations. In addition, Required Actions of LCO 3.1.3 and LCO 3.1.6 may require bypassing the RWM, during which time the RWM must be considered inoperable with Condition C entered and its Required Actions taken.

(continued)

BASES

ACTIONS (continued)

D.1

With the RWM inoperable during a reactor shutdown, the operator is still capable of enforcing the prescribed control rod sequence. Required Action D.1 allows for the RWM Function to be performed manually and requires a double check of compliance with the prescribed rod sequence by a second licensed operator (Reactor Operator or Senior Reactor Operator) or other task qualified member of the technical staff (e.g., shift technical advisor or reactor engineer). The RWM may be bypassed under these conditions to allow the reactor shutdown to continue.

E.1 and E.2

With one Reactor Mode Switch—Shutdown Position control rod withdrawal block channel inoperable, the remaining OPERABLE channel is adequate to perform the control rod withdrawal block function. However, since the Required Actions are consistent with the normal action of an OPERABLE Reactor Mode Switch—Shutdown Position Function (i.e., maintaining all control rods inserted), there is no distinction between having one or two channels inoperable.

In both cases (one or both channels inoperable), suspending all control rod withdrawal and initiating action to fully insert all insertable control rods in core cells containing one or more fuel assemblies will ensure that the core is subcritical with adequate SDM ensured by LCO 3.1.1. Control rods in core cells containing no fuel assemblies do not affect the reactivity of the core and are therefore not required to be inserted. Action must continue until all insertable control rods in core cells containing one or more fuel assemblies are fully inserted.

SURVEILLANCE REQUIREMENTS

As noted at the beginning of the SRs, the SRs for each Control Rod Block instrumentation Function are found in the SRs column of Table 3.3.2.1-1.

The Surveillances are modified by a second Note to indicate that when an RBM channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

for up to 6 hours provided the associated Function maintains control rod block capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. This Note is based on the reliability analysis (Ref. 8) assumption of the average time required to perform channel Surveillance. That analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that a control rod block will be initiated when necessary.

SR 3.3.2.1.1

A CHANNEL FUNCTIONAL TEST is performed for each RBM channel to ensure that the entire channel will perform the intended function. It includes the Reactor Manual Control Multiplexing System input.

Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology. The Frequency of 92 days is based on reliability analyses (Ref. 9).

SR 3.3.2.1.2 and SR 3.3.2.1.3

A CHANNEL FUNCTIONAL TEST is performed for the RWM to ensure that the entire system will perform the intended function. The CHANNEL FUNCTIONAL TEST for the RWM is performed by attempting to withdraw a control rod not in compliance with the prescribed sequence and verifying a control rod block occurs and by verifying proper annunciation of the selection error of at least one out-of-sequence control rod. As noted in the SRs, SR 3.3.2.1.2 is not required to be performed until 1 hour after any control rod is withdrawn at ≤ 10% RTP in MODE 2 and SR 3.3.2.1.3 is not required to be performed until 1 hour after THERMAL POWER is ≤ 10% RTP in MODE 1. This allows entry into MODE 2 (and if entering during a shutdown concurrent with a power reduction to ≤ 10% RTP) for SR 3.3.2.1.2, and THERMAL POWER reduction to ≤ 10% RTP in MODE 1 for SR 3.3.2.1.3, to perform the required Surveillances if the 92 day Frequency is not met per

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.2.1.2 and SR 3.3.2.1.3 (continued)

SR 3.0.2. The 1 hour allowance is based on operating experience and in consideration of providing a reasonable time in which to complete the SRs. Operating experience has shown that these components usually pass the Surveillance when performed at the 92 day Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 3.3.2.1.4

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

As noted, neutron detectors are excluded from the CHANNEL CALIBRATION because they are passive devices, with minimal drift, and because of the difficulty of simulating a meaningful signal. Neutron detectors are adequately tested in SR 3.3.1.1.2 and SR 3.3.1.1.8.

The Frequency is based upon the assumption of a 92 day calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.2.1.5

The RBM is automatically bypassed when power is below a specified value or if a peripheral control rod is selected. The power level is determined from the APRM signals input to each RBM channel. The automatic bypass setpoint must be verified periodically to be < 30% RTP. In addition, it must also be verified that the RBM is not bypassed when a control rod that is not a peripheral control rod is selected (only one non-peripheral control rod is required to be verified). If any bypass setpoint is nonconservative, then the affected RBM channel is considered inoperable. Alternatively, the APRM channel can be placed in the conservative condition to

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.2.1.5 (continued)

enable the RBM. If placed in this condition, the SR is met and the RBM channel is not considered inoperable. As noted, neutron detectors are excluded from the Surveillance because they are passive devices, with minimal drift, and because of the difficulty of simulating a meaningful signal. Neutron detectors are adequately tested in SR 3.3.1.1.2 and SR 3.3.1.1.8. The 24 month Frequency is based on the actual trip setpoint methodology utilized for these channels.

SR 3.3.2.1.6

The RWM is automatically bypassed when power is above a specified value. The power level is determined from steam flow signal. The automatic bypass setpoint must be verified periodically to be > 10% RTP. If the RWM low power setpoint is nonconservative, then the RWM is considered inoperable. Alternately, the low power setpoint channel can be placed in the conservative condition (nonbypass). If placed in the nonbypassed condition, the SR is met and the RWM is not considered inoperable. The Frequency is based on the trip setpoint methodology utilized for the low power setpoint channel.

SR 3.3.2.1.7

A CHANNEL FUNCTIONAL TEST is performed for the Reactor Mode Switch — Shutdown Position Function to ensure that the entire channel will perform the intended function. The CHANNEL FUNCTIONAL TEST for the Reactor Mode Switch — Shutdown Position Function is performed by attempting to withdraw any control rod with the reactor mode switch in the shutdown position and verifying a control rod block occurs.

As noted in the SR, the Surveillance is not required to be performed until 1 hour after the reactor mode switch is in the shutdown position, since testing of this interlock with the reactor mode switch in any other position cannot be performed without using jumpers, lifted leads, or movable links. This allows entry into MODES 3 and 4 if the 24 month Frequency is not met per SR 3.0.2. The 1 hour allowance is based on operating experience and in consideration of providing a reasonable time in which to complete the SRs.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.2.1.7 (continued)

The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 24 month Frequency.

SR 3.3.2.1.8

The RWM will only enforce the proper control rod sequence if the rod sequence is properly input into the RWM computer. This SR ensures that the proper sequence is loaded into the RWM so that it can perform its intended function. The Surveillance is performed once prior to declaring RWM OPERABLE following loading of sequence into RWM, since this is when rod sequence input errors are possible.

SR 3.3.2.1.9

LCO 3.1.3 and LCO 3.1.6 may require individual control rods to be bypassed in the RWM to allow insertion of an inoperable control or correction of a control rod pattern not in compliance with the analyzed rod position sequence. With the control rods bypassed in the RWM, the RWM will not control the movement of these bypassed control rods. To ensure the proper bypassing and movement of those affected control rods, a second licensed operator (Reactor Operator or Senior Reactor Operator) or other task qualified member of the technical staff (e.g., shift technical advisor or reactor engineer) must verify the bypassing and position of these control rods. Compliance with this SR allows the RWM to be OPERABLE with these control rods bypassed.

REFERENCES

1. UFSAR, Section 7.7.6.3.
2. UFSAR, Section 7.7.2.2.3.
3. UFSAR, Section 7.7.7.2.3.

(continued)

BASES

REFERENCES (continued)

4. UFSAR, Section 15.4.2.3.

5. UFSAR, Section 15.4.9.

6. "Modifications to the Requirements for Control Rod Drop Accident Mitigating Systems," BWR Owners' Group, July 1986.

7. NRC SER, "Acceptance of Referencing of Licensing Topical Report NEDE-24011-P-A," "General Electric Standard Application for Reactor Fuel, Revision 8, Amendment 17," December 27, 1987.

8. GENE-770-06-1-A, "Addendum to Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications," December 1992.

9. NEDC-30851-P-A, "Technical Specification Improvement Analysis for BWR Control Rod Block Instrumentation," October 1988.

B 3.3 INSTRUMENTATION

B 3.3.2.2 Feedwater System and Main Turbine High Water Level Trip Instrumentation

BASES

BACKGROUND

The Feedwater System and Main Turbine High Water Level Trip Instrumentation is designed to detect a potential failure of the Feedwater Level Control System that causes excessive feedwater flow.

With excessive feedwater flow, the water level in the reactor vessel rises toward the high water level, Level 8 reference point, causing the trip of the two feedwater pump turbines, the motor-driven feedwater pump and the main turbine.

Reactor Vessel Water Level—High, Level 8 signals are provided by differential pressure transmitters that sense the difference between the pressure due to a constant column of water (reference leg) and the pressure due to the actual water level in the reactor vessel (variable leg). Four channels of Reactor Vessel Water Level—High, Level 8 instrumentation are provided as input to the initiation logic that trips the two feedwater pump turbines, the motor-driven feedwater pump and the main turbine. Trip channels A and B each receive an input from Reactor Vessel Water Level—High, Level 8 channels and trip channel C receives an input from two Reactor Vessel Water Level—High, Level 8 channels. Trip channel C has one instrument that shares the same narrow range variable leg with trip channel A, and a second instrument that shares the narrow range variable leg with the instrument of trip channel B. Each of the trip channels will trip if any Reactor Vessel Water Level—High, Level 8 channel trips. Each of the three trip channel outputs are provided as inputs to the individual trip logics associated with each feedwater pump turbine, the motor-driven feedwater pump, and the main turbine. The trip channel inputs are arranged in a two-out-of-three logic for each initiation logic. The channels include electronic equipment (e.g., trip units) that compares measured input signals with pre- established setpoints. When the setpoint is exceeded, the channel output relay actuates, which then outputs a feedwater system and main turbine trip signal to the trip logic.

(continued)

BASES

BACKGROUND (continued)	A trip of the feedwater pump turbines and the motor-driven feedwater pump limits further increase in reactor vessel water level by limiting further addition of feedwater to the reactor vessel. A trip of the main turbine and closure of the stop valves protects the turbine from damage due to water entering the turbine.
APPLICABLE SAFETY ANALYSES	The Feedwater System and Main Turbine High Water Level Trip Instrumentation is assumed to be capable of providing a trip of the feedwater turbines, the motor-driven feedwater pump, and the main turbine in the design basis transient analysis for a feedwater controller failure, maximum demand event (Ref. 1). The Level 8 trip indirectly initiates a reactor scram from the main turbine trip (above 25% RTP) and trips the feedwater pumps, thereby terminating the event. The reactor scram mitigates the reduction in MCPR. Feedwater System and Main Turbine High Water Level Trip Instrumentation satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).
LCO	The LCO requires four channels (combined into three trip channels) of the Reactor Vessel Water Level — High, Level 8 instrumentation to be OPERABLE to ensure that no single instrument failure or variable leg failure will prevent the feedwater pump turbines, the motor-driven feedwater pump, and main turbine to trip on a valid Level 8 signal. Two of the three trip channels are needed to provide trip signals in order for the feedwater and main turbine and motor-driven feedwater pump trips to occur. Each channel must have its setpoint set within the specified Allowable Value of SR 3.3.2.2.3. The Allowable Value is set to ensure that the thermal limits are not exceeded during the event. The actual setpoint is calibrated to be consistent with the applicable setpoint methodology assumptions. Nominal trip setpoints are specified in the setpoint calculations. The nominal setpoints are selected to ensure that the setpoints do not exceed the Allowable Value between successive CHANNEL CALIBRATIONS. Operation with a trip setpoint less conservative than the nominal trip setpoint, but within its Allowable Value, is acceptable. A channel is inoperable if its actual trip setpoint is not within its required Allowable Value.

(continued)

BASES

LCO (continued)

Trip setpoints are those predetermined values of output at which an action should take place. The setpoints are compared to the actual process parameter (e.g., reactor vessel water level), and when the measured output value of the process parameter exceeds the setpoint, the associated device (e.g., trip unit) changes state. The analytic limits are derived from the limiting values of the process parameters obtained from the safety analysis. The trip setpoints are determined from the analytic limits, corrected for defined process, calibration, and instrument errors. The Allowable Values are then determined, based on the trip setpoint values, by accounting for the calibration based errors. These calibration based errors are limited to reference accuracy, instrument drift, errors associated with measurement and test equipment, and calibration tolerance of loop components. The trip setpoints and Allowable Values determined in this manner provide adequate protection because instrument uncertainties, process effects, calibration tolerances, instrument drift, and severe environment errors (for channels that must function in harsh environments as defined by 10 CFR 50.49) are accounted for and appropriately applied for the instrumentation.

APPLICABILITY

The Feedwater System and Main Turbine High Water Level Trip Instrumentation is required to be OPERABLE at ≥ 25% RTP to ensure that the fuel cladding integrity Safety Limit and the cladding 1% plastic strain limit are not violated during the feedwater controller failure, maximum demand event. As discussed in the Bases for LCO 3.2.1, "AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)," LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," and LCO 3.2.3, "LINEAR HEAT GENERATION RATE," sufficient margin to these limits exists below 25% RTP; therefore, these requirements are only necessary when operating at or above this power level.

ACTIONS

A Note has been provided to modify the ACTIONS related to Feedwater System and Main Turbine High Water Level Trip Instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions

(continued)

BASES

ACTIONS (continued)

of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable Feedwater System and Main Turbine High Water Level Trip Instrumentation channels provide appropriate compensatory measures for separate inoperable channels. As such, a Note has been provided that allows separate Condition entry for each inoperable Feedwater System and Main Turbine High Water Level Trip Instrumentation channel.

A.1

With one or more channels inoperable and trip capability maintained, the remaining OPERABLE channels can provide the required trip signal. However, overall instrumentation reliability is reduced because a single failure in one of the remaining channels concurrent with feedwater controller failure, maximum demand event, or a variable leg failure may result in the instrumentation not being able to perform its intended function. Therefore, continued operation is only allowed for a limited time. If the inoperable channel cannot be restored to OPERABLE status within the Completion Time, the channel must be placed in the tripped condition per Required Action A.1. Placing the inoperable channel in trip would conservatively compensate for the inoperability, restore capability to accommodate a single failure, and allow operation to continue with no further restrictions. Alternately, if it is not desired to place the channel in trip (e.g., as in the case where placing the inoperable channel in trip would result in a feedwater turbine, motor-driven feedwater pump, or main turbine trip), Condition C must be entered and its Required Action taken.

The Completion Time of 7 days is based on the low probability of the event occurring coincident with a single failure in a remaining OPERABLE channel.

B.1

With the feedwater system and main turbine high water level trip capability not maintained, the feedwater system and main turbine high water level trip instrumentation cannot perform its design function. Therefore, continued operation

(continued)

BASES

ACTIONS

B.1 (continued)

is only permitted for a 2 hour period, during which feedwater system and main turbine high water level trip capability must be restored. The trip capability is considered maintained when sufficient channels are OPERABLE or in trip such that the feedwater system and main turbine high water level trip logic will generate a trip signal on a valid signal. This requires two of the three trip channels to have one feedwater system and main turbine high water level channel OPERABLE or in trip. If the required channels cannot be restored to OPERABLE status or placed in trip, Condition C must be entered and its Required Action taken.

The 2 hour Completion Time is sufficient for the operator to take corrective action, and takes into account the likelihood of an event requiring actuation of Feedwater System and Main Turbine High Water Level Trip Instrumentation occurring during this period. It is also consistent with the 2 hour Completion Time provided in LCO 3.2.2 for Required Action A.1, since this instrumentation's purpose is to preclude a MCPR violation.

C.1 and C.2

With the channel(s) not restored to OPERABLE status or placed in trip, THERMAL POWER must be reduced to < 25% RTP within 4 hours. As discussed in the Applicability section of the Bases, operation below 25% RTP results in sufficient margin to the required limits, and the Feedwater System and Main Turbine High Water Level Trip Instrumentation is not required to protect fuel integrity during the feedwater controller failure, maximum demand event. Alternatively, if a channel is inoperable solely due to an inoperable motor-driven feedwater pump breaker or feedwater stop valve, the affected feedwater pump(s) may be removed from service since this performs the intended function of the instrumentation. The allowed Completion Time of 4 hours is based on operating experience to reduce THERMAL POWER to < 25% RTP from full power conditions in an orderly manner and without challenging plant systems.

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the Function maintains feedwater system and main turbine high water level trip capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. This Note is based on the reliability analysis (Ref. 2) assumption that 6 hours is the average time required to perform channel Surveillance. That analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that the feedwater pump turbines, motor-driven feedwater pump, and main turbine will trip when necessary.

SR 3.3.2.2.1

Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between instrument channels could be an indication of excessive instrument drift in one of the channels, or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limits.

The Frequency is based on operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channel status during normal operational use of the displays associated with the channels required by the LCO.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.2.2.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the channel will perform the intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

The Frequency of 92 days is based on reliability analysis (Ref. 2).

SR 3.3.2.2.3

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

The Frequency is based upon the assumption of a 24 month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.2.2.4

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required trip logic for a specific channel. The system functional test of the feedwater and main turbine stop valves and the motor-driven feedwater pump breaker is included as part of this Surveillance and overlaps the LOGIC SYSTEM FUNCTIONAL TEST to provide complete testing of the assumed safety function. Therefore, if a turbine stop valve or motor feedwater pump breaker is incapable of operating, the associated instrumentation would also be inoperable. The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 24 month Frequency.

(continued)

BASES (continued)

REFERENCES

1. UFSAR, Section 15.1.2A.

2. GENE-770-06-1-A, "Bases for Changes to Surveillance Test Intervals and Allowed Out-Of-Service Times for Selected Instrumentation Technical Specifications," December 1992.

B 3.3 INSTRUMENTATION

B 3.3.3.1 Post Accident Monitoring (PAM) Instrumentation

BASES

BACKGROUND

The primary purpose of the PAM instrumentation is to display, in the control room, plant variables that provide information required by the control room operators during accident situations. This information provides the necessary support for the operator to take the manual actions for which no automatic control is provided and that are required for safety systems to accomplish their safety functions for Design Basis Events. The instruments that monitor these variables are designated as Type A, Category I, and non-Type A, Category I in accordance with Regulatory Guide 1.97 (Ref. 1).

The OPERABILITY of the accident monitoring instrumentation ensures that there is sufficient information available on selected plant parameters to monitor and assess plant status and behavior following an accident. This capability is consistent with the recommendations of Reference 1.

APPLICABLE SAFETY ANALYSES

The PAM instrumentation LCO ensures the OPERABILITY of Regulatory Guide 1.97, Type A, variables so that the control room operating staff can:

- Perform the diagnosis specified in the Emergency Operating Procedures (EOP). These variables are restricted to preplanned actions for the primary success path of Design Basis Accidents (DBAs) (e.g., loss of coolant accident (LOCA)); and
- Take the specified, preplanned, manually controlled actions for which no automatic control is provided, which are required for safety systems to accomplish their safety function.

The PAM instrumentation LCO also ensures OPERABILITY of Category I, non-Type A, variables. This ensures the control room operating staff can:

- Determine whether systems important to safety are performing their intended functions;

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

- Determine the potential for causing a gross breach of the barriers to radioactivity release;
- Determine whether a gross breach of a barrier has occurred; and
- Initiate action necessary to protect the public and to obtain an estimate of the magnitude of any impending threat.

The plant specific Regulatory Guide 1.97 analysis (Ref. 2) documents the process that identified Type A and Category I, non-Type A, variables.

PAM instrumentation that meets the definition of Type A in Regulatory Guide 1.97 satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii). Category I, non-Type A, instrumentation is retained in the Technical Specifications (TS) because it is intended to assist operators in minimizing the consequences of accidents. Therefore, these Category I, non-Type A, variables are important for reducing public risk.

LCO

LCO 3.3.3.1 requires two OPERABLE channels for all but one Function to ensure no single failure prevents the operators from being presented with the information necessary to determine the status of the unit and to bring the unit to, and maintain it in, a safe condition following an accident. Furthermore, providing two channels allows a CHANNEL CHECK during the post accident phase to confirm the validity of displayed information.

The exception of the two channel requirement is primary containment isolation valve (PCIV) position. In this case, the important information is the status of the primary containment penetrations. The LCO requires one position indicator for each active (e.g., automatic) PCIV. This is sufficient to redundantly verify the isolation status of each isolable penetration either via indicated status of the active valve and prior knowledge of passive valve or via system boundary status. If a normally active PCIV is known to be closed and deactivated, position indication is not needed to determine status. Therefore, the position indication for closed and deactivated valves is not required to be OPERABLE.

(continued)

BASES

LCO (continued)

Listed below is a discussion of the specified instrument Functions listed in Table 3.3.3.1-1.

1. Reactor Steam Dome Pressure

Reactor steam dome pressure is a Type A and Category I variable provided to support monitoring of Reactor Coolant System (RCS) integrity and to verify operation of the Emergency Core Cooling Systems (ECCS). Two independent pressure transmitters with a range of 0 psig to 1500 psig monitor pressure. Wide range recorders are the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with this portion of the instrument channel.

2. Reactor Vessel Water Level

Reactor vessel water level is a Category I variable provided to support monitoring of core cooling and to verify operation of the ECCS. The wide range and fuel zone range water level channels provide the PAM Reactor Vessel Water Level Function. The range of the recorded/indicated level is from the top of the feedwater control range (just above the high level turbine trip point) down to a point just below the bottom of the active fuel. Reactor vessel water level is measured by six independent differential pressure transmitters (i.e., four wide range channels and two fuel zone range channels). These channels provide output to recorders and indicators. Each division of the required reactor vessel water level channels must include a recorder. These instruments are the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with this portion of the instrument channel.

The reactor vessel water level instruments are uncompensated for variation in reactor water density and are calibrated to be most accurate at a specific vessel pressure and temperature. The wide range instruments are calibrated at 1000 psig reactor pressure with appropriate temperature compensation and no jet pump flow. The fuel zone range instruments are calibrated at saturated conditions at 0 psig with no jet pump flow.

(continued)

BASES

LCO (continued)

3. Suppression Pool Water Level

Suppression pool water level is a Type A and Category I variable provided to detect a breach in the reactor coolant pressure boundary (RCPB). This variable is also used to verify and provide long term surveillance of ECCS function. The wide range suppression pool water level measurement provides the operator with sufficient information to assess the status of the RCPB and to assess the status of the water supply to the ECCS. The wide range water level indicators monitor the suppression pool level from 14 feet above normal level down to the lowest ECCS suction point. Two wide range suppression pool water level signals are transmitted from separate transmitters and are continuously displayed on two control room indicators, and separately recorded on two recorders in the control room. These instruments are the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with this portion of the instrument channel.

4. Drywell Pressure

Drywell pressure is a Type A and Category I variable provided to detect a breach of the RCPB and to verify ECCS functions that operate to maintain RCS integrity. There are four drywell pressure monitoring channels, two wide range channels and two narrow range channels. The combined range of these instruments is from -5 to 200 psig. The signals from the drywell pressure monitoring channels are continuously recorded and displayed on two control room recorders and the wide range channels are also displayed on indicators. These instruments are the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with this portion of the instrument channel.

5. Primary Containment Gross Gamma Radiation

Primary containment gross gamma radiation is a Category 1 variable provided to monitor for the potential of significant radiation releases and to provide release assessment for use by operators in determining the need to invoke site emergency plans.

(continued)

BASES

LCO

5. Primary Containment Gross Gamma Radiation (continued)

Two redundant radiation detectors are located inside the drywell that have a range of 10^0 R/hr to 10^8 R/hr. These radiation monitors display on recorders located in the control room. Two radiation monitors/recorders are required to be OPERABLE (one per division). Therefore, the PAM Specification deals specifically with this portion of the instrument channel.

6. Penetration Flow Path Primary Containment Isolation Valve (PCIV) Position

PCIV (excluding check valves, relief valves, manual valves, CRD solenoid valves, vacuum breakers, and excess flow check valves) position is a Category I variable provided for verification of containment integrity. In the case of PCIV position, the important information is the isolation status of the containment penetration. The LCO requires one channel of valve position indication in the control room to be OPERABLE for each active PCIV in a containment penetration flow path requiring post-accident valve position indication, i.e., two total channels of PCIV position indication for a penetration flow path with two active valves requiring post-accident valve position indication. For containment penetrations with only one active PCIV having control room indication, Note (b) requires a single channel of valve position indication to be OPERABLE. This is sufficient to verify redundantly the isolation status of each isolable penetration via indicated status of the active valve, as applicable, and prior knowledge of passive valve or system boundary status. If a penetration is isolated, position indication for the PCIV(s) in the associated penetration flow path is not needed to determine status. Therefore, the position indication for valves in an isolated penetration is not required to be OPERABLE. Each penetration is treated separately and each penetration flow path is considered a separate function. Therefore, separate Condition entry is allowed for each inoperable penetration flow path.

(continued)

LCO

6. Penetration Flow Path Primary Containment Isolation Valve (PCIV) Position (continued)

The indication for each PCIV is provided in the control room. Indicator lights illuminate to indicate PCIV position. Therefore, the PAM Specification deals specifically with this portion of the instrumentation channel.

7, 8. Drywell Hydrogen and Oxygen Concentration Analyzer

Drywell hydrogen and oxygen concentration analyzers are Category I instruments provided to detect high hydrogen or oxygen concentration conditions that represent a potential for containment breach. Additionally, hydrogen concentration is a Type A variable. This variable is also important in verifying the adequacy of mitigating actions.

High hydrogen and oxygen concentrations are each measured by two independent analyzers. Following receipt of a LOCA signal, the analyzers are initiated and continuously record hydrogen and oxygen concentration on two recorders in the control room. The analyzers are designed to operate under accident conditions. The available 0% to 10% range for the hydrogen analyzers and 0% to 20% range for the oxygen analyzers satisfy the intent of Regulatory Guide 1.97. These recorders are the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with this portion of the instrument channel.

9. Suppression Pool Water Temperature

Suppression pool water temperature is a Type A and Category I variable provided to detect a condition that could potentially lead to containment breach, and to verify the effectiveness of ECCS actions taken to prevent containment breach. The suppression pool water temperature instrumentation allows operators to detect trends in suppression pool water temperature in sufficient time to take action to prevent steam quenching vibrations in the suppression pool. There are 14 total thermocouple instrument wells in the suppression pool. Each thermocouple

(continued)

BASES

LCO

9. Suppression Pool Water Temperature (continued)

well has two thermocouples. Each channel receives input from the thermocouples in 7 wells for a total of 14 thermocouples. A channel is considered OPERABLE if it receives input from at least one OPERABLE thermocouple from each of the 7 wells. The thermocouples are distributed throughout the pool area so as to be able to redundantly detect a stuck open safety/relief valve continuous discharge into the pool.

The output for each channel of sensors is recorded on an independent recorder in the control room. These recorders are the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with this portion of the instrument channels.

APPLICABILITY

The PAM instrumentation LCO is applicable in MODES 1 and 2. These variables are related to the diagnosis and preplanned actions required to mitigate DBAs. The applicable DBAs are assumed to occur in MODES 1 and 2. In MODES 3, 4, and 5, plant conditions are such that the likelihood of an event that would require PAM instrumentation is extremely low; therefore, PAM instrumentation is not required to be OPERABLE in these MODES.

ACTIONS

Note 1 has been added to the ACTIONS to exclude the MODE change restriction of LCO 3.0.4. This exception allows entry into the applicable MODE while relying on the ACTIONS even though the ACTIONS may eventually require plant shutdown. This exception is acceptable due to the passive function of the instruments, the operator's ability to diagnose an accident using alternate instruments and methods, and the low probability of an event requiring these instruments.

A Note has also been provided to modify the ACTIONS related to PAM instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required

(continued)

BASES

ACTIONS (continued)

Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable PAM instrumentation channels provide appropriate compensatory measures for separate inoperable functions. As such, a Note has been provided that allows separate Condition entry for each inoperable PAM Function.

A.1

When one or more Functions have one required channel that is inoperable, the required inoperable channel must be restored to OPERABLE status within 30 days. The 30 day Completion Time is based on operating experience and takes into account the remaining OPERABLE channel or remaining isolation barrier (in the case of primary containment penetrations with only one PCIV), the passive nature of the instrument (no critical automatic action is assumed to occur from these instruments), and the low probability of an event requiring PAM instrumentation during this interval.

B.1

If a channel has not been restored to OPERABLE status in 30 days, this Required Action specifies initiation of actions in accordance with Specification 5.6.6, which requires a written report to be submitted to the NRC. This report discusses the results of the root cause evaluation of the inoperability and identifies proposed restorative actions. This Required Action is appropriate in lieu of a shutdown requirement since another OPERABLE channel is monitoring the Function, an alternative method of monitoring is available and given the likelihood of plant conditions that would require information provided by this instrumentation.

C.1

When one or more Functions have two required channels that are inoperable (i.e., two channels inoperable in the same Function), one channel in the Function should be restored to OPERABLE status within 7 days. The Completion Time of

(continued)

BASES

ACTIONS

C.1 (continued)

7 days is based on the relatively low probability of an event requiring PAM instrument operation and the availability of alternate means to obtain the required information. Continuous operation with two required channels inoperable in a Function is not acceptable because the alternate indications may not fully meet all performance qualification requirements applied to the PAM instrumentation. Therefore, requiring restoration of one inoperable channel of the Function limits the risk that the PAM Function will be in a degraded condition should an accident occur.

D.1

This Required Action directs entry into the appropriate Condition referenced in Table 3.3.3.1-1. The applicable Condition referenced in the Table is Function dependent. Each time an inoperable channel has not met the Required Action of Condition C, and the associated Completion Time has expired, Condition D is entered for that channel and provides for transfer to the appropriate subsequent Condition.

E.1

For the majority of Functions in Table 3.3.3.1-1, if the Required Action and associated Completion Time of Condition C is not met, the plant must be placed in a MODE in which the LCO does not apply. This is done by placing the plant in at least MODE 3 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant condition from full power conditions in an orderly manner and without challenging plant systems.

F.1

Since alternate means of monitoring primary containment gross gamma radiation have been developed and tested, the Required Action is not to shut down the plant but rather to follow the directions of Specification 5.6.6. These

(continued)

BASES

ACTIONS

F.1 (continued)

alternate means may be temporarily installed if the normal PAM channel cannot be restored to OPERABLE status within the allotted time. The report provided to the NRC should discuss the alternate means used, describe the degree to which the alternate means are equivalent to the installed PAM channels, justify the areas in which they are not equivalent, and provide a schedule for restoring the normal PAM channels.

SURVEILLANCE REQUIREMENTS

As noted at the beginning of the SRs, the following SRs apply to each PAM instrumentation Function in Table 3.3.3.1-1.

The Surveillances are modified by a second Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours, provided the other required channel in the associated Function is OPERABLE. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. The 6 hour testing allowance is acceptable since it does not significantly reduce the probability of properly monitoring post-accident parameters, when necessary.

SR 3.3.3.1.1

Performance of the CHANNEL CHECK once every 31 days ensures that a gross instrumentation failure has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between instrument channels could be an indication of excessive instrument drift in one of the channels or of something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.3.1.1 (continued)

Agreement criteria are determined by the plant staff based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the sensor or the signal processing equipment has drifted outside its limit.

The Frequency of 31 days is based upon plant operating experience with regard to channel OPERABILITY and drift, which demonstrates that failure of more than one channel of a given function in any 31 day interval is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of those displays associated with the channels required by the LCO.

SR 3.3.3.1.2 and SR 3.3.3.1.3

A CHANNEL CALIBRATION is performed every 92 days for Functions 7 and 8 and every 24 months for all other functions. For Function 6, the CHANNEL CALIBRATION shall consist of verifying that the position indication conforms to the actual valve position. CHANNEL CALIBRATION is a complete check of the instrument loop including the sensor. The test verifies that the channel responds to the measured parameter with the necessary range and accuracy. The 92 day Frequency for CHANNEL CALIBRATION of Functions 7 and 8 is based on operating experience. The 24 month Frequency for CHANNEL CALIBRATION of all other PAM Instrumentation of Table 3.3.3.1-1 is based on operating experience and consistency with the refueling cycles.

REFERENCES

1. Regulatory Guide 1.97, "Instrumentation for Light-Water Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident," Revision 2, December 1980.

2. NRC Safety Evaluation Report, "Commonwealth Edison Company, LaSalle County Station, Unit Nos. 1 and 2, Conformance to Regulatory Guide 1.97," dated August 20, 1987.

B 3.3 INSTRUMENTATION

B 3.3.3.2 Remote Shutdown Monitoring System

BASES

BACKGROUND

The Remote Shutdown Monitoring System provides the control room operator with sufficient instrumentation to support maintaining the plant in a safe shutdown condition from a location other than the control room. This capability is necessary to protect against the possibility of the control room becoming inaccessible. A safe shutdown condition is defined as MODE 3. With the plant in MODE 3, the Reactor Core Isolation Cooling (RCIC) System, the safety/relief valves, and the Residual Heat Removal (RHR) System can be used to remove core decay heat and meet all safety requirements. The long term supply of water for the RCIC System and the ability to operate shutdown cooling from outside the control room allow extended operation in MODE 3.

In the event that the control room becomes inaccessible, the operators can monitor the status of the reactor and the suppression pool and the operation of the RHR and RCIC Systems at the remote shutdown panel and support maintaining the plant in MODE 3. The plant is in MODE 3 following a plant shutdown and can be maintained safely in MODE 3 for an extended period of time.

The OPERABILITY of the Remote Shutdown Monitoring System instrumentation Functions ensures that there is sufficient information available on selected plant parameters to support maintaining the plant in MODE 3 should the control room become inaccessible.

APPLICABLE SAFETY ANALYSES

The Remote Shutdown Monitoring System is required to provide instrumentation at appropriate locations outside the control room with a design capability to support maintaining the plant in a safe condition in MODE 3.

The criteria governing the design and the specific system requirements of the Remote Shutdown Monitoring System are located in UFSAR, Section 7.4.4 (Ref. 1).

The Remote Shutdown Monitoring System is considered an important contributor to reducing the risk of accidents; as such, it meets Criterion 4 of 10 CFR 50.36(c)(2)(ii).

(continued)

BASES (continued)

LCO

The Remote Shutdown Monitoring System LCO provides the requirements for the OPERABILITY of the instrumentation necessary to support maintaining the plant in MODE 3 from a location other than the control room. The instrumentation Functions required are listed in the Technical Requirements Manual (Ref. 2).

The instrumentation is that required for:

- Reactor pressure vessel (RPV) pressure control;
- Decay heat removal; and
- RPV inventory control.

The Remote Shutdown Monitoring System is OPERABLE if all instrument channels needed to support the remote shutdown monitoring functions are OPERABLE with readouts displayed in the remote shutdown panel external to the control room.

The Remote Shutdown Monitoring System instruments covered by this LCO do not need to be energized to be considered OPERABLE. This LCO is intended to ensure that the instruments will be OPERABLE if plant conditions require that the Remote Shutdown Monitoring System be placed in operation.

APPLICABILITY

The Remote Shutdown Monitoring System LCO is applicable in MODES 1 and 2. This is required so that the plant can be maintained in MODE 3 for an extended period of time from a location other than the control room.

This LCO is not applicable in MODES 3, 4, and 5. In these MODES, the plant is already subcritical and in a condition of reduced Reactor Coolant System energy. Under these conditions, considerable time is available to restore necessary instrument Functions if control room instruments become unavailable. Consequently, the LCO does not require OPERABILITY in MODES 3, 4, and 5.

(continued)

BASES (continued)

ACTIONS

A Note is included that excludes the MODE change restriction of LCO 3.0.4. This exception allows entry into an applicable MODE while relying on the ACTIONS even though the ACTIONS may eventually require a plant shutdown. This exception is acceptable due to the low probability of an event requiring this system.

The Remote Shutdown Monitoring System is inoperable when each required function is not accomplished by at least one designated Remote Shutdown Monitoring System channel that satisfies the OPERABILITY criteria for the channel's Function. These criteria are outlined in the LCO section of the Bases.

Note 2 has been provided to modify the ACTIONS related to Remote Shutdown Monitoring System Functions. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable Remote Shutdown Monitoring System Functions provide appropriate compensatory measures for separate Functions.

As such, a Note has been provided that allows separate Condition entry for each inoperable Remote Shutdown Monitoring System Function.

A.1

Condition A addresses the situation where one or more required Functions of the Remote Shutdown Monitoring System is inoperable. This includes any required Function listed in Reference 2.

The Required Action is to restore the Function to OPERABLE status within 30 days. The Completion Time is based on operating experience and the low probability of an event that would require evacuation of the control room.

(continued)

BASES

ACTIONS (continued)

B.1

If the Required Action and associated Completion Time of Condition A are not met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours. The allowed Completion Time is reasonable, based on operating experience, to reach the required MODE from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. The 6 hour testing allowance is acceptable since it does not significantly reduce the probability of properly monitoring remote shutdown parameters, when necessary.

SR 3.3.3.2.1

Performance of the CHANNEL CHECK once every 31 days ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.3.2.1 (continued)

Agreement criteria are determined by the plant staff based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the sensor or the signal processing equipment has drifted outside its limit. As specified in the Surveillance, a CHANNEL CHECK is only required for those channels that are normally energized.

The Frequency is based upon operating experience that demonstrates channel failure is rare.

SR 3.3.3.2.2

CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. The test verifies the channel responds to measured parameter values with the necessary range and accuracy.

The 24 month Frequency is based upon operating experience and engineering judgement and is consistent with the refueling cycle.

REFERENCES

1. UFSAR, Section 7.4.4.
2. Technical Requirements Manual.

B 3.3 INSTRUMENTATION

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

BASES

BACKGROUND

The EOC-RPT instrumentation initiates a recirculation pump trip (RPT), if operating in fast speed, to reduce the peak reactor pressure and power resulting from turbine trip or generator load rejection transients to provide additional margin to the MCPR Safety Limit (SL).

The need for the additional negative reactivity in excess of that normally inserted on a scram reflects end of cycle reactivity considerations. Flux shapes at the end of cycle are such that the control rods may not be able to ensure that thermal limits are maintained by inserting sufficient negative reactivity during the first few feet of rod travel upon a scram caused by Turbine Control Valve (TCV) — Fast Closure, Trip Oil Pressure — Low, or Turbine Stop Valve (TSV) — Closure. The physical phenomenon involved is that the void reactivity feedback due to a pressurization transient can add positive reactivity at a faster rate than the control rods can add negative reactivity.

The EOC-RPT instrumentation as shown in Reference 1 is comprised of sensors that detect initiation of closure of the TSVs, or fast closure of the TCVs, combined with relays and logic circuits, to actuate reactor recirculation pump downshift logic to trip each pump from fast speed (60 Hz). The channels include instrument switches that actuate pre-established setpoints. When the setpoint is exceeded, the switch actuates, which then outputs an EOC-RPT signal to the trip logic to downshift the pumps. When the EOC-RPT breakers (3A, 3B, 4A, and 4B; the fast speed breakers) trip open, the recirculation pumps coast down under their own inertia, breakers 1A and 1B close to start the LFMG, and the low frequency breakers 2A and 2B close automatically on a motor speed interlock to operate the recirculation pumps on low speed (although the recirculation pump start in low speed is not part of the EOC-RPT Instrumentation safety function). The EOC-RPT has two identical trip systems, either of which can actuate an RPT.

(continued)

BASES

BACKGROUND (continued)	Each EOC-RPT trip system is a two-out-of-two logic for each Function; thus, either two TSV — Closure or two TCV — Fast Closure, Trip Oil Pressure — Low signals are required for a trip system to actuate. If either trip system actuates, both recirculation pumps, if operating in fast speed, will trip. There are two EOC-RPT breakers in series per recirculation pump. One trip system trips one of the two EOC-RPT breakers for each recirculation pump and the second trip system trips the other EOC-RPT breaker for each recirculation pump.
APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	The TSV — Closure and the TCV — Fast Closure, Trip Oil Pressure — Low Functions are designed to trip the recirculation pumps, if operating in fast speed, in the event of a turbine trip or generator load rejection to mitigate the neutron flux, heat flux and pressurization transients, and to increase the margin to the MCPR SL. The analytical methods and assumptions used in evaluating the turbine trip and generator load rejection, as well as other safety analyses that assume EOC-RPT, are summarized in References 2, 3, and 4. To mitigate pressurization transient effects, the EOC-RPT must trip the recirculation pumps, if operating in fast speed, after initiation of initial closure movement of either the TSVs or the TCVs. The combined effects of this trip and a scram reduce fuel bundle power more rapidly than does a scram alone, resulting in an increased margin to the MCPR SL. Alternatively, MCPR limits for an inoperable EOC-RPT as specified in the COLR are sufficient to mitigate pressurization transient effects. The EOC-RPT function is automatically disabled when THERMAL POWER as sensed by turbine first stage pressure is < 25% RTP. EOC-RPT instrumentation satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii). The OPERABILITY of the EOC-RPT is dependent on the OPERABILITY of the individual instrumentation channel Functions. Each Function must have a required number of OPERABLE channels in each trip system, with their setpoints within the specified Allowable Value of SR 3.3.4.1.2. The actual setpoint is calibrated consistent with applicable

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

setpoint methodology assumptions. Channel OPERABILITY also includes the associated EOC-RPT breakers. Each channel (including the associated EOC-RPT breakers) must also respond within its assumed response time.

Allowable Values are specified for each EOC-RPT Function specified in the LCO. Nominal trip setpoints are specified in the setpoint calculations. The nominal setpoints are selected to ensure the setpoints do not exceed the Allowable Value between successive CHANNEL CALIBRATIONS. Operation with a trip setpoint less conservative than the nominal trip setpoint, but within its Allowable Value, is acceptable. A channel is inoperable if its actual trip setpoint is not within its required Allowable Value. Trip setpoints are those predetermined values of output at which an action should take place. The setpoints are compared to the actual process parameter (e.g., TCV electrohydraulic control (EHC) pressure), and when the measured output value of the process parameter exceeds the setpoint, the associated device (e.g., trip switches) change state. The analytic limits are derived from the limiting values of the process parameters obtained from the safety analysis. The trip setpoints are determined from the analytic limits, corrected for defined process, calibration, and instrument errors. The Allowable Values are then determined, based on the trip setpoint values, by accounting for the calibration based errors. These calibration based errors are limited to reference accuracy, instrument drift, errors associated with measurement and test equipment, and calibration tolerance of loop components. The trip setpoints and Allowable Values determined in this manner provide adequate protection because instrument uncertainties, process effects, calibration tolerances, instrument drift, and severe environment errors (for channels that must function in harsh environments as defined by 10 CFR 50.49) are accounted for and appropriately applied for the instrumentation.

The specific Applicable Safety Analysis, LCO, and Applicability discussions are listed below on a Function by Function basis.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

Alternately, since this instrumentation protects against a MCPR SL violation with the instrumentation inoperable, modifications to the MCPR limits (LCO 3.2.2) may be applied to allow this LCO to be met. The MCPR limit for the condition EOC-RPT inoperable is specified in the COLR.

Turbine Stop Valve—Closure

Closure of the TSVs and a main turbine trip result in the loss of a heat sink that produces reactor pressure, neutron flux, and heat flux transients that must be limited. Therefore, an RPT is initiated on TSV—Closure, in anticipation of the transients that would result from closure of these valves. EOC-RPT decreases reactor power and aids the reactor scram in ensuring the MCPR SL is not exceeded during the worst case transient.

Closure of the TSVs is determined by monitoring the position of each stop valve. There is one valve stem position switch associated with each stop valve, and the signal from each switch is assigned to a separate trip channel. The logic for the TSV—Closure Function is such that two or more TSVs must be closed to produce an EOC-RPT. This Function must be enabled at THERMAL POWER ≥ 25% RTP. This is normally accomplished automatically by pressure switches sensing turbine first stage pressure; therefore, opening of the turbine bypass valves may affect this function. Four channels of TSV—Closure, with two channels in each trip system, are available and required to be OPERABLE to ensure that no single instrument failure will preclude an EOC-RPT from this Function on a valid signal. The TSV—Closure Allowable Value is selected to detect imminent TSV closure.

This protection is required, consistent with the safety analysis assumptions, whenever THERMAL POWER is ≥ 25% RTP with any recirculating pump in fast speed. Below 25% RTP or with the recirculation in slow speed, the Reactor Vessel Steam Dome Pressure—High and the Average Power Range Monitor (APRM) Fixed Neutron Flux—High Functions of the Reactor Protection System (RPS) are adequate to maintain the necessary safety margins.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

TCV — Fast Closure, Trip Oil Pressure — Low

Fast closure of the TCVs during a generator load rejection results in the loss of a heat sink that produces reactor pressure, neutron flux, and heat flux transients that must be limited. Therefore, an RPT is initiated on TCV — Fast Closure, Trip Oil Pressure — Low in anticipation of the transients that would result from the closure of these valves. The EOC-RPT decreases reactor power and aids the reactor scram in ensuring that the MCPR SL is not exceeded during the worst case transient.

Fast closure of the TCVs is determined by measuring the EHC fluid pressure at each control valve. There is one pressure switch associated with each control valve, and the signal from each switch is assigned to a separate trip channel. The logic for the TCV — Fast Closure, Trip Oil Pressure — Low Function is such that two or more TCVs must be closed (pressure switch trips) to produce an EOC-RPT. This Function must be enabled at THERMAL POWER ≥ 25% RTP. This is normally accomplished automatically by pressure switches sensing turbine first stage pressure; therefore, opening of the turbine bypass valves may affect this function. Four channels of TCV — Fast Closure, Trip Oil Pressure — Low with two channels in each trip system, are available and required to be OPERABLE to ensure that no single instrument failure will preclude an EOC-RPT from this Function on a valid signal. The TCV — Fast Closure, Trip Oil Pressure — Low Allowable Value is selected high enough to detect imminent TCV fast closure.

This protection is required consistent with the analysis, whenever the THERMAL POWER is ≥ 25% RTP with any recirculating pump in fast speed. Below 25% RTP or with recirculation pumps in slow speed, the Reactor Vessel Steam Dome Pressure — High and the APRM Fixed Neutron Flux — High Functions of the RPS are adequate to maintain the necessary safety margins. The turbine first stage pressure/reactor power relationship for the setpoint of the automatic enable is identical to that described for TSV closure.

(continued)

BASES (continued)

ACTIONS

A Note has been provided to modify the ACTIONS related to EOC-RPT instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable EOC-RPT instrumentation channels provide appropriate compensatory measures for separate inoperable channels. As such, a Note has been provided that allows separate Condition entry for each inoperable EOC-RPT instrumentation channel.

A.1 and A.2

With one or more required channels inoperable, but with EOC-RPT trip capability maintained (refer to Required Action B.1 and B.2 Bases), the EOC-RPT System is capable of performing the intended function. However, the reliability and redundancy of the EOC-RPT instrumentation is reduced such that a single failure in the remaining trip system could result in the inability of the EOC-RPT System to perform the intended function. Therefore, only a limited time is allowed to restore compliance with the LCO. Because of the diversity of sensors available to provide trip signals, the low probability of extensive numbers of inoperabilities affecting all diverse Functions, and the low probability of an event requiring the initiation of an EOC-RPT, 72 hours is allowed to restore the inoperable channels (Required Action A.1) or apply the EOC-RPT inoperable MCPR limit. Alternately, the inoperable channels may be placed in trip (Required Action A.2) since this would conservatively compensate for the inoperability, restore capability to accommodate a single failure, and allow operation to continue. As noted in Required Action A.2, placing the channel in trip with no further restrictions is not allowed if the inoperable channel is the result of an inoperable breaker, since this may not adequately compensate for the inoperable breaker (e.g., the breaker may be

(continued)

BASES

ACTIONS

A.1 and A.2 (continued)

inoperable such that it will not open). If it is not desired to place the channel in trip (e.g., as in the case where placing the inoperable channel in trip would result in an RPT), or if the inoperable channel is the result of an inoperable breaker, Condition C must be entered and its Required Actions taken.

B.1 and B.2

Required Actions B.1 and B.2 are intended to ensure that appropriate actions are taken if multiple, inoperable, untripped channels within the same Function result in the Function not maintaining EOC-RPT trip capability. A Function is considered to be maintaining EOC-RPT trip capability when sufficient channels are OPERABLE or in trip, such that the EOC-RPT System will generate a trip signal from the given Function on a valid signal and both recirculation pumps, if operating in fast speed, can be tripped. This requires two channels of the Function, in the same trip system, to each be OPERABLE or in trip, and the associated EOC-RPT breakers to be OPERABLE or in trip. Alternatively, Required Action B.2 requires the MCPR limit for inoperable EOC-RPT, as specified in the COLR, to be applied. This also restores the margin to MCPR assumed in the safety analysis.

The 2 hour Completion Time is sufficient for the operator to take corrective action, and takes into account the likelihood of an event requiring actuation of the EOC-RPT instrumentation during this period. It is also consistent with the 2 hour Completion Time provided in LCO 3.2.2, Required Action A.1, since this instrumentation's purpose is to preclude a MCPR violation.

C.1 and C.2

With any Required Action and associated Completion Time not met, THERMAL POWER must be reduced to < 25% RTP within 4 hours. Alternately, the associated recirculation pump fast speed breaker may be removed from service since this performs the intended function of the instrumentation. The

(continued)

BASES

ACTIONS

C.1 and C.2 (continued)

allowed Completion Time of 4 hours is reasonable, based on operating experience, to reduce THERMAL POWER to < 25% RTP from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours, provided the associated Function maintains EOC-RPT trip capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. This Note is based on the reliability analysis (Ref. 5) assumption of the average time required to perform channel surveillance. That analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that the recirculation pumps will trip when necessary.

SR 3.3.4.1.1

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the channel will perform the intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

The Frequency of 92 days is based on reliability analysis (Ref. 5).

SR 3.3.4.1.2

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

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.4.1.2 (continued)

The Frequency is based upon the assumption of a 24 month calibration interval, in the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.4.1.3

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

The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance test when performed at the 24 month Frequency.

SR 3.3.4.1.4

This SR ensures that an EOC-RPT initiated from the TSV—Closure and TCV—Fast Closure, Trip Oil Pressure—Low Functions will not be inadvertently bypassed when THERMAL POWER is ≥ 25% RTP. This involves calibration of the bypass channels. Adequate margins for the instrument setpoint methodologies are incorporated into the actual setpoint. Because main turbine bypass flow can affect this setpoint nonconservatively (THERMAL POWER is derived from first stage pressure), the main turbine bypass valves must remain closed during an in-service calibration at THERMAL POWER ≥ 25% RTP, if performing the calibration using actual turbine first stage pressure, to ensure that the calibration remains valid. If any bypass channel's setpoint is nonconservative (i.e., the Functions are bypassed at ≥ 25% RTP either due to open main turbine bypass valves or other reasons), the

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.4.1.4 (continued)

affected TSV—Closure and TCV—Fast Closure, Trip Oil Pressure—Low Functions are considered inoperable. Alternatively, the bypass channel can be placed in the conservative condition (nonbypass). If placed in the nonbypass condition, this SR is met and the channel considered OPERABLE.

The Frequency of 24 months is based on engineering judgement and reliability of the components.

SR 3.3.4.1.5

This SR ensures that the individual channel response times are less than or equal to the maximum values assumed in the accident analysis. The EOC-RPT SYSTEM RESPONSE TIME acceptance criteria are included in Reference 6.

Note 1 to the Surveillance states that breaker arc suppression time may be assumed from the most recent performance of SR 3.3.4.1.6. This is allowed since the arc suppression time is short and does not appreciably change, due to the design of the breaker opening device and the fact that the breaker is not routinely cycled. Note 2 states that the response time of the limit switches for TSV—Closure Function of EOC-RPT may be conservatively assumed and therefore, are excluded from the EOC-RPT SYSTEM RESPONSE TIME testing. This is allowed since the actual measurement of the limit switch response time is not practicable as this test is done during the refueling outage when the turbine stop valves are fully closed, and thus the limit switch in the circuitry is open. The response time of the limit switch is conservatively assumed to be 10 ms.

EOC-RPT SYSTEM RESPONSE TIME tests are conducted on a 24 month STAGGERED TEST BASIS. The STAGGERED TEST BASIS is conducted on a function basis such that each test includes at least the logic of one type of channel input, i.e., TCV—Fast Closure, Trip Oil Pressure—Low, or TSV—Closure, such that both types of channel inputs are tested at least once per 48 months. Response times cannot be determined at power because operation of final actuated devices is required. Therefore, the 24 month Frequency is consistent

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.4.1.5 (continued)

with the refueling cycle and is based upon plant operating experience, which shows that random failures of instrumentation components that cause serious response time degradation, but not channel failure, are infrequent occurrences.

SR 3.3.4.1.6

This SR ensures that the EOC-RPT breaker arc suppression time is provided to the EOC-RPT SYSTEM RESPONSE TIME test. The 60 month Frequency of the testing is based on the difficulty of performing the test and the reliability of the circuit breakers.

REFERENCES

1. UFSAR, Figure G.3.3-2.
2. UFSAR, Sections 7.6.4, G.3.3.3.8.2, and G.5.1.
3. UFSAR, Sections 15.1.2A, 15.2.2A, 15.2.3, and 15.3A.
4. UFSAR, Section 7.6.4.2.1.
5. GENE-770-06-1-A, "Bases for Changes To Surveillance Test Intervals And Allowed Out-Of-Service Times For Selected Instrumentation Technical Specifications," December 1992.
6. UFSAR, Sections G.3.3.3.8.1, G.3.3.3.8.2, G.5.1.3.1, and G.5.1.6.1.

B 3.3 INSTRUMENTATION

B 3.3.4.2 Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT) Instrumentation

BASES

BACKGROUND

The ATWS-RPT System initiates a recirculation pump trip, adding negative reactivity, following events in which a scram does not but should occur, to lessen the effects of an ATWS event. Tripping the recirculation pumps adds negative reactivity from the increase in steam voiding in the core area as core flow decreases. When Reactor Vessel Water Level — Low Low, Level 2 or Reactor Steam Dome Pressure — High setpoint is reached, the recirculation pump motor breakers trip.

The ATWS-RPT System (Ref. 1) includes sensors, relays, bypass capability, circuit breakers, and switches that are necessary to cause initiation of a recirculation pump trip. The channels include electronic equipment (e.g., trip units) that compares measured input signals with pre-established setpoints. When the setpoint is exceeded, the channel then outputs an ATWS-RPT signal to the trip logic.

The ATWS-RPT consists of two independent trip systems, with two channels of Reactor Steam Dome Pressure — High and two channels of Reactor Vessel Water Level — Low Low, Level 2, in each trip system. Each ATWS-RPT trip system is a two-out-of-two logic for each Function. Thus, either two Reactor Water Level — Low Low, Level 2 or two Reactor Pressure — High signals will trip a trip system. The outputs of the channels in a trip system are combined in a logic so that either trip system will trip both recirculation pumps (by tripping the respective fast speed and low frequency motor generator (LFMG) motor breakers).

There are two fast speed motor breakers and one LFMG output breaker provided for each of the two recirculation pumps for a total of six breakers. The output of each trip system is provided to one fast speed motor breaker (3A, 3B) and the LFMG output breaker (2A, 2B) for each pump.

(continued)

BASES (continued)

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

The ATWS-RPT is not assumed to mitigate any accident or transient in the safety analysis. The ATWS-RPT initiates an RPT to aid in preserving the integrity of the fuel cladding following events in which scram does not, but should, occur. Based on its contribution to the reduction of overall plant risk, however, the instrumentation meets Criterion 4 of 10 CFR 50.36(c)(2)(ii).

The OPERABILITY of the ATWS-RPT is dependent on the OPERABILITY of the individual instrumentation channel Functions. Each Function must have a required number of OPERABLE channels in each trip system, with their setpoints within the specified Allowable Value of SR 3.3.4.2.3. The actual setpoint is calibrated consistent with applicable setpoint methodology assumptions. Channel OPERABILITY also includes the associated recirculation pump fast speed and LFMG breakers.

Allowable Values are specified for each ATWS-RPT Function specified in the LCO. Nominal trip setpoints are specified in the setpoint calculations. The nominal setpoints are selected to ensure the setpoints do not exceed the Allowable Value between CHANNEL CALIBRATIONS. Operation with a trip setpoint less conservative than the nominal trip setpoint, but within its Allowable Value, is acceptable. A channel is inoperable if its actual trip setpoint is not within its required Allowable Value. Trip setpoints are those predetermined values of output at which an action should take place. The setpoints are compared to the actual process parameter (e.g., reactor vessel water level), and when the measured output value of the process parameter exceeds the setpoint, the associated device (e.g., trip unit) changes state. The analytic limits are derived from the limiting values of the process parameters obtained from the ATWS analysis. The trip setpoints are determined from the analytic limits, corrected for defined process, calibration, and instrument errors. The Allowable Values are then determined, based on the trip setpoint values, by accounting for the calibration based errors. These calibration based errors are limited to reference accuracy, instrument drift, errors associated with measurement and test equipment, and calibration tolerance of loop components. The trip setpoints and Allowable Values determined in this manner provide adequate protection

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)	because instrument uncertainties, process effects, calibration tolerances, instrument drift, and severe environment errors (for channels that must function in harsh environments as defined by 10 CFR 50.49) are accounted for and appropriately applied for the instrumentation.

The individual Functions are required to be OPERABLE in MODE 1 to protect against common mode failures of the Reactor Protection System by providing a diverse trip to mitigate the consequences of a postulated ATWS event. The Reactor Steam Dome Pressure — High and Reactor Vessel Water Level — Low Low, Level 2 Functions are required to be OPERABLE in MODE 1, since the reactor is producing significant power and the recirculation system could be at high flow. During this MODE, the potential exists for pressure increases or low water level, assuming an ATWS event. In MODE 2, the reactor is at low power and the recirculation system is at low flow; thus, the potential is low for a pressure increase or low water level, assuming an ATWS event. Therefore, the ATWS-RPT is not necessary. In MODES 3 and 4, the reactor is shut down with all control rods inserted; thus, an ATWS event is not significant and the possibility of a significant pressure increase or low water level is negligible. In MODE 5, the one-rod-out interlock ensures the reactor remains subcritical; thus, an ATWS event is not significant. In addition, the reactor pressure vessel (RPV) head is not fully tensioned and no pressure transient threat to the reactor coolant pressure boundary (RCPB) exists.

The specific Applicable Safety Analyses and LCO discussions are listed below on a Function by Function basis.

a. Reactor Vessel Water Level — Low Low, Level 2

Low RPV water level indicates the capability to cool the fuel may be threatened. Should RPV water level decrease too far, fuel damage could result. Therefore, the ATWS-RPT System is initiated at Level 2 to aid in maintaining level above the top of the active fuel. The reduction of core flow reduces the neutron flux and THERMAL POWER and, therefore, the rate of coolant boiloff.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

a. Reactor Vessel Water Level — Low Low, Level 2 (continued)

Reactor vessel water level signals are initiated from four level transmitters that sense the difference between the pressure due to a constant column of water (reference leg) and the pressure due to the actual water level (variable leg) in the vessel.

Four channels of Reactor Vessel Level — Low Low, Level 2, with two channels in each trip system, are available and required to be OPERABLE to ensure that no single instrument failure can preclude an ATWS-RPT from this Function on a valid signal. The Reactor Vessel Water Level — Low Low, Level 2, Allowable Value is chosen so that the system will not initiate after a Level 3 scram with feedwater still available.

b. Reactor Steam Dome Pressure — High

Excessively high RPV pressure may rupture the RCPB. An increase in the RPV pressure during reactor operation compresses the steam voids and results in a positive reactivity insertion. This increases neutron flux and THERMAL POWER, which could potentially result in fuel failure and RPV overpressurization. The Reactor Steam Dome Pressure — High Function initiates an RPT for transients that result in a pressure increase, counteracting the pressure increase by rapidly reducing core power generation. For the overpressurization event, the RPT aids in the mitigation of the ATWS event and, along with the safety/relief valves (S/RVs), limits the peak RPV pressure to less than the ASME Section III Code Service Level C limits (1500 psig).

The Reactor Steam Dome Pressure — High signals are initiated from four pressure transmitters that monitor reactor steam dome pressure. Four channels of Reactor Steam Dome Pressure — High, with two channels in each trip system, are available and required to be OPERABLE to ensure that no single instrument failure can preclude an ATWS-RPT from this Function on a valid signal. The Reactor Steam Dome Pressure — High Allowable Value is chosen to provide an adequate margin to the ASME Section III Code Service Level C allowable Reactor Coolant System pressure.

(continued)

BASES (continued)

ACTIONS

A Note has been provided to modify the ACTIONS related to ATWS-RPT instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable ATWS-RPT instrumentation channels provide appropriate compensatory measures for separate inoperable channels. As such, a Note has been provided that allows separate Condition entry for each inoperable ATWS-RPT instrumentation channel.

A.1 and A.2

With one or more channels inoperable, but with ATWS-RPT trip capability for each Function maintained (refer to Required Action B.1 and C.1 Bases), the ATWS-RPT System is capable of performing the intended function. However, the reliability and redundancy of the ATWS-RPT instrumentation is reduced, such that a single failure in the remaining trip system could result in the inability of the ATWS-RPT System to perform the intended function. Therefore, only a limited time is allowed to restore the inoperable channels to OPERABLE status. Because of the diversity of sensors available to provide trip signals, the low probability of extensive numbers of inoperabilities affecting all diverse Functions, and the low probability of an event requiring the initiation of ATWS-RPT, 14 days is provided to restore the inoperable channel (Required Action A.1). Alternately, the inoperable channel may be placed in trip (Required Action A.2), since this would conservatively compensate for the inoperability, restore capability to accommodate a single failure, and allow operation to continue. As noted, placing the channel in trip with no further restrictions is not allowed if the inoperable channel is the result of an inoperable breaker, since this may not adequately compensate for the inoperable breaker (e.g., the breaker may be inoperable such that it will not open). If it is not

(continued)

BASES

ACTIONS

A.1 and A.2 (continued)

desirable to place the channel in trip (e.g., as in the case where placing the inoperable channel in trip would result in an RPT), or if the inoperable channel is the result of an inoperable breaker, Condition D must be entered and its Required Actions taken.

B.1

Required Action B.1 is intended to ensure that appropriate actions are taken if multiple, inoperable, untripped channels within the same Function result in the Function not maintaining ATWS-RPT trip capability. A Function is considered to be maintaining ATWS-RPT trip capability when sufficient channels are OPERABLE or in trip such that the ATWS-RPT System will generate a trip signal from the given Function on a valid signal, and both recirculation pumps can be tripped. This requires two channels of the Function in the same trip system to each be OPERABLE or in trip, and the corresponding motor breakers associated with ATWS-RPT (one fast speed and one LFMG per pump) to be OPERABLE or in trip.

The 72 hour Completion Time is sufficient for the operator to take corrective action (e.g., restoration or tripping of channels) and takes into account the likelihood of an event requiring actuation of the ATWS-RPT instrumentation during this period and the fact that one Function is still maintaining ATWS-RPT trip capability.

C.1

Required Action C.1 is intended to ensure that appropriate actions are taken if multiple, inoperable, untripped channels within both Functions result in both Functions not maintaining ATWS-RPT trip capability. The description of a Function maintaining ATWS-RPT trip capability is discussed in the Bases for Required Action B.1, above.

The 1 hour Completion Time is sufficient for the operator to take corrective action and takes into account the likelihood of an event requiring actuation of the ATWS-RPT instrumentation during this period.

(continued)

BASES

ACTIONS (continued)

D.1 and D.2

With any Required Action and associated Completion Time not met, the plant must be brought to a MODE or other specified condition in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 2 within 6 hours (Required Action D.2). Alternately, the associated recirculation pump may be removed from service since this performs the intended Function of the instrumentation (Required Action D.1). The allowed Completion Time of 6 hours is reasonable, based on operating experience, both to reach MODE 2 from full power conditions and to remove a recirculation pump from service in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains ATWS-RPT trip capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. This Note is based on the reliability analysis (Ref. 2) assumption of the average time required to perform channel surveillance. That analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that the recirculation pumps will trip when necessary.

SR 3.3.4.2.1

Performance of the CHANNEL CHECK once every 12 hours ensures that gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the instrument channels could be an indication of excessive instrument drift in one of the channels or

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.4.2.1 (continued)

something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying that the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limit.

The Frequency is based upon operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the required channels of this LCO.

SR 3.3.4.2.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the channel will perform the intended function.

Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

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

SR 3.3.4.2.3

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

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.4.2.3 (continued)

The Frequency is based upon the assumption of a 24 month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.4.2.4

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

The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 24 month Frequency.

REFERENCES

1. UFSAR, Appendix G.3.1.2.

2. GENE-770-06-1-A, "Bases For Changes To Surveillance Test Intervals and Allowed Out-of-Service Times For Selected Instrumentation Technical Specifications," December 1992.

B 3.3 INSTRUMENTATION

B 3.3.5.1 Emergency Core Cooling System (ECCS) Instrumentation

BASES

BACKGROUND

The purpose of the ECCS instrumentation is to initiate appropriate responses from the systems to ensure that fuel is adequately cooled in the event of a design basis accident or transient.

For most anticipated operational occurrences (AOOs) and Design Basis Accidents (DBAs), a wide range of dependent and independent parameters are monitored.

The ECCS instrumentation actuates low pressure core spray (LPCS), low pressure coolant injection (LPCI), high pressure core spray (HPCS), Automatic Depressurization System (ADS), and the diesel generators (DGs). The equipment involved with each of these systems is described in the Bases for LCO 3.5.1, "ECCS — Operating," or LCO 3.8.1, "AC Sources—Operating."

Low Pressure Core Spray System

The LPCS System may be initiated by either automatic or manual means. Automatic initiation occurs for conditions of Reactor Vessel Water Level — Low Low Low, Level 1 or Drywell Pressure — High. Reactor vessel water level is monitored by two redundant differential pressure transmitters, each providing input to a trip unit. Drywell pressure is monitored by two pressure switches. The outputs of the four signals (two trip units and two pressure switches) are connected to relays whose contacts are arranged in a one-out-of-two taken twice logic. The logic will provide an initiation signal if both reactor vessel water level channels or both drywell pressure channels trip. In addition, the logic will provide an initiation signal if a certain combination of reactor vessel water level and drywell pressure channels trip. The LPCS initiation signal is a sealed in signal and must be manually reset. The LPCS initiation signal also provides an initiation signal to the Division 1 LPCI initiation logic. The logic can also be

(continued)

BASES

BACKGROUND

Low Pressure Core Spray System (continued)

initiated by use of a manual push button. Upon receipt of an initiation signal, the LPCS pump is automatically started if normal AC power is available; otherwise the pump is started immediately after AC power is available from the DG.

The LPCS test line isolation valve, which is also a primary containment isolation valve (PCIV), is closed on a LPCS initiation signal to allow full system flow assumed in the accident analysis and maintains containment isolation in the event LPCS is not operating.

The LPCS pump discharge flow is monitored by a flow switch that senses the differential pressure across a flow element in the pump discharge line. When the pump is running and discharge flow is low enough that pump overheating may occur, the minimum flow return line valve is opened. The valve is automatically closed if flow is above the minimum flow setpoint to allow the full system flow assumed in the accident analysis.

The LPCS System also monitors the pressure within the injection line and in the reactor vessel to ensure that, before the injection valve opens, the injection line pressure and reactor pressure have fallen to a value below the LPCS System's maximum design pressure. The pressure in the LPCS injection line is monitored by one pressure switch while reactor pressure is monitored by two pressure switches. The injection valve will receive an open permissive signal if the LPCS injection line pressure switch senses low pressure (one-out-of-one logic) and if any one of the reactor pressure switches sense low pressure (one-out-of-two logic). The reactor vessel pressure switches also provide a permissive signal in the Division 1 LPCI injection valve.

Low Pressure Coolant Injection Subsystems

The LPCI is an operating mode of the Residual Heat Removal (RHR) System, with three LPCI subsystems. The LPCI subsystems may be initiated by automatic or manual means. Automatic initiation occurs for conditions of Reactor Vessel Water Level — Low Low Low, Level 1 or Drywell Pressure — High.

(continued)

BASES

BACKGROUND

Low Pressure Coolant Injection Subsystems (continued)

Reactor vessel water level is monitored by two redundant differential pressure transmitters per division, each providing input to a trip unit. Drywell pressure is monitored by two pressure switches per division. The outputs of the four Division 2 LPCI (loops B and C) signals (two trip units and two pressure switches) are connected to relays whose contacts are arranged in a one-out-of-two taken twice logic. The logic will provide an initiation signal if both reactor vessel water level channels or both drywell pressure channels trip. In addition, the logic will provide an initiation signal if certain combinations of reactor vessel water level and drywell pressure channels trip. The Division 1 LPCI (loop A) receives its initiation signal from the LPCS logic, which uses a similar one-out-of-two taken twice logic. The two divisions can also be initiated by use of a manual push button (one per division, with the LPCI A manual push button being common with LPCS). Once an initiation signal is received by the LPCI control circuitry, the signal is sealed in until manually reset.

Upon receipt of an initiation signal, the LPCI Pump C is automatically started if normal AC power is available; otherwise the pump is started immediately after power is available from the DG while LPCI pumps A and B are automatically started if offsite power is available; otherwise the pumps are started in approximately 5 seconds after AC power from the DG is available. These time delays limit the loading on the standby power sources.

Each LPCI subsystem's discharge flow is monitored by a flow switch that senses the differential pressure across a flow element in the pump discharge line. When a pump is running and discharge flow is low enough that pump overheating may occur, the respective minimum flow return line valve is opened. The valve is automatically closed if flow is above the minimum flow setpoint to allow the full system flow assumed in the analyses.

The RHR test line suppression pool cooling isolation and suppression pool spray isolation valves (which are also PCIVs) are closed on a LPCI initiation signal to allow full system flow assumed in the accident analysis and maintain containment isolated in the event LPCI is not operating.

(continued)

BASES

BACKGROUND

Low Pressure Coolant Injection Subsystems (continued)

The LPCI subsystems monitor the pressure within the associated injection line and in the reactor vessel to ensure that, prior to an injection valve opening, the injection line pressure and reactor pressure have fallen to a value below the LPCI subsystem's maximum design pressure. The pressure within each LPCI injection line is monitored by one pressure switch, while reactor pressure is monitored by two pressure switches, per division. The associated injection valve will receive an open permissive signal if the LPCI injection line pressure switch senses low pressure (one-out-of-one logic) and if any one of the associated reactor pressure switches sense low pressure (one-out-of-two logic, per division). The Division 1 LPCI (loop A) receives its reactor pressure signals from the LPCS logic.

High Pressure Core Spray System

The HPCS System may be initiated by either automatic or manual means. Automatic initiation occurs for conditions of Reactor Vessel Water Level—Low Low, Level 2 or Drywell Pressure—High. Reactor vessel water level is monitored by four redundant differential pressure transmitters and drywell pressure is monitored by four redundant pressure switches. Each differential pressure transmitter provides input to a trip unit. The outputs of the trip units are connected to relays whose contacts are arranged in a one-out-of-two taken twice logic. Each pressure switch provides input to a relay whose contact is arranged in a one-out-of-two taken twice logic. The logic can also be initiated by use of a manual push button. The HPCS System initiation signal is a sealed in signal and must be manually reset.

The HPCS pump discharge flow and pressure are monitored by a differential pressure switch and a pressure switch, respectively. When the pump is running (as indicated by the pressure switch) and discharge flow is low enough that pump overheating may occur, the minimum flow return line valve is opened. The valve is automatically closed if flow is above the minimum flow setpoint to allow full system flow assumed in the accident analyses.

(continued)

BASES

BACKGROUND

High Pressure Core Spray System (continued)

The HPCS full flow test line isolation valve to the suppression pool (which is also a PCIV) is closed on a HPCS initiation signal to allow full system flow assumed in the accident analyses and maintain containment isolated in the event HPCS is not operating.

The HPCS System provides makeup water to the reactor until the reactor vessel water level reaches the high water level (Level 8) trip, at which time the HPCS injection valve closes. The HPCS pump will continue to run on minimum flow. The logic is two-out-of-two to provide high reliability of the HPCS System. The injection valve automatically reopens if a low low water level signal is subsequently received.

Automatic Depressurization System

ADS may be initiated by either automatic or manual means. Automatic initiation occurs when signals indicating Reactor Vessel Water Level — Low Low Low, Level 1; Drywell Pressure — High or ADS Drywell Pressure Bypass Timer; confirmed Reactor Vessel Water Level — Low, Level 3; and either LPCS or LPCI Pump Discharge Pressure — High are all present, and the ADS Initiation Timer has timed out. There are two differential pressure transmitters for Reactor Vessel Water Level — Low Low Low, Level 1, two pressure switches for Drywell Pressure — High, and one differential pressure transmitter for confirmed Reactor Vessel Water Level — Low, Level 3 in each of the two ADS trip systems. Each of the transmitters connects to a trip unit, which then drives a relay whose contacts input to the initiation logic. Each pressure switch drives a relay whose contact also inputs to the initiation logic.

Each ADS trip system (trip system A and trip system B) includes a time delay between satisfying the initiation logic and the actuation of the ADS valves. The time delay chosen is long enough that the HPCS has time to operate to recover to a level above Level 1, yet not so long that the LPCI and LPCS systems are unable to adequately cool the fuel if the HPCS fails to maintain level. An alarm in the control room is annunciated when either of the timers is running. Resetting the ADS initiation signals resets the ADS Initiation Timers.

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BASES

BACKGROUND

Automatic Depressurization System (continued)

The ADS also monitors the discharge pressures of the three LPCI pumps and the LPCS pump. Each ADS trip system includes two discharge pressure permissive switches from each of the two low pressure ECCS pumps in the associated Division (i.e., Division 1 ECCS inputs to ADS trip system A and Division 2 ECCS inputs to ADS trip system B). The signals are used as a permissive for ADS actuation, indicating that there is a source of core coolant available once the ADS has depressurized the vessel. Any one of the four low pressure pumps provides sufficient core coolant flow to permit automatic depressurization.

The ADS logic in each trip system is arranged in two strings. One string has a contact from each of the following variables: Reactor Vessel Water Level — Low Low Low, Level 1; Drywell Pressure — High or ADS Drywell Pressure Bypass Timer; Reactor Vessel Water Level — Low, Level 3; ADS Initiation Timer; and two low pressure ECCS Discharge Pressure — High contacts (one from each divisional pump). The other string has a contact from each of the following variables: Reactor Vessel Water Level — Low Low Low, Level 1; Drywell Pressure — High; ADS Drywell Pressure Bypass Timer; and two low pressure ECCS Discharge Pressure — High contacts (one from each divisional pump). To initiate an ADS trip system, the following applicable contacts must close in the associated string: Reactor Vessel Water Level — Low Low Low, Level 1; Drywell Pressure — High or ADS Drywell Pressure Bypass Timer; Reactor Vessel Water Level — Low, Level 3 (one string only); ADS Initiation Timer (one string only); and one of the two low pressure ECCS Discharge Pressure — High contacts.

Either ADS trip system A or trip system B will cause all the ADS valves to open. Once the Drywell Pressure — High or ADS initiation signals are present, they are individually sealed in until manually reset.

Manual initiation is accomplished by arming and depressing both ADS A trip system strings (Division 1) or both ADS B trip system strings (Division 2) which will cause the ADS valves to open with no time delay. No permissive interlocks

(continued)

BASES

BACKGROUND

Automatic Depressurization System (continued)

are required for the manual initiation. Manual inhibit switches are provided in the control room for ADS; however, their function is not required for ADS OPERABILITY (provided ADS is not inhibited when required to be OPERABLE).

Diesel Generators

The Division 1, 2, and 3 DGs may be initiated by either automatic or manual means. Automatic initiation occurs for conditions of Reactor Vessel Water Level — Low Low Low, Level 1 or Drywell Pressure — High for DGs 0 and 1A (2A), and Reactor Vessel Water Level — Low Low, Level 2 or Drywell Pressure — High for DG 1B (2B). DG 0 is common to both units and will start on an initiation signal from both units. The other DGs will only start on an initiation signal from the unit ECCS logic. The DGs are also initiated upon loss of voltage signals. (Refer to Bases for LCO 3.3.8.1, "Loss of Power (LOP) Instrumentation," for a discussion of these signals.) The DGs receive their initiation signals from the associated Divisions' ECCS logic (i.e., DG 0 receives an initiation signal from Division 1 ECCS (LPCS and LPCI A); DG 1A/2A receives an initiation signal from Division 2 ECCS (LPCI B and LPCI C); and DG 1B/2B receives an initiation signal from Division 3 ECCS (HPCS)). The DGs can also be started manually from the control room and locally in the associated DG room. The DG initiation signal is a sealed in signal and must be manually reset. The DG initiation logic is reset by resetting the associated ECCS initiation logic. Upon receipt of a LOCA initiation signal, each DG is automatically started, is ready to load in approximately 13 seconds, and will run in standby conditions (rated voltage and speed, with the DG output breaker open). The DGs will only energize their respective emergency buses if a loss of offsite power occurs. (Refer to Bases for LCO 3.3.8.1.)

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

The actions of the ECCS are explicitly assumed in the safety analyses of References 1, 2, and 3. The ECCS is initiated to preserve the integrity of the fuel cladding by limiting the post LOCA peak cladding temperature to less than the 10 CFR 50.46 limits.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)	ECCS instrumentation satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii). Certain instrumentation Functions are retained for other reasons and are described below in the individual Functions discussion.

The OPERABILITY of the ECCS instrumentation is dependent upon the OPERABILITY of the individual instrumentation channel Functions specified in Table 3.3.5.1-1. Each Function must have a required number of OPERABLE channels, with their setpoints within the specified Allowable Values, where appropriate. The actual setpoint is calibrated consistent with applicable setpoint methodology assumptions. Table 3.3.5.1-1, footnote (b), is added to show that certain ECCS instrumentation Functions are also required to be OPERABLE to perform DG initiation.

Allowable Values are specified for each ECCS Function specified in the Table. Nominal trip setpoints are specified in the setpoint calculations. The nominal setpoints are selected to ensure that the setpoints do not exceed the Allowable Value between CHANNEL CALIBRATIONS. Operation with a trip setpoint less conservative than the nominal trip setpoint, but within its Allowable Value, is acceptable. A channel is inoperable if its actual trip setpoint is not within its required Allowable Value. Trip setpoints are those predetermined values of output at which an action should take place. The setpoints are compared to the actual process parameter (e.g., reactor vessel water level), and when the measured output value of the process parameter exceeds the setpoint, the associated device (e.g., trip unit) changes state. The analytic limits are derived from the limiting values of the process parameters obtained from the safety analysis. The trip setpoints are determined from the analytic limits, corrected for defined process, calibration, and instrument errors. The Allowable Values are then determined, based on the trip setpoint values, by accounting for the calibration based errors. These calibration based errors are limited to reference accuracy, instrument drift, errors associated with measurement and test equipment, and calibration tolerance of loop components. The trip setpoints and Allowable Values determined in this manner provide adequate protection

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)	because instrument uncertainties, process effects, calibration tolerances, instrument drift, and severe environment errors (for channels that must function in harsh environments as defined by 10 CFR 50.49) are accounted for and appropriately applied for the instrumentation.

In general, the individual Functions are required to be OPERABLE in the MODES or other specified conditions that may require ECCS (or DG) initiation to mitigate the consequences of a design basis accident or transient. To ensure reliable ECCS and DG function, a combination of Functions is required to provide primary and secondary initiation signals.

The specific Applicable Safety Analyses, LCO, and Applicability discussions are listed below on a Function by Function basis.

<u>Low Pressure Core Spray and Low Pressure Coolant Injection Systems</u>

<u>1.a, 2.a Reactor Vessel Water Level — Low Low Low, Level 1</u>

Low reactor pressure vessel (RPV) water level indicates that the capability to cool the fuel may be threatened. Should RPV water level decrease too far, fuel damage could result. The low pressure ECCS and associated DGs are initiated at Level 1 to ensure that core spray and flooding functions are available to prevent or minimize fuel damage. The Reactor Vessel Water Level — Low Low Low, Level 1 is one of the Functions assumed to be OPERABLE and capable of initiating the ECCS during the transients analyzed in References 1 and 3. In addition, the Reactor Vessel Water Level — Low Low Low, Level 1 Function is directly assumed in the analysis of the recirculation line break (Ref. 2). The core cooling function of the ECCS, along with the scram action of the Reactor Protection System (RPS), ensures that the fuel peak cladding temperature remains below the limits of 10 CFR 50.46.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

1.a, 2.a Reactor Vessel Water Level—Low Low Low, Level 1 (continued)

Reactor Vessel Water Level—Low Low Low, Level 1 signals are initiated from four differential pressure transmitters that sense the difference between the pressure due to a constant column of water (reference leg) and the pressure due to the actual water level (variable leg) in the vessel. The Reactor Vessel Water Level—Low Low Low, Level 1 Allowable Value is chosen to allow time for the low pressure core flooding systems to activate and provide adequate cooling.

Two channels of Reactor Vessel Water Level—Low Low Low, Level 1 Function per associated Division are only required to be OPERABLE when the associated ECCS is required to be OPERABLE, to ensure that no single instrument failure can preclude ECCS initiation. (Two channels input to LPCS, LPCI A, and the associated Division 1 DG, while the other two channels input to LPCI B, LPCI C, and Division 2 DG.) Refer to LCO 3.5.1 and LCO 3.5.2, "ECCS—Shutdown," for Applicability Bases for the low pressure ECCS subsystems.

1.b, 2.b. Drywell Pressure—High

High pressure in the drywell could indicate a break in the reactor coolant pressure boundary (RCPB). The low pressure ECCS and associated DGs are initiated upon receipt of the Drywell Pressure—High Function in order to minimize the possibility of fuel damage. The core cooling function of the ECCS, along with the scram action of the RPS, ensures that the fuel peak cladding temperature remains below the limits of 10 CFR 50.46.

High drywell pressure signals are initiated from four pressure switches that sense drywell pressure. The Allowable Value was selected to be as low as possible and be indicative of a LOCA inside primary containment.

The Drywell Pressure—High Function is required to be OPERABLE when the associated ECCS is required to be OPERABLE in conjunction with times when the primary containment is

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

1.b, 2.b. Drywell Pressure—High (continued)

required to be OPERABLE. Thus, four channels of the LPCS and LPCI Drywell Pressure—High Function are required to be OPERABLE in MODES 1, 2, and 3 to ensure that no single instrument failure can preclude ECCS initiation. (Two channels input to LPCS, LPCI A, and the Division 1 DG, while the other two channels input to LPCI B, LPCI C, and the Division 2 DG.) In MODES 4 and 5, the Drywell Pressure—High Function is not required since there is insufficient energy in the reactor to pressurize the primary containment to Drywell Pressure—High setpoint. Refer to LCO 3.5.1 for Applicability Bases for the low pressure ECCS subsystems.

1.c, 2.c. LPCI Pump A and Pump B Start—Time Delay Relay

The purpose of this time delay is to stagger the start of the two ECCS pumps that are in each of Divisions 1 and 2, thus limiting the starting transients on the 4.16 kV emergency buses. This Function is only necessary when power is being supplied from the standby power sources (DG). On ECCS initiation, the time delay is bypassed if the normal feed breaker to the Class 1E switchgear is closed. The LPCI Pump Start—Time Delay Relays are assumed to be OPERABLE in the accident and transient analyses requiring ECCS initiation. That is, the analysis assumes that the pumps will initiate when required and excess loading will not cause failure of the standby power sources (DG).

There are two LPCI Pump Start—Time Delay Relays, one in each of the RHR "A" and RHR "B" pump start logic circuits. While each time delay relay is dedicated to a single pump start logic, a single failure of a LPCI Pump Start—Time Delay Relay could result in the failure of the two low pressure ECCS pumps, powered from the emergency bus, to perform their intended function within the assumed ECCS RESPONSE TIMES (e.g., as in the case where both ECCS pumps on one emergency bus start simultaneously due to an inoperable time delay relay). This still leaves two of the four low pressure ECCS pumps OPERABLE; thus, the single failure criterion is met (i.e., loss of one instrument does not preclude ECCS initiation). The Allowable Value for the LPCI Pump Start—Time Delay Relays is chosen to be short enough so that ECCS operation is not degraded.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

1.c, 2.c. LPCI Pump A and Pump B Start-Time Delay Relay (continued)

Each LPCI Pump Start-Time Delay Relay Function is required to be OPERABLE when the associated LPCI subsystem is required to be OPERABLE. Refer to LCO 3.5.1 and LCO 3.5.2 for Applicability Bases for the LPCI subsystems.

1.d, 1.g, 2.d, 2.f Reactor Steam Dome Pressure-Low (Injection Permissive) and LPCS and LPCI Injection Line Pressure-Low (Injection Permissive)

Low reactor steam dome pressure and injection line pressure signals are used as permissives for the low pressure ECCS subsystems. This ensures that, prior to opening the injection valves of the low pressure ECCS subsystems, the reactor pressure has fallen to a value below these subsystems maximum design pressure. The Reactor Steam Dome Pressure-Low (Injection Permissive) and LPCS and LPCI Injection Line Pressure-Low (Injection Permissive) are two of the Functions assumed to be OPERABLE and capable of permitting initiation of the ECCS during the transients analyzed in References 1 and 3. In addition, the Reactor Steam Dome Pressure-Low (Injection Permissive) and LPCS and LPCI Injection Line Pressure-Low (Injection Permissive) Functions are directly assumed in the analysis of the recirculation line break (Ref. 2). The core cooling function of the ECCS, along with the scram action of the RPS, ensures that the fuel peak cladding temperature remains below the limits of 10 CFR 50.46.

The Reactor Steam Dome Pressure-Low (Injection Permissive) signals are initiated from four pressure switches that sense the reactor dome pressure. The LPCS and LPCI Injection Line Pressure-Low (Injection Permissive) signals are initiated from four pressure switches that sense the pressure in the injection line (one switch for each low pressure ECCS injection line). The Allowable Values are low enough to

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

1.d, 1.g, 2.d, 2.f Reactor Steam Dome Pressure - Low (Injection Permissive) and LPCS and LPCI Injection Line Pressure - Low (Injection Permissive) (continued)

prevent overpressurizing the equipment in the low pressure ECCS, but high enough to ensure that the ECCS injection prevents the fuel peak cladding temperature from exceeding the limits of 10 CFR 50.46.

Two channels of Reactor Steam Dome Pressure - Low (Injection Permissive) Function per associated Division and one channel of LPCS and LPCI Injection Line Pressure - Low (Injection Permissive) per associated injection line are only required to be OPERABLE when the associated ECCS is required to be OPERABLE to ensure that no single instrument failure can preclude ECCS initiation. (Two channels of Reactor Vessel Pressure - Low (Injection Permissive) are required for LPCS and LPCI A, while two other channels are required for LPCI B and LPCI C. In addition, one channel of LPCS Injection Line Pressure - Low (Injection Permissive) is required for LPCS, while one channel of LPCI Injection Line Pressure is required for each LPCI subsystem.) Refer to LCO 3.5.1 and LCO 3.5.2 for Applicability Bases for the low pressure ECCS subsystems.

1.e, 1.f, 2.e. LPCS and LPCI Pump Discharge Flow - Low (Bypass)

The minimum flow instruments are provided to protect the associated low pressure ECCS pump from overheating when the pump is operating and the associated injection valve is not sufficiently open. The minimum flow line valve is opened when low flow is sensed, and the valve is automatically closed when the flow rate is adequate to protect the pump. The LPCI and LPCS Pump Discharge Flow - Low (Bypass) Functions are assumed to be OPERABLE and capable of closing the minimum flow valves to ensure that the low pressure ECCS flows assumed during the transients and accidents analyzed in References 1, 2, and 3 are met. The core cooling function of the ECCS, along with the scram action of the RPS, ensures that the fuel peak cladding temperature remains below the limits of 10 CFR 50.46.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

1.e, 1.f, 2.e. LPCS and LPCI Pump Discharge Flow—Low (Bypass) (continued)

One flow switch per ECCS pump is used to detect the associated subsystems flow rate. The logic is arranged such that each switch causes its associated minimum flow valve to open when flow is low with the pump running. The logic will close the minimum flow valve once the closure setpoint is exceeded. The LPCI minimum flow valves are time delayed such that the valves will not open for approximately 8 seconds after the switches detect low flow. The time delay is provided to limit reactor vessel inventory loss during the startup of the RHR shutdown cooling mode. The Pump Discharge Flow—Low (Bypass) Allowable Values are high enough to ensure that the pump flow rate is sufficient to protect the pump, yet low enough to ensure that the closure of the minimum flow valve is initiated to allow full flow into the core.

Each channel of Pump Discharge Flow—Low (Bypass) Function (one LPCS channel and three LPCI channels) is only required to be OPERABLE when the associated ECCS is required to be OPERABLE, to ensure that no single instrument failure can preclude the ECCS function. Refer to LCO 3.5.1 and LCO 3.5.2 for Applicability Bases for the low pressure ECCS subsystems.

1.h, 2.g. Manual Initiation

The Manual Initiation push button channels introduce signals into the appropriate ECCS logic to provide manual initiation capability and are redundant to the automatic protective instrumentation. There is one push button for each of the two Divisions of low pressure ECCS (i.e., Division 1 ECCS, LPCS and LPCI A; Division 2 ECCS, LPCI B and LPCI C).

The Manual Initiation Function is not assumed in any accident or transient analyses in the UFSAR. However, the Function is retained for overall redundancy and diversity of the low pressure ECCS function as required by the NRC in the plant licensing basis.

(continued)

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APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

1.h, 2.g. Manual Initiation (continued)

There is no Allowable Value for this Function since the channels are mechanically actuated based solely on the position of the push buttons. Each channel of the Manual Initiation Function (one channel per division) is only required to be OPERABLE when the associated ECCS is required to be OPERABLE. Refer to LCO 3.5.1 and LCO 3.5.2 for Applicability Bases for the low pressure ECCS subsystems.

High Pressure Core Spray System

3.a. Reactor Vessel Water Level — Low Low, Level 2

Low RPV water level indicates that the capability to cool the fuel may be threatened. Should RPV water level decrease too far, fuel damage could result. Therefore, the HPCS System and associated DG is initiated at Level 2 to maintain level above the top of the active fuel. The Reactor Vessel Water Level — Low Low, Level 2 is one of the Functions assumed to be OPERABLE and capable of initiating HPCS during the transients analyzed in References 1 and 3. The Reactor Vessel Water Level — Low Low, Level 2 Function associated with HPCS is directly assumed in the analysis of the recirculation line break (Ref. 2). The core cooling function of the ECCS, along with the scram action of the RPS, ensures that the fuel peak cladding temperature remains below the limits of 10 CFR 50.46.

Reactor Vessel Water Level — Low Low, Level 2 signals are initiated from four differential pressure transmitters that sense the difference between the pressure due to a constant column of water (reference leg) and the pressure due to the actual water level (variable leg) in the vessel. The Reactor Vessel Water Level — Low Low, Level 2 Allowable Value is chosen such that for complete loss of feedwater flow, the Reactor Core Isolation Cooling (RCIC) System flow with HPCS assumed to fail will be sufficient to avoid initiation of low pressure ECCS at Reactor Vessel Water Level — Low Low Low, Level 1.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

3.a. Reactor Vessel Water Level — Low Low, Level 2 (continued)

Four channels of Reactor Vessel Water Level — Low Low, Level 2 Function are only required to be OPERABLE when HPCS is required to be OPERABLE to ensure that no single instrument failure can preclude HPCS initiation. Refer to LCO 3.5.1 and LCO 3.5.2 for HPCS Applicability Bases.

3.b. Drywell Pressure — High

High pressure in the drywell could indicate a break in the RCPB. The HPCS System and associated DG are initiated upon receipt of the Drywell Pressure — High Function in order to minimize the possibility of fuel damage. The core cooling function of the ECCS, along with the scram action of the RPS, ensures that the fuel peak cladding temperature remains below the limits of 10 CFR 50.46.

Drywell Pressure — High signals are initiated from four pressure switches that sense drywell pressure. The Allowable Value was selected to be as low as possible and be indicative of a LOCA inside primary containment.

The Drywell Pressure — High Function is required to be OPERABLE when HPCS is required to be OPERABLE in conjunction with times when the primary containment is required to be OPERABLE. Thus, four channels of the HPCS Drywell Pressure — High Function are required to be OPERABLE in MODES 1, 2, and 3, to ensure that no single instrument failure can preclude ECCS initiation. In MODES 4 and 5, the Drywell Pressure — High Function is not required since there is insufficient energy in the reactor to pressurize the drywell to the Drywell Pressure — High Functions setpoint. Refer to LCO 3.5.1 for the Applicability Bases for the HPCS System.

3.c. Reactor Vessel Water Level — High, Level 8

High RPV water level indicates that sufficient cooling water inventory exists in the reactor vessel such that there is no danger to the fuel. Therefore, the Level 8 signal is used to close the HPCS injection valve to prevent overflow into the main steam lines (MSLs). The Reactor Vessel Water

(continued)

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APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

3.c. Reactor Vessel Water Level — High, Level 8 (continued)

Level — High, Level 8 Function for HPCS isolation is not credited in the accident analysis. It is retained since it is a potentially significant contributor to risk.

Reactor Vessel Water Level — High, Level 8 signals for HPCS are initiated from two level transmitters from the narrow range water level measurement instrumentation. The Reactor Vessel Water Level — High, Level 8 Allowable Value is chosen to isolate flow from the HPCS System prior to water overflowing into the MSLs.

Two channels of Reactor Vessel Water Level — High, Level 8 Function are only required to be OPERABLE when HPCS is required to be OPERABLE to ensure that no single instrument failure can preclude HPCS initiation. Refer to LCO 3.5.1 and LCO 3.5.2 for HPCS Applicability Bases.

3.d, 3.e. HPCS Pump Discharge Pressure — High (Bypass) and HPCS System Flow Rate — Low (Bypass)

The minimum flow instruments are provided to protect the HPCS pump from overheating when the pump is operating and the associated injection valve is not sufficiently open. The minimum flow line valve is opened when low flow and high pump discharge pressure are sensed, and the valve is automatically closed when the flow rate is adequate to protect the pump or the discharge pressure is low (indicating the HPCS pump is not operating). The HPCS System Flow Rate — Low (Bypass) and HPCS Pump Discharge Pressure — High Functions are assumed to be OPERABLE and capable of closing the minimum flow valve to ensure that the ECCS flow assumed during the transients and accidents analyzed in References 1, 2, and 3 are met. The core cooling function of the ECCS, along with the scram action of the RPS, ensures that the fuel peak cladding temperature remains below the limits of 10 CFR 50.46.

One flow switch is used to detect the HPCS System's flow rate. The logic is arranged such that the switch causes the minimum flow valve to open, provided the HPCS pump discharge pressure, sensed by another switch, is high enough

(continued)

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APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

3.d, 3.e. HPCS Pump Discharge Pressure — High (Bypass) and HPCS System Flow Rate — Low (Bypass) (continued)

(indicating the pump is operating). The logic will close the minimum flow valve once the closure setpoint is exceeded. (The valve will also close upon HPCS pump discharge pressure decreasing below the setpoint.)

The HPCS System Flow Rate — Low (Bypass) Allowable Values are high enough to ensure that pump flow rate is sufficient to protect the pump, yet low enough to ensure that the closure of the minimum flow valve is initiated to allow full flow into the core. The HPCS Pump Discharge Pressure — High (Bypass) Allowable Value is set high enough to ensure that the valve will not be open when the pump is not operating.

One channel of each Function is required to be OPERABLE when the HPCS is required to be OPERABLE. Refer to LCO 3.5.1 and LCO 3.5.2 for HPCS Applicability Bases.

3.f. Manual Initiation

The Manual Initiation push button channel introduces a signal into the HPCS logic to provide manual initiation capability and is redundant to the automatic protective instrumentation. There is one push button for the HPCS System.

The Manual Initiation Function is not assumed in any accident or transient analyses in the UFSAR. However, the Function is retained for overall redundancy and diversity of the HPCS function as required by the NRC in the plant licensing basis.

There is no Allowable Value for this Function since the channel is mechanically actuated based solely on the position of the push button. One channel of the Manual Initiation Function is only required to be OPERABLE when the HPCS System is required to be OPERABLE. Refer to LCO 3.5.1 and LCO 3.5.2 for HPCS Applicability Bases.

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BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

Automatic Depressurization System

4.a, 5.a. Reactor Vessel Water Level — Low Low Low, Level 1

Low RPV water level indicates that the capability to cool the fuel may be threatened. Should RPV water level decrease too far, fuel damage could result. Therefore, ADS receives one of the signals necessary for initiation from this Function. The Reactor Vessel Water Level — Low Low Low, Level 1 is one of the Functions assumed to be OPERABLE and capable of initiating the ADS during the accidents analyzed in Reference 2. The core cooling function of the ECCS, along with the scram action of the RPS, ensures that the fuel peak cladding temperature remains below the limits of 10 CFR 50.46.

Reactor Vessel Water Level — Low Low Low, Level 1 signals are initiated from four differential pressure transmitters that sense the difference between the pressure due to a constant column of water (reference leg) and the pressure due to the actual water level (variable leg) in the vessel. The Reactor Vessel Water Level — Low Low Low, Level 1 Allowable Value is chosen high enough to allow time for the low pressure core spray and injection systems to initiate and provide adequate cooling.

Four channels of Reactor Vessel Water Level — Low Low Low, Level 1 Function are only required to be OPERABLE when ADS is required to be OPERABLE to ensure that no single instrument failure can preclude ADS initiation. (Two channels input to ADS trip system A while the other two channels input to ADS trip system B). Refer to LCO 3.5.1 for ADS Applicability Bases.

4.b, 5.b. Drywell Pressure — High

High pressure in the drywell could indicate a break in the RCPB. Therefore, ADS receives one of the signals necessary for initiation from this Function in order to minimize the possibility of fuel damage. The Drywell Pressure — High is assumed to be OPERABLE and capable of initiating the ADS during the accidents analyzed in Reference 2. The core cooling function of the ECCS, along with the scram action of the RPS, ensures that the fuel peak cladding temperature remains below the limits of 10 CFR 50.46.

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APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

4.b, 5.b. Drywell Pressure—High (continued)

Drywell Pressure—High signals are initiated from four pressure switches that sense drywell pressure. The Allowable Value was selected to be as low as possible and be indicative of a LOCA inside primary containment.

Four channels of Drywell Pressure—High Function are only required to be OPERABLE when ADS is required to be OPERABLE to ensure that no single instrument failure can preclude ADS initiation. (Two channels input to ADS trip system A while the other two channels input to ADS trip system B.) Refer to LCO 3.5.1 for ADS Applicability Bases.

4.c, 5.c. ADS Initiation Timer

The purpose of the ADS Initiation Timer is to delay depressurization of the reactor vessel to allow the HPCS System time to maintain reactor vessel water level. Since the rapid depressurization caused by ADS operation is one of the most severe transients on the reactor vessel, its occurrence should be limited. By delaying initiation of the ADS Function, the operator is given the chance to monitor the success or failure of the HPCS System to maintain water level, and then to decide whether or not to allow ADS to initiate, to delay initiation further by recycling the timer, or to inhibit initiation permanently. The ADS Initiation Timer Function is assumed to be OPERABLE for the accident analyses of Reference 2 that require ECCS initiation and assume failure of the HPCS System.

There are two ADS Initiation Timer relays, one in each of the two ADS trip systems. The Allowable Value for the ADS Initiation Timer is chosen to be short enough so that there is still time after depressurization for the low pressure ECCS subsystems to provide adequate core cooling.

Two channels of the ADS Initiation Timer Function are only required to be OPERABLE when the ADS is required to be OPERABLE to ensure that no single instrument failure can preclude ADS initiation. (One channel inputs to ADS trip system A while the other channel inputs to ADS trip system B.) Refer to LCO 3.5.1 for ADS Applicability Bases.

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APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

4.d, 5.d. Reactor Vessel Water Level—Low, Level 3 (Confirmatory)

The Reactor Vessel Water Level—Low, Level 3 Function (Confirmatory) is used by the ADS only as a confirmatory low water level signal. ADS receives one of the signals necessary for initiation from Reactor Vessel Water Level—Low Low Low, Level 1 signals. In order to prevent spurious initiation of the ADS due to spurious Level 1 signals, a Level 3 signal must also be received before ADS initiation commences.

Reactor Vessel Water Level—Low, Level 3 (Confirmatory) signals are initiated from two differential pressure transmitters that sense the difference between the pressure due to a constant column of water (reference leg) and the pressure due to the actual water level (variable leg) in the vessel. The Allowable Value for Reactor Vessel Water Level—Low, Level 3 (Confirmatory)is selected at the RPS Level 3 scram Allowable Value for convenience. Refer to LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," for Bases discussion of this Function.

Two channels of Reactor Vessel Water Level—Low, Level 3 (Confirmatory) Function are only required to be OPERABLE when the ADS is required to be OPERABLE to ensure that no single instrument failure can preclude ADS initiation. (One channel inputs to ADS trip system A while the other channel inputs to ADS trip system B.) Refer to LCO 3.5.1 for ADS Applicability Bases.

4.e, 4.f, 5.e. LPCS and LPCI Pump Discharge Pressure—High

The Pump Discharge Pressure—High signals from the LPCS and LPCI pumps (indicating that the associated pump is running) are used as permissives for ADS initiation, indicating that there is a source of low pressure cooling water available once the ADS has depressurized the vessel. Pump Discharge Pressure—High is one of the Functions assumed to be OPERABLE and capable of permitting ADS initiation during the events analyzed in References 2 and 3 with an assumed HPCS failure. For these events, the ADS depressurizes the reactor vessel so that the low pressure ECCS can perform the

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APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

4.e, 4.f, 5.e. LPCS and LPCI Pump Discharge Pressure—High (continued)

core cooling functions. This core cooling function of the ECCS, along with the scram action of the RPS, ensures that the fuel peak cladding temperature remains below the limits of 10 CFR 50.46.

Pump discharge pressure signals are initiated from eight pressure switches, two on the discharge side of each of the four low pressure ECCS pumps. In order to generate an ADS permissive in one trip system, it is necessary that only one pump (both channels for the pump) indicate the high discharge pressure condition. The Pump Discharge Pressure—High Allowable Value is less than the pump discharge pressure when the pump is operating in a full flow mode, and high enough to avoid any condition that results in a discharge pressure permissive when the LPCS and LPCI pumps are aligned for injection and the pumps are not running. The actual operating point of this Function is not assumed in any transient or accident analysis.

Eight channels of LPCS and LPCI Pump Discharge Pressure—High Function (two LPCS and two LPCI A channels input to ADS trip system A, while two LPCI B and two LPCI C channels input to ADS trip system B) are only required to be OPERABLE when the ADS is required to be OPERABLE to ensure that no single instrument failure can preclude ADS initiation. Refer to LCO 3.5.1 for ADS Applicability Bases.

4.g, 5.f. ADS Drywell Pressure Bypass Timer

One of the signals required for ADS initiation is Drywell Pressure—High. However, if the event requiring ADS initiation occurs outside the drywell (for example, main steam line break outside primary containment), a high drywell pressure signal may never be present. Therefore, the ADS Drywell Pressure Bypass Timer is used to bypass the Drywell Pressure—High Function after a certain time period has elapsed. The ADS Drywell Pressure Bypass Timer Function instrumentation is retained in the TS because ADS is part of the primary success path for mitigation of a DBA.

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APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

4.g, 5.f. ADS Drywell Pressure Bypass Time (continued)

There are four ADS Drywell Pressure Bypass Timer relays, two in each of the two ADS trip systems. The Allowable Value for the ADS Timer is chosen to be short enough that so that there is still time after depressurization for the low pressure ECCS subsystems to provide adequate core cooling.

Four channels of the ADS Drywell Pressure Bypass Timer Function are only required to be OPERABLE when the ADS is required to be OPERABLE to ensure that no single instrument failure can preclude ADS initiation. Refer to LCO 3.5.1 for ADS Applicability Bases.

4.h, 5.g. Manual Initiation

The Manual Initiation push button channels introduce signals into the ADS logic to provide manual initiation capability and are redundant to the automatic protective instrumentation. There are two push buttons for each ADS trip system (total of four).

The Manual Initiation Function is not assumed in any accident or transient analyses in the UFSAR. However, the Function is retained for overall redundancy and diversity of the ADS function as required by the NRC in the plant licensing basis.

There is no Allowable Value for this Function since the channel is mechanically actuated based solely on the position of the push buttons. Four channels of the Manual Initiation Function (two channels per ADS trip system) are only required to be OPERABLE when the ADS is required to be OPERABLE. Refer to LCO 3.5.1 for ADS Applicability Bases.

ACTIONS

A Note has been provided to modify the ACTIONS related to ECCS instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each

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ACTIONS (continued)

additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable ECCS instrumentation channels provide appropriate compensatory measures for separate inoperable Condition entry for each inoperable ECCS instrumentation channel.

A.1

Required Action A.1 directs entry into the appropriate Condition referenced in Table 3.3.5.1-1. The applicable Condition specified in the Table is Function dependent. Each time a channel is discovered to be inoperable, Condition A is entered for that channel and provides for transfer to the appropriate subsequent Condition.

B.1, B.2, and B.3

Required Actions B.1 and B.2 are intended to ensure that appropriate actions are taken if multiple, inoperable, untripped channels within the same Function (or in some cases, within the same variable) result in redundant automatic initiation capability being lost for the feature(s). Loss of redundant automatic capability for the low pressure ECCS injection feature in both divisions occurs when the initiation capability is available to less than two pumps from any single variable. Required Action B.1 features would be those that are initiated by Functions 1.a, 1.b, 2.a, and 2.b (i.e., low pressure ECCS and associated DGs). The Required Action B.2 feature would be HPCS System and associated DG. For Required Action B.1, redundant automatic initiation capability is lost if either (a) one or more Function 1.a channels and one or more Function 2.a channels are inoperable and untripped, or (b) one or more Function 1.b channels and one or more Function 2.b channels are inoperable and untripped. For Divisions 1 and 2, since each inoperable channel would have Required Action B.1 applied separately (refer to ACTIONS Note), each inoperable channel would only require the affected portion of the associated Division of low pressure ECCS and DG to be declared inoperable. However, since channels in both Divisions are inoperable and untripped, and the Completion Times started concurrently for the channels in both

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ACTIONS

B.1, B.2, and B.3 (continued)

Divisions, this results in the affected portions in both Divisions of ECCS and DG being concurrently declared inoperable. For Required Action B.2, redundant automatic initiation capability (i.e., loss of automatic start capability for either Functions 3.a or 3.b) is lost if two Function 3.a or two Function 3.b parallel contacts (channels) are inoperable and untripped in the same trip system.

In this situation (loss of redundant automatic initiation capability), the 24 hour allowance of Required Action B.3 is not appropriate and the feature(s) associated with the inoperable, untripped channels must be declared inoperable within 1 hour. As noted (Note 1 to Required Action B.1 and Required Action B.2), the two Required Actions are only applicable in MODES 1, 2, and 3. In MODES 4 and 5, the specific initiation time of the ECCS is not assumed and the probability of a LOCA is lower. Thus, a total loss of initiation capability for 24 hours (as allowed by Required Action B.3) is allowed during MODES 4 and 5. Notes are also provided (Note 2 to Required Action B.1 and Required Action B.2) to delineate which Required Action is applicable for each Function that requires entry into Condition B if an associated channel is inoperable. This ensures that the proper loss of initiation capability check is performed.

The Completion Time is intended to allow the operator time to evaluate and repair any discovered inoperabilities. This Completion Time also allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." For Required Action B.1, the Completion Time only begins upon discovery that a redundant feature in both Divisions (e.g., any Division 1 ECCS and Division 2 ECCS) cannot be automatically initiated due to inoperable, untripped channels within the same variable as described in the paragraph above. For Required Action B.2, the Completion Time only begins upon discovery that the HPCS System cannot be automatically initiated due to two inoperable, untripped channels (parallel contacts) for the associated Function in the same trip system. The 1 hour Completion Time from discovery of loss of initiation capability is acceptable because it minimizes risk while allowing time for restoration or tripping of channels.

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ACTIONS

B.1, B.2, and B.3 (continued)

Because of the diversity of sensors available to provide initiation signals and the redundancy of the ECCS design, an allowable out of service time of 24 hours has been shown to be acceptable (Ref. 4) to permit restoration of any inoperable channel to OPERABLE status. If the inoperable channel cannot be restored to OPERABLE status within the allowable out of service time, the channel must be placed in the tripped condition per Required Action B.3. Placing the inoperable channel in trip would conservatively compensate for the inoperability, restore capability to accommodate a single failure, and allow operation to continue. Alternately, if it is not desired to place the channel in trip (e.g., as in the case where placing the inoperable channel in trip would result in an initiation), Condition G must be entered and its Required Action taken.

C.1 and C.2

Required Action C.1 is intended to ensure that appropriate actions are taken if multiple, inoperable channels within the same Function (or in some cases, within the same variable) result in redundant automatic initiation capability being lost for the feature(s). Loss of redundant automatic initiation capability for the low pressure ECCS injection feature in both divisions occurs when the initiation capability is available to less than two pumps from any single variable.

Required Action C.1 features would be those that are initiated by Functions 1.c, and 2.c (i.e., low pressure ECCS). For Functions 1.c and 2.c, redundant automatic initiation capability is lost if the Function 1.c and Function 2.c channels are inoperable. Since each inoperable channel would have Required Action C.1 applied separately (refer to ACTIONS Note), each inoperable channel would only require the affected portion of the associated Division to be declared inoperable. However, since channels in both Divisions are inoperable, and the Completion Times started concurrently for the channels in both Divisions, this results in the affected portions in both Divisions being concurrently declared inoperable. For Functions 1.c

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ACTIONS

C.1 and C.2 (continued)

and 2.c, the affected portions of the Division are LPCI A and LPCI B, respectively. In addition, the specific inoperability of these Functions should also be evaluated for impact on the DGs.

In this situation (loss of redundant automatic initiation capability), the 24 hour allowance of Required Action C.2 is not appropriate and the feature(s) associated with the inoperable channels must be declared inoperable within 1 hour. As noted (Note 1), the Required Action is only applicable in MODES 1, 2, and 3. In MODES 4 and 5, the specific initiation time of the ECCS is not assumed and the probability of a LOCA is lower. Thus, a total loss of automatic initiation capability for 24 hours (as allowed by Required Action C.2) is allowed during MODES 4 and 5.

Note 2 states that Required Action C.1 is only applicable for Functions 1.c and 2.c. The Required Action is not applicable to Functions 1.h, 2.g, and 3.f (which also require entry into this Condition if a channel in these Functions is inoperable), since they are the Manual Initiation Functions and are not assumed in any accident or transient analysis. Thus, a total loss of manual initiation capability for 24 hours (as allowed by Required Action C.2) is allowed. Required Action C.1 is also not applicable to Function 3.c (which also requires entry into this Condition if a channel in this Function is inoperable), since the loss of the Function was considered during the development of Reference 4 and considered acceptable for the 24 hours allowed by Required Action C.2.

The Completion Time is intended to allow the operator time to evaluate and repair any discovered inoperabilities. This Completion Time also allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." For Required Action C.1, the Completion Time only begins upon discovery that the same feature in both Divisions (i.e., any Division 1 ECCS and Division 2 ECCS) cannot be automatically initiated due to inoperable channels within the same variable as described in the paragraph above. The 1 hour Completion Time from discovery of loss of initiation capability is acceptable because it minimizes risk while allowing time for restoration of channels.

(continued)

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ACTIONS

C.1 and C.2 (continued)

Because of the diversity of sensors available to provide initiation signals and the redundancy of the ECCS design, an allowable out of service time of 24 hours has been shown to be acceptable (Ref. 4) to permit restoration of any inoperable channel to OPERABLE status. If the inoperable channel cannot be restored to OPERABLE status within the allowable out of service time, Condition G must be entered and its Required Action taken. The Required Actions do not allow placing the channel in trip since this action would either cause the initiation or would not necessarily result in a safe state for the channel in all events.

D.1, D.2, D.3, and D.4

Required Action D.1 is intended to ensure that appropriate actions are taken if multiple, inoperable, channels within the LPCS and LPCI Pump Discharge Flow — Low (Bypass) Functions, the Injection Line Pressure — Low (Injection Permissive), and the Reactor Steam Dome Pressure — Low (Injection Permissive) Functions result in redundant automatic initiation capability being lost for the feature(s). Loss of redundant automatic initiation capability for the low pressure ECCS injection feature in both divisions occurs when the initiation capability is available to less than two pumps from any single variable. For the purposes of this Condition, the injection permissives on Reactor Steam Dome Pressure — Low and Injection Line Pressure — Low are considered the same variable. Similarly, Functions 1.e, 1.f, and 2.e are all minimum flow functions and considered the same variable.

For Required Action D.1, the features would be those that are initiated by Functions 1.d, 1.e, 1.f, 1.g, 2.d, 2.e, and 2.f (e.g., low pressure ECCS). Redundant automatic initiation capability is lost if three of the four channels associated with Functions 1.e, 1.f, and 2.e are inoperable. For Function 1.d, redundant automatic initiation capability is lost if two Function 1.d channels are inoperable concurrent with either two inoperable Function 2.d channels or one inoperable Function 2.f channel. For Function 2.d, redundant automatic initiation capability is lost if two Function 2.d channels are inoperable concurrent with two

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ACTIONS

D.1, D.2, D.3, and D.4 (continued)

inoperable 1.d channels or one inoperable 1.g channel. For Function 1.g, redundant automatic initiation capability is lost if two Function 1.g channels are inoperable concurrent with either two inoperable Function 2.d channels or one inoperable Function 2.f channel. For Function 2.f, redundant automatic initiation capability is lost if two Function 2.f channels are inoperable concurrent with two inoperable 1.d channels or one inoperable 1.g channel. Since each inoperable channel would have Required Action D.1 applied separately (refer to ACTIONS Note), each inoperable channel would only require the affected low pressure ECCS pump to be declared inoperable. However, since channels for more than one low pressure ECCS pump are inoperable, and the Completion Times started concurrently for the channels of the low pressure ECCS pumps, this results in the affected low pressure ECCS pumps being concurrently declared inoperable.

In this situation (loss of redundant automatic initiation capability), the Completion Times of Required Actions D.3 and D.4 are not appropriate and the feature(s) associated with each inoperable channel must be declared inoperable within 1 hour after discovery of loss of initiation capability for feature(s) in both Divisions. As noted (Note 1 to Required Action D.1), Required Action D.1 is only applicable in MODES 1, 2, and 3. In MODES 4 and 5, the specific initiation time of the low pressure ECCS is not assumed and the probability of a LOCA is lower. Thus, a total loss of initiation capability for 7 days for Functions 1.e, 1.f, and 2.e (as allowed by Required Action D.4) is allowed during MODES 4 and 5. (This Condition is not entered when Functions 1.d, 1.g, 2.d or 2.f are inoperable in MODES 4 and 5.) A Note is also provided (Note 2 to Required Action D.1) to delineate that Required Action D.1 is only applicable to low pressure ECCS Functions. Required Action D.1 is not applicable to HPCS Functions 3.d and 3.e since the loss of one channel results in a loss of the Function (one-out-of-one logic). This loss was considered during the development of Reference 4 and considered acceptable for the 7 days allowed by Required Action D.4. Required Action D.2 is intended to ensure that appropriate

(continued)

BASES

ACTIONS

D.1, D.2, D.3, and D.4 (continued)

actions are taken if multiple, inoperable channels within the Reactor Steam Dome Pressure—Low (Injection Permissive) Function result in automatic initiation capability being lost for the features in one division. For Required Action D.2, the features would be those that are initiated by Functions 1.d and 2.d (e.g., low pressure ECCS). For Functions 1.d and 2.d, automatic initiation capability is lost in one division if two Function 1.d or two Function 2.d channels are inoperable. In this situation, (loss of automatic initiation capability), the 7 day allowance of Required Action D.4 is not appropriate and the features associated with the inoperable channels must be declared inoperable within 24 hours after discovery of loss of initiation capability for features in one division. For Functions 1.g and 2.f, an allowable out of service time of 24 hours is provided by Required Action D.3

The Completion Time is intended to allow the operator time to evaluate and repair any discovered inoperabilities. This Completion Time also allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." For Required Action D.1, the Completion Time only begins upon discovery that three channels of the Pump Discharge Flow—Low (Bypass) Function cannot be automatically initiated due to inoperable channels or upon discovery of a loss of redundant initiation capability for the Reactor Steam Dome Pressure—Low (Injection Permissive) and Injection Line Pressure—Low (Injection Permissive) Functions (as described above). The 1 hour Completion Time from discovery of loss of initiation capability is acceptable because it minimizes risk while allowing time for restoration of channels. For Required Action D.2, the Completion Time only begins upon discovery that two Function 1.d or two Function 2.d channels cannot be automatically initiated due to inoperable channels. The 24 hour Completion Time from discovery of loss of initiation capability for features in one division is acceptable because of the redundancy of the ECCS design, as shown in the reliability analysis of Reference 4.

If the instrumentation that controls the pump minimum flow valve is inoperable such that the valve will not automatically open, extended pump operation with no injection path available could lead to pump overheating and

(continued)

BASES

ACTIONS

D.1, D.2, D.3, and D.4 (continued)

failure. If there were a failure of the instrumentation such that the valve would not automatically close, a portion of the pump flow could be diverted from the reactor injection path, causing insufficient core cooling. These consequences can be averted by the operator's manual control of the valve, which would be adequate to maintain ECCS pump protection and required flow. Furthermore, other ECCS pumps would be sufficient to complete the assumed safety function if no additional single failure were to occur. If a Reactor Vessel Pressure — Low (Injection Permissive) Function channel is inoperable, another channel exists to ensure the injection valves in the ECCS division can still open. The 7 day Completion Time of Required Action D.4 to restore the inoperable channel to OPERABLE status is reasonable based on the remaining capability of the associated ECCS subsystems, the redundancy available in the ECCS design, and the low probability of a DBA occurring during the allowed out of service time. If the inoperable channel cannot be restored to OPERABLE status within the allowable out of service time, Condition G must be entered and its Required Action taken. The Required Actions do not allow placing the channel in trip since this action would not necessarily result in a safe state for the channel in all events.

E.1 and E.2

Required Action E.1 is intended to ensure that appropriate actions are taken if multiple, inoperable, untripped channels within similar ADS trip system Functions result in automatic initiation capability being lost for the ADS. Automatic initiation capability is lost if either (a) one or more Function 4.a channels and one or more Function 5.a channels are inoperable and untripped, (b) one or more Function 4.b channels and one or more Function 5.b channels are inoperable and untripped, or (c) one Function 4.d channel and one Function 5.d channel are inoperable and untripped.

In this situation (loss of automatic initiation capability), the 96 hour or 8 day allowance, as applicable, of Required Action E.2 is not appropriate, and all ADS valves must be declared inoperable within 1 hour after discovery of loss of ADS initiation capability in both trip systems.

(continued)

BASES

ACTIONS

E.1 and E.2 (continued)

The Completion Time is intended to allow the operator time to evaluate and repair any discovered inoperabilities. This Completion Time also allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." For Required Action E.1, the Completion Time only begins upon discovery that the ADS cannot be automatically initiated due to inoperable, untripped channels within similar ADS trip system Functions as described in the paragraph above. The 1 hour Completion Time from discovery of loss of initiation capability is acceptable because it minimizes risk while allowing time for restoration or tripping of channels.

Because of the diversity of sensors available to provide initiation signals and the redundancy of the ECCS design, an allowable out of service time of 8 days has been shown to be acceptable (Ref. 4) to permit restoration of any inoperable channel to OPERABLE status if both HPCS and RCIC are OPERABLE. If either HPCS or RCIC is inoperable, the time is shortened to 96 hours. If the status of HPCS or RCIC changes such that the Completion Time changes from 8 days to 96 hours, the 96 hours begins upon discovery of HPCS or RCIC inoperability. However, total time for an inoperable, untripped channel cannot exceed 8 days. If the status of HPCS or RCIC changes such that the Completion Time changes from 96 hours to 8 days, the "time zero" for beginning the 8 day "clock" begins upon discovery of the inoperable, untripped channel. If the inoperable channel cannot be restored to OPERABLE status within the allowable out of service time, the channel must be placed in the tripped condition per Required Action E.2. Placing the inoperable channel in trip would conservatively compensate for the inoperability, restore capability to accommodate a single failure, and allow operation to continue. Alternately, if it is not desired to place the channel in trip (e.g., as in the case where placing the inoperable channel in trip would result in an initiation), Condition G must be entered and its Required Action taken.

(continued)

BASES

ACTIONS (continued)

F.1 and F.2

Required Action F.1 is intended to ensure that appropriate actions are taken if multiple, inoperable channels within similar ADS trip system Functions result in automatic initiation capability being lost for the ADS. Automatic initiation capability is lost if either (a) one Function 4.c channel and one Function 5.c channel are inoperable, (b) one or more Function 4.e channels and one or more Function 5.e channels are inoperable, (c) one or more Function 4.f channels and one or more Function 5.e channels are inoperable, or (d) one or more Function 4.g channels and one or more Function 5.f channels are inoperable.

In this situation (loss of automatic initiation capability), the 96 hour or 8 day allowance, as applicable, of Required Action F.2 is not appropriate, and all ADS valves must be declared inoperable within 1 hour after discovery of loss of ADS initiation capability in both trip systems. The Note to Required Action F.1 states that Required Action F.1 is only applicable for Functions 4.c, 4.e, 4.f, 4.g, 5.c, 5.e, and 5.f. Required Action F.1 is not applicable to Functions 4.h and 5.g (which also require entry into this Condition if a channel in these Functions is inoperable), since they are the Manual Initiation Functions and are not assumed in any accident or transient analysis. Thus, a total loss of manual initiation capability for 96 hours or 8 days (as allowed by Required Action F.2) is allowed.

The Completion Time is intended to allow the operator time to evaluate and repair any discovered inoperabilities. This Completion Time also allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." For Required Action F.1, the Completion Time only begins upon discovery that the ADS cannot be automatically initiated due to inoperable channels within similar ADS trip system Functions, as described in the paragraph above. The 1 hour Completion Time from discovery of loss of initiation capability is acceptable because it minimizes risk while allowing time for restoration or tripping of channels.

Because of the diversity of sensors available to provide initiation signals and the redundancy of the ECCS design, an allowable out of service time of 8 days has been shown to be acceptable (Ref. 4) to permit restoration of any inoperable

(continued)

BASES

ACTIONS

F.1 and F.2 continued)

channel to OPERABLE status if both HPCS and RCIC are OPERABLE (Required Action F.2). If either HPCS or RCIC is inoperable, the time is reduced to 96 hours. If the status of HPCS or RCIC changes such that the Completion Time changes from 8 days to 96 hours, the 96 hours begins upon discovery of HPCS or RCIC inoperability. However, total time for an inoperable channel cannot exceed 8 days. If the status of HPCS or RCIC changes such that the Completion Time changes from 96 hours to 8 days, the "time zero" for beginning the 8 day "clock" begins upon discovery of the inoperable channel. If the inoperable channel cannot be restored to OPERABLE status within the allowable out of service time, Condition G must be entered and its Required Action taken. The Required Actions do not allow placing the channel in trip since this action would not necessarily result in a safe state for the channel in all events.

G.1

With any Required Action and associated Completion Time not met, the associated feature(s) may be incapable of performing the intended function and the supported feature(s) associated with the inoperable untripped channels must be declared inoperable immediately.

SURVEILLANCE REQUIREMENTS

As noted at the beginning of the SRs, the SRs for each ECCS instrumentation Function are found in the SRs column of Table 3.3.5.1-1.

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours as follows: (a) for Functions 3.c, 3.d, 3.e, and 3.f; and (b) for Functions other than 3.c, 3.d, 3.e, and 3.f provided the associated Function or redundant Function maintains ECCS initiation capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. This Note is based on the reliability analysis

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

(Ref. 4) assumption of the average time required to perform channel Surveillance. That analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that the ECCS will initiate when necessary.

SR 3.3.5.1.1

Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff, based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limit.

The Frequency is based upon operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the channels required by the LCO.

SR 3.3.5.1.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the channel will perform the intended function.

Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.5.1.2 (continued)

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

SR 3.3.5.1.3 and SR 3.3.5.1.4

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

The Frequency of SR 3.3.5.1.3 is based upon the assumption of a 92 day calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis. The Frequency of SR 3.3.5.1.4 is based upon the assumption of a 24 month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.5.1.5

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

The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for unplanned transients if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 24 month Frequency.

(continued)

BASES (continued)

REFERENCES	1.	UFSAR, Section 5.2.
	2.	UFSAR, Section 6.3.
	3.	UFSAR, Chapter 15.
	4.	NEDC-30936-P-A, "BWR Owners' Group Technical Specification Improvement Analyses for ECCS Actuation Instrumentation, Parts 1 and 2," December 1988.

B 3.3 INSTRUMENTATION

B 3.3.5.2 Reactor Core Isolation Cooling (RCIC) System Instrumentation

BASES

BACKGROUND

The purpose of the RCIC System instrumentation is to initiate actions to ensure adequate core cooling when the reactor vessel is isolated from its primary heat sink (the main condenser) and normal coolant makeup flow from the Reactor Feedwater System is insufficient or unavailable, such that RCIC System initiation occurs and maintains sufficient reactor water level precluding initiation of the low pressure Emergency Core Cooling Systems (ECCS) pumps. A more complete discussion of RCIC System operation is provided in the Bases of LCO 3.5.3, "RCIC System."

The RCIC System may be initiated by either automatic or manual means. Automatic initiation occurs for conditions of Reactor Vessel Water Level Low—Low, Level 2. The variable is monitored by four differential pressure transmitters that are connected to four trip units. The outputs of the trip units are connected to relays whose contacts are arranged in a one-out-of-two taken twice logic arrangement. The logic can also be initiated by use of a manual push button. Once initiated, the RCIC logic seals in and can be reset by the operator only when the reactor vessel water level signals have cleared.

The RCIC test line isolation valve is closed on a RCIC initiation signal to allow full system flow to the reactor vessel.

The RCIC System also monitors the water level in the condensate storage tank (CST), since there are two sources of water for RCIC operation. Reactor grade water in the CST is the normal source. Upon receipt of a RCIC initiation signal, the CST suction valve is automatically signaled to open (it is normally in the open position) unless the pump suction from the suppression pool valve is open. If the water level in the CST falls below a preselected level, first the suppression pool suction valve automatically opens and then the CST suction valve automatically closes. Two level switches are used to detect low water level in the CST. Either switch can cause the suppression pool suction valve to open. To prevent losing suction to the pump,

(continued)

BASES

BACKGROUND (continued)	the suction valves are interlocked so that one suction path must be open before the other automatically closes. The RCIC System provides makeup water to the reactor until the reactor vessel water level reaches the high water level (Level 8) trip (two-out-of-two logic), at which time the RCIC turbine steam inlet isolation valve closes (the injection valve also closes due to the closure of the RCIC turbine steam inlet isolation valve). The RCIC System restarts if vessel level again drops to the low level initiation point (Level 2).
APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	The function of the RCIC System, to provide makeup coolant to the reactor, is to respond to transient events. The RCIC System is not an Engineered Safety Feature System and no credit is taken in the safety analysis for RCIC System operation. Based on its contribution to the reduction of overall plant risk, however, the RCIC System, and therefore its instrumentation, meets Criterion 4 of 10 CFR 50.36(c)(2)(ii). Certain instrumentation Functions are retained for other reasons and are described below in the individual Functions discussion. The OPERABILITY of the RCIC System instrumentation is dependent on the OPERABILITY of the individual instrumentation channel Functions specified in Table 3.3.5.2-1. Each Function must have a required number of OPERABLE channels with their setpoints within the specified Allowable Values, where appropriate. The actual setpoint is calibrated consistent with applicable setpoint methodology assumptions. Allowable Values are specified for each RCIC System instrumentation Function specified in the Table. Nominal trip setpoints are specified in the setpoint calculations. The nominal setpoints are selected to ensure that the setpoints do not exceed the Allowable Value between CHANNEL CALIBRATIONS. Operation with a trip setpoint less conservative than the nominal trip setpoint, but within its Allowable Value, is acceptable. A channel is inoperable if its actual trip setpoint is not within its required Allowable Value.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

Trip setpoints are those predetermined values of output at which an action should take place. The setpoints are compared to the actual process parameter (e.g., reactor vessel water level), and when the measured output value of the process parameter exceeds the setpoint, the associated device (e.g., trip unit) changes state. The analytic limits (or design limits) are derived from the limiting values of the process parameters obtained from the safety analysis. The trip setpoints are determined from the analytic limits, corrected for defined process, calibration, and instrument errors. The Allowable Values are then determined, based on the trip setpoint values, by accounting for the calibration based errors. These calibration based errors are limited to reference accuracy, instrument drift, errors associated with measurement and test equipment, and calibration tolerance of loop components. The trip setpoints and Allowable Values determined in this manner provide adequate protection because instrument uncertainties, process effects, calibration tolerances, instrument drift, and severe environment errors (for channels that must function in harsh environments as defined by 10 CFR 50.49) are accounted for and appropriately applied for the instrumentation.

The individual Functions are required to be OPERABLE in MODE 1, and in MODES 2 and 3 with reactor steam dome pressure > 150 psig, since this is when RCIC is required to be OPERABLE. Refer to LCO 3.5.3 for Applicability Bases for the RCIC System.

The specific Applicable Safety Analyses, LCO, and Applicability discussions are listed below on a Function by Function basis.

1. Reactor Vessel Water Level — Low Low, Level 2

Low reactor pressure vessel (RPV) water level indicates that normal feedwater flow is insufficient to maintain reactor vessel water level and that the capability to cool the fuel may be threatened. Should RPV water level decrease too far, fuel damage could result. Therefore, the RCIC System is initiated at Level 2 to assist in maintaining water level above the top of the active fuel.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

<u>1. Reactor Vessel Water Level – Low Low, Level 2</u> (continued))

Reactor Vessel Water Level – Low Low, Level 2 signals are initiated from four differential pressure transmitters that sense the difference between the pressure due to a constant column of water (reference leg) and the pressure due to the actual water level (variable leg) in the vessel.

The Reactor Vessel Water Level – Low Low, Level 2 Allowable Value is set high enough such that for complete loss of feedwater flow, the RCIC System flow with high pressure core spray assumed to fail will be sufficient to avoid initiation of low pressure ECCS at Level 1.

Four channels of Reactor Vessel Water Level – Low Low, Level 2 Function are available and are required to be OPERABLE when RCIC is required to be OPERABLE to ensure that no single instrument failure can preclude RCIC initiation. Refer to LCO 3.5.3 for RCIC Applicability Bases.

<u>2. Reactor Vessel Water Level – High, Level 8</u>

High RPV water level indicates that sufficient cooling water inventory exists in the reactor vessel such that there is no danger to the fuel. Therefore, the Level 8 signal is used to close the RCIC turbine steam inlet isolation valve to prevent overflow into the main steam lines (MSLs). (The injection valve also closes due to the closure of the RCIC turbine steam inlet isolation valve.)

Reactor Vessel Water Level – High, Level 8 signals for RCIC are initiated from two differential pressure transmitters from the narrow range water level measurement instrumentation, which sense the difference between the pressure due to a constant column of water (reference leg) and the pressure due to the actual water level (variable leg) in the vessel.

The Reactor Vessel Water Level – High, Level 8 Allowable Value is high enough to preclude isolating the injection valve of the RCIC during normal operation, yet low enough to trip the RCIC System prior to water overflowing into the MSLs.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

2. Reactor Vessel Water Level — High, Level 8 (continued)

Two channels of Reactor Vessel Water Level — High, Level 8 Function are available and are required to be OPERABLE when RCIC is required to be OPERABLE to ensure that no single instrument failure can preclude RCIC initiation. Refer to LCO 3.5.3 for RCIC Applicability Bases.

3. Condensate Storage Tank Level — Low

Low level in the CST indicates the unavailability of an adequate supply of makeup water from this normal source. Normally the suction valve between the RCIC pump and the CST is open and, upon receiving a RCIC initiation signal, water for RCIC injection would be taken from the CST. However, if the water level in the CST falls below a preselected level, first the suppression pool suction valve automatically opens and then the CST suction valve automatically closes. This ensures that an adequate supply of makeup water is available to the RCIC pump. To prevent losing suction to the pump, the suction valves are interlocked so that the suppression pool suction valve must be open before the CST suction valve automatically closes.

Two level switches are used to detect low water level in the CST. The Condensate Storage Tank Level — Low Function Allowable Value is set high enough to ensure adequate pump suction head while water is being taken from the CST.

Two channels of Condensate Storage Tank Level — Low Function are available and are required to be OPERABLE when RCIC is required to be OPERABLE to ensure that no single instrument failure can preclude RCIC swap to suppression pool source. Refer to LCO 3.5.3 for RCIC Applicability Bases.

4. Manual Initiation

The Manual Initiation push button channel introduces a signal into the RCIC System initiation logic that is redundant to the automatic protective instrumentation and provides manual initiation capability. There is one push button channel for the RCIC System.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	4. Manual Initiation (continued)

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

4. Manual Initiation (continued)

The Manual Initiation Function is not assumed in any accident or transient analyses in the UFSAR. However, the Function is retained for overall redundancy and diversity of the RCIC function as required by the NRC in the plant licensing basis.

There is no Allowable Value for this Function since the channel is mechanically actuated based solely on the position of the push button. One channel of Manual Initiation is required to be OPERABLE when RCIC is required to be OPERABLE. Refer to LCO 3.5.3 for RCIC Applicability Bases.

ACTIONS

A Note has been provided to modify the ACTIONS related to RCIC System instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition discovered to be inoperable or not within limits will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable RCIC System instrumentation channels provide appropriate compensatory measures for separate inoperable channels. As such, a Note has been provided that allows separate Condition entry for each inoperable RCIC System instrumentation channel.

A.1

Required Action A.1 directs entry into the appropriate Condition referenced in Table 3.3.5.2-1 in the accompanying LCO. The applicable Condition referenced in the Table is Function dependent. Each time a channel is discovered to be inoperable, Condition A is entered for that channel and provides for transfer to the appropriate subsequent Condition.

(continued)

BASES

ACTIONS (continued)

B.1 and B.2

Required Action B.1 is intended to ensure that appropriate actions are taken if multiple, inoperable, untripped channels within the same Function result in a complete loss of automatic initiation capability for the RCIC System. In this case, automatic initiation capability is lost if two Function 1 parallel contacts (channels) in the same trip system are inoperable and untripped. In this situation (loss of automatic initiation capability), the 24 hour allowance of Required Action B.2 is not appropriate, and the RCIC System must be declared inoperable within 1 hour after discovery of loss of RCIC initiation capability.

The Completion Time is intended to allow the operator time to evaluate and repair any discovered inoperabilities. This Completion Time also allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." For Required Action B.1, the Completion Time only begins upon discovery that the RCIC System cannot be automatically initiated due to two inoperable, untripped Reactor Vessel Water Level – Low Low, Level 2 channels (parallel contacts) in the same trip system. The 1 hour Completion Time from discovery of loss of initiation capability is acceptable because it minimizes risk while allowing time for restoration or tripping of channels.

Because of the redundancy of sensors available to provide initiation signals and the fact that the RCIC System is not credited in any accident or transient analysis, an allowable out of service time of 24 hours has been shown to be acceptable (Ref. 1) to permit restoration of any inoperable channel to OPERABLE status. If the inoperable channel cannot be restored to OPERABLE status within the allowable out of service time, the channel must be placed in the tripped condition per Required Action B.2. Placing the inoperable channel in trip would conservatively compensate for the inoperability, restore capability to accommodate a single failure, and allow operation to continue. Alternately, if it is not desired to place the channel in trip (e.g., as in the case where placing the inoperable channel in trip would result in an initiation), Condition E must be entered and its Required Action taken.

(continued)

BASES

ACTIONS (continued)

C.1

A risk based analysis was performed and determined that an allowable out of service time of 24 hours (Ref. 1) is acceptable to permit restoration of any inoperable channel to OPERABLE status (Required Action C.1). A Required Action (similar to Required Action B.1), limiting the allowable out of service time if a loss of automatic RCIC initiation capability exists, is not required. This Condition applies to the Reactor Vessel Water Level — High, Level 8 Function, whose logic is arranged such that any inoperable channel will result in a loss of automatic RCIC initiation (high water level trip) capability. As stated above, this loss of automatic RCIC initiation (high water level trip) capability was analyzed and determined to be acceptable. This Condition also applies to the Manual Initiation Function. Since this Function is not assumed in any accident or transient analysis, a total loss of manual initiation capability (Required Action C.1) for 24 hours is allowed. The Required Action does not allow placing a channel in trip since this action would not necessarily result in the safe state for the channel in all events.

D.1, D.2.1, and D.2.2

Required Action D.1 is intended to ensure that appropriate actions are taken if multiple inoperable, untripped channels within the same Function result in automatic component initiation (RCIC source swapover) capability being lost for the feature(s). For Required Action D.1, the RCIC System is the only associated feature. In this case, automatic component initiation (RCIC source swapover) capability is lost if two Function 3 channels are inoperable and untripped. In this situation (loss of automatic suction swap), the 24 hour allowance of Required Actions D.2.1 and D.2.2 is not appropriate, and the RCIC System must be declared inoperable within 1 hour from discovery of loss of RCIC initiation capability. As noted, Required Action D.1 is only applicable if the RCIC pump suction is not aligned to the suppression pool since, if aligned, the Function is already performed.

(continued)

BASES

ACTIONS

D.1, D.2.1, and D.2.2 (continued)

The Completion Time is intended to allow the operator time to evaluate and repair any discovered inoperabilities. This Completion Time also allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." For Required Action D.1, the Completion Time only begins upon discovery that the RCIC System cannot be automatically aligned to the suppression pool due to two inoperable, untripped channels in the same Function. The 1 hour Completion Time from discovery of loss of initiation capability is acceptable because it minimizes risk while allowing time for restoration or tripping of channels.

Because of the redundancy of sensors available to provide initiation signals and the fact that the RCIC System is not assumed in any accident or transient analysis, an allowable out of service time of 24 hours has been shown to be acceptable (Ref. 1) to permit restoration of any inoperable channel to OPERABLE status. If the inoperable channel cannot be restored to OPERABLE status within the allowable out of service time, the channel must be placed in the tripped condition per Required Action D.2.1, which performs the intended function of the channel (shifting the suction source to the suppression pool). Alternatively, Required Action D.2.2 allows the manual alignment of the RCIC suction to the suppression pool, which also performs the intended function. If Required Action D.2.1 or D.2.2 is performed, measures should be taken to ensure that the RCIC System piping remains filled with water. If it is not desired to perform Required Actions D.2.1 and D.2.2 (e.g., as in the case where shifting the suction source could drain down the RCIC suction piping), Condition E must be entered and its Required Action taken.

E.1

With any Required Action and associated Completion Time not met, the RCIC System may be incapable of performing the intended function, and the RCIC System must be declared inoperable immediately.

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS (continued)

As noted in the beginning of the SRs, the SRs for each RCIC System instrumentation Function are found in the SRs column of Table 3.3.5.2-1.

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed as follows: (a) for up to 6 hours for Functions 2 and 4; and (b) for up to 6 hours for Functions 1 and 3 provided the associated Function maintains RCIC initiation capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. This Note is based on the reliability analysis (Ref. 1) assumption of the average time required to perform channel Surveillance. That analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that the RCIC will initiate when necessary.

SR 3.3.5.2.1

Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying that the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limit.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.5.2.1 (continued)

The Frequency is based upon operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the channels required by the LCO.

SR 3.3.5.2.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the channel will perform the intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

The Frequency of 92 days is based on the reliability analysis of Reference 1.

SR 3.3.5.2.3

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

The Frequency is based on the assumption of a 24 month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.5.2.4

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

(continued)

BASES

SURVEILLANCE REQUIREMENTS	SR 3.3.5.2.4 (continued) The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 24 month Frequency.
REFERENCES	1. GENE-770-06-2-A, "Addendum to Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications," December 1992.

B 3.3 INSTRUMENTATION

B 3.3.6.1 Primary Containment Isolation Instrumentation

BASES

BACKGROUND

The primary containment isolation instrumentation automatically initiates closure of appropriate primary containment isolation valves (PCIVs). The function of the PCIVs, in combination with other accident mitigation systems, is to limit fission product release during and following postulated Design Basis Accidents (DBAs). Primary containment isolation within the time limits specified for those isolation valves designed to close automatically ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a DBA.

The isolation instrumentation includes the sensors, relays, and switches that are necessary to cause initiation of primary containment and reactor coolant pressure boundary (RCPB) isolation. Most channels include electronic equipment (e.g., trip units) that compares measured input signals with pre-established setpoints. When the setpoint is exceeded, the channel output relay actuates, which then outputs a primary containment isolation signal to the isolation logic. Functional diversity is provided by monitoring a wide range of independent parameters. The input parameters to the isolation logic are (a) reactor vessel water level, (b) area and differential temperatures, (c) main steam line (MSL) flow measurement, (d) Standby Liquid Control (SLC) System initiation, (e) condenser vacuum loss, (f) main steam line pressure, (g) reactor core isolation cooling (RCIC) steam line flow and time delay relay, (h) reactor building ventilation exhaust plenum and fuel pool ventilation exhaust radiation, (i) RCIC steam line pressure, (j) RCIC turbine exhaust diaphragm pressure, (k) reactor water cleanup (RWCU) differential flow and time delay relay, (l) reactor vessel pressure, and (m) drywell pressure. Redundant sensor input signals are provided from each such isolation initiation parameter. In addition, manual isolation of the logics is provided.

The primary containment isolation instrumentation has inputs to the trip logic from the isolation Functions listed below.

(continued)

BASES

BACKGROUND (continued)

1. Main Steam Line Isolation

Most Main Steam Line Isolation Functions receive inputs from four channels. One channel associated with each Function inputs to one of four trip strings. Two trip strings make up a trip system and both trip systems must actuate to cause isolation of all main steam isolation valves (MSIVs). Any channel will trip the associated trip string. Only one trip string must trip to trip the associated trip system. The trip strings are arranged in one-out-of-two taken twice logic to initiate isolation of all MSIVs. The outputs from the same channels are arranged into two two-out-of-two trip systems to isolate all MSL drain valves. One two-out-of-two trip system is associated with the inboard valves and the other two-out-of-two trip system is associated with the outboard valves.

One exception to this arrangement is the Main Steam Line Flow—High Function. This Function uses 16 flow channels, four for each steam line. One channel from each steam line inputs to one of four trip strings. Two trip strings make up each trip system, and both trip systems must trip to cause an MSL isolation. Each trip string has four inputs (one per MSL), any one of which will trip the trip string. The trip strings are arranged in a one-out-of-two taken twice logic. Therefore, this is effectively a one-out-of-eight taken twice logic arrangement to initiate isolation of the MSIVs. Similarly, the 16 flow channels are connected into two two-out-of-two trip systems (effectively, two one-out-of-four twice logic), with one trip system isolating the inboard MSL drain valves and the other two-out-of-two trip system isolating the outboard MSL drain valves.

The other exception to this arrangement is the Manual Initiation Function. The MSIV manual isolation logic is similar to the other MSIV isolation logic in that each trip string is associated with a manual isolation pushbutton in a one-out-of-two taken twice logic as described above. However, the MSL drain isolation valves are isolated by a single manual isolation pushbutton; the outboard MSL drain isolation valves isolate from the B channel manual isolation pushbutton and the inboard MSL drain valve isolates from the D channel manual isolation pushbutton. The A and C channel manual isolation pushbuttons only directly affect the manual

(continued)

BASES

BACKGROUND

1. Main Steam Line Isolation (continued)

isolation of the MSIVs. The same channel B and D manual isolation pushbuttons are used for the logic of other Group isolation valves.

MSL Isolation Functions isolate the Group 1 valves.

2. Primary Containment Isolation

Most Primary Containment Isolation Functions receive inputs from four channels. The outputs from these channels are arranged into two two-out-of-two trip systems. One trip system initiates isolation of all automatic inboard PCIVs, while the other trip system initiates isolation of all automatic outboard PCIVs. Each trip system closes one of the two valves on each penetration with automatic isolation so that operation of either trip system isolates the penetration. An exception to this arrangement are the Traversing In-core Probe (TIP) System valve/drives. For these valves and drive mechanisms, only one trip system (the inboard valve system) is provided. When the trip system actuates, the drive mechanisms withdraw the TIPs and, when the TIPs are fully withdrawn, the ball valves close. This exception to the arrangement, which has been previously approved by the NRC as part of the issuance of the Operating Licenses, is described in UFSAR Table 6.2-21 (Ref. 1).

Reactor Vessel Water Level—Low, Level 3 isolates the Group 7 valves. Reactor Vessel Water Level—Low Low, Level 2 isolates the Group 2, 3, and 4 valves. Reactor Vessel Water Level—Low Low Low, Level 1 isolates the Group 10 valves. Drywell Pressure—High isolates the Group 2, 4, 7, and 10 valves. Reactor Building Ventilation Exhaust Plenum Radiation—High isolates the Group 4 valves. Fuel Pool Ventilation Exhaust Radiation—High isolates the Group 4 valves. Manual Initiation Functions isolate the Group 2, 4, 7, and 10 valves.

3. Reactor Core Isolation Cooling System Isolation

Most Functions receive input from two channels, with each channel in one trip system using one-out-of-one logic. One of the two trip systems is connected to the inboard steam

(continued)

BASES

BACKGROUND

3. Reactor Core Isolation Cooling System Isolation (continued)

valves and the other trip system is connected to the outboard steam valve on the RCIC penetration so that operation of either trip system isolates the penetration. Two exceptions to this arrangement are the RCIC Steam Supply Pressure — Low and RCIC Turbine Exhaust Diaphragm Pressure — High Functions. These Functions receive input from four steam supply pressure channels and four turbine exhaust diaphragm pressure channels, respectively. The outputs from these channels are connected into two two-out-of-two trip systems, each trip system isolating the inboard or outboard RCIC steam valves. In addition, the RCIC System Isolation Manual Initiation Function has only one channel, which isolates the outboard RCIC steam valve only (provided an automatic initiation signal is present). One additional exception involves the Drywell Pressure—High Function and the RCIC Steam Supply Pressure — Low Functions. The Drywell Pressure — High Function does not provide an isolation to the inboard and outboard RCIC steam valves (Group 8 valves). The logic is arranged such that RCIC Steam Supply Pressure — Low coincident with Drywell Pressure — High isolates the Group 9 valves. The Drywell Pressure — High Function receives inputs from four drywell pressure channels. The outputs from these channels are connected into two one-out-of-two trip systems with coincident RCIC Steam Supply Pressure also connected into the same trip systems arranged in a similar manner (one-out-of-two). One of the two trip systems is connected to the inboard RCIC turbine exhaust vacuum breaker line isolation valve and the other trip system is connected to the outboard RCIC turbine exhaust vacuum breaker line isolation valve (Group 9 valves).

RCIC System Isolation Functions isolate the Group 8 and 9 valves.

4. Reactor Water Cleanup System Isolation

Most Functions receive input from two channels with each channel in one trip system using one-out-of-one logic. Functions 4.c, 4.d, 4.e and 4.f (RWCU Heat Exchanger Area Temperature — High, RWCU Heat Exchanger Area Ventilation Differential Temperature — High, RWCU Pump and Valve Area

(continued)

BASES

BACKGROUND

4. Reactor Water Cleanup System Isolation (continued)

Temperature — High, and RWCU Pump and Valve Area Ventilation Differential Temperature — High, respectively) have one channel in each trip system in each area for a total of four channels per Function, for Functions 4.c and 4.d and a total of six channels per Function for Functions 4.e and 4.f, but the logic is the same (one-out-of-one per area). Each of the two trip systems is connected to one of the two valves on the RWCU penetration so that operation of either trip system isolates the penetration. The exceptions to this arrangement are the Reactor Vessel Water Level — Low Low, Level 2 and the SLC System Initiation Functions. The Reactor Vessel Water Level — Low Low, Level 2 Function receives input from four reactor vessel water level channels. The outputs from the reactor vessel water level channels are connected into two two-out-of-two trip systems, each trip system isolating one of the two RWCU valves. The Standby Liquid Control (SLC) System initiation has two channels, one from each SLC pump start circuit, in a single trip system. The two channels are connected in a one-out-of-two logic. This trip system isolates the RWCU inlet outboard valve.

RWCU Isolation Functions isolate the Group 5 valves.

5. RHR Shutdown Cooling System Isolation

The Shutdown Cooling Isolation Function receives input signals from instrumentation for the Reactor Vessel Water Level — Low, Level 3, Reactor Vessel Pressure — High, and Manual Initiation Functions. The Reactor Vessel Water Level — Low Function receives input from four channels while the Reactor Vessel Pressure — High Function receives input from two channels. The outputs from the Reactor Vessel Water Level — Low channels are connected into two two-out-of-two trip systems. The Reactor Vessel Pressure — High Function is arranged into two one-out-of-one trip systems. The Manual Initiation Function uses two channels, one for each trip system.

(continued)

BASES

BACKGROUND

5. Shutdown Cooling System Isolation (continued)

One of the two trip systems is connected to the outboard valve associated with the reactor vessel head spray injection penetration, the shutdown cooling return penetration, and the shutdown cooling suction penetration while the other trip system is connected to the inboard valves on the shutdown cooling suction penetration and the shutdown cooling return check valve bypasses.

The RHR Shutdown Cooling Isolation Functions isolate the Group 6 valves.

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

The isolation signals generated by the primary containment isolation instrumentation are implicitly assumed in the safety analyses of References 2 and 3 to initiate closure of valves to limit offsite doses. Refer to LCO 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)," Applicable Safety Analyses Bases, for more detail.

Primary containment isolation instrumentation satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii). Certain instrumentation Functions are retained for other reasons and are described below in the individual Functions discussion.

The OPERABILITY of the primary containment instrumentation is dependent on the OPERABILITY of the individual instrumentation channel Functions specified in Table 3.3.6.1-1. Each Function must have a required number of OPERABLE channels, with their setpoints within the specified Allowable Values, where appropriate. The actual setpoint is calibrated consistent with applicable setpoint methodology assumptions. Each channel must also respond within its assumed response time, where appropriate.

Allowable Values are specified for each Primary Containment Isolation Function specified in the Table. Nominal trip setpoints are specified in the setpoint calculations. The nominal setpoints are selected to ensure that the setpoints do not exceed the Allowable Value between CHANNEL CALIBRATIONS. Operation with a trip setpoint less conservative than the nominal trip setpoint, but within its Allowable Value, is acceptable. A channel is inoperable if its actual trip setpoint is not within its required

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

Allowable Value. Trip setpoints are those predetermined values of output at which an action should take place. The setpoints are compared to the actual process parameter (e.g., reactor vessel water level), and when the measured output value of the process parameter exceeds the setpoint, the associated device (e.g., trip unit) changes state. The analytic limits are derived from the limiting values of the process parameters obtained from the safety analysis. The trip setpoints are determined from the analytic limits, corrected for defined process, calibration, and instrument errors. The Allowable Values are then determined, based on the trip setpoint values, by accounting for the calibration based errors. These calibration based errors are limited to reference accuracy, instrument drift, errors associated with measurement and test equipment, and calibration tolerance of loop components. The trip setpoints and Allowable Values determined in this manner provide adequate protection because instrument uncertainties, process effects, calibration tolerances, instrument drift, and severe environment errors (for channels that must function in harsh environments as defined by 10 CFR 50.49) are accounted for and appropriately applied for the instrumentation.

Certain Emergency Core Cooling Systems (ECCS) and RCIC valves (e.g., minimum flow) also serve the dual function of automatic PCIVs. The signals that isolate these valves are also associated with the automatic initiation of the ECCS and RCIC. Some instrumentation and ACTIONS associated with these signals are addressed in LCO 3.3.5.1, "ECCS Instrumentation," and LCO 3.3.5.2, "RCIC System Instrumentation," and are not included in this LCO.

In general, the individual Functions are required to be OPERABLE in MODES 1, 2, and 3 consistent with the Applicability for LCO 3.6.1.1, "Primary Containment." Functions that have different Applicabilities are discussed below in the individual Functions discussion.

The specific Applicable Safety Analyses, LCO, and Applicability discussions are listed below on a Function by Function basis.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

1. Main Steam Line Isolation

1.a. Reactor Vessel Water Level — Low Low Low, Level 1

Low reactor pressure vessel (RPV) water level indicates that the capability to cool the fuel may be threatened. Should RPV water level decrease too far, fuel damage could result. Therefore, isolation of the MSIVs and other interfaces with the reactor vessel occurs to prevent offsite dose limits from being exceeded. The Reactor Vessel Water Level — Low Low Low, Level 1 Function is one of the many Functions assumed to be OPERABLE and capable of providing isolation signals. The Reactor Vessel Water Level — Low Low Low, Level 1 Function associated with isolation is assumed in the analysis of the recirculation line break (Ref. 2). The isolation of the MSL on Level 1 supports actions to ensure that offsite dose limits are not exceeded for a DBA.

Reactor vessel water level signals are initiated from four differential pressure transmitters that sense the difference between the pressure due to a constant column of water (reference leg) and the pressure due to the actual water level (variable leg) in the vessel. Four channels of Reactor Vessel Water Level — Low Low Low, Level 1 Function are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The Reactor Vessel Water Level — Low Low Low, Level 1 Allowable Value is chosen to be the same as the ECCS Level 1 Allowable Value (LCO 3.3.5.1) to ensure that the MSLs isolate on a potential loss of coolant accident (LOCA) to prevent offsite doses from exceeding 10 CFR 100 limits.

This Function isolates the Group 1 valves.

1.b. Main Steam Line Pressure — Low

Low MSL pressure indicates that there may be a problem with the turbine pressure regulation, which could result in a low reactor vessel water level condition and the RPV cooling down more than 100°F/hour if the pressure loss is allowed to continue. The Main Steam Line Pressure — Low Function is directly assumed in the analysis of the pressure regulator failure event (Ref. 4). The closure of the MSIVs ensures

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

1.b. Main Steam Line Pressure—Low (continued)

that the RPV temperature change limit (100°F/hour) is not reached. In addition, this Function supports actions to ensure that Safety Limit 2.1.1.1 is not exceeded. (This Function closes the MSIVs prior to pressure decreasing below 785 psig, which results in a scram due to MSIV closure, thus reducing reactor power to < 25% RTP.)

The MSL low pressure signals are initiated from four pressure switches that are connected downstream of the MSL header prior to each main turbine stop valve. The pressure switches are arranged such that, even though physically separated from each other, each switch is able to detect low MSL pressure. Four channels of Main Steam Line Pressure—Low Function are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The Allowable Value was selected to be high enough to prevent excessive RPV depressurization.

The Main Steam Line Pressure—Low Function is only required to be OPERABLE in MODE 1 since this is when the assumed transient can occur (Ref. 4).

This Function isolates the Group 1 valves.

1.c. Main Steam Line Flow—High

Main Steam Line Flow—High is provided to detect a break of the MSL and to initiate closure of the MSIVs. If the steam were allowed to continue flowing out of the break, the reactor would depressurize and the core could uncover. If the RPV water level decreases too far, fuel damage could occur. Therefore, the isolation is initiated on high flow to prevent or minimize core damage. The Main Steam Line Flow—High Function is directly assumed in the analysis of the main steam line break (MSLB) accident (Ref. 5). The isolation action, along with the scram function of the RPS, ensures that the fuel peak cladding temperature remains below the limits of 10 CFR 50.46 and offsite doses do not exceed the 10 CFR 100 limits.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

1.c. Main Steam Line Flow—High (continued)

The MSL flow signals are initiated from 16 differential pressure switches that are connected to the four MSLs (the differential pressure switches sense differential pressure across a flow element). The switches are arranged such that, even though physically separated from each other, all four connected to one steam line would be able to detect the high flow. Four channels of Main Steam Line Flow—High Function for each MSL (two channels per trip system) are available and are required to be OPERABLE so that no single instrument failure will preclude detecting a break in any individual MSL.

The Allowable Value is chosen to ensure that offsite dose limits are not exceeded due to the break.

This Function isolates the Group 1 valves.

1.d. Condenser Vacuum—Low

The Condenser Vacuum—Low Function is provided to prevent overpressurization of the main condenser in the event of a loss of the main condenser vacuum (Ref. 6). Since the integrity of the condenser is an assumption in offsite dose calculations (Ref. 7), the Condenser Vacuum—Low Function is assumed to be OPERABLE and capable of initiating closure of the MSIVs. The closure of the MSIVs is initiated to prevent the addition of steam that would lead to additional condenser pressurization and possible rupture of the diaphragm installed to protect the turbine exhaust hood, thereby preventing a potential radiation leakage path following an accident.

Condenser vacuum pressure signals are derived from four pressure switches that sense the pressure in the condenser. Four channels of Condenser Vacuum—Low Function are available and are required to be OPERABLE to ensure no single instrument failure can preclude the isolation function.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

1.d. Condenser Vacuum—Low (continued)

The Allowable Value is chosen to prevent damage to the condenser due to pressurization, thereby ensuring its integrity for offsite dose analysis. As noted (footnote (a) to Table 3.3.6.1-1), the channels are not required to be OPERABLE in MODES 2 and 3, when all turbine stop valves (TSVs) are closed, since the potential for condenser overpressurization is minimized. Switches are provided to manually bypass the channels when all TSVs are closed.

This Function isolates the Group 1 valves.

1.e Main Steam Line Tunnel Differential Temperature—High

Differential Temperature—High is provided to detect a leak in a main steam line, and provides diversity to the high flow instrumentation. The isolation occurs when a very small leak has occurred. If the small leak is allowed to continue without isolation, offsite dose limits may be reached. However, credit for these instruments is not taken in any transient or accident analysis in the UFSAR, since bounding analyses are performed for large breaks such as MSLBs.

Eight thermocouples provide input to the Main Steam Line Tunnel Differential Temperature—High Function. The output of these thermocouples is used to determine the differential temperature. Each channel consists of a differential temperature instrument that receives inputs from thermocouples that are located in the inlet and outlet of the main steam line tunnel for a total of four available channels. Four channels of Main Steam Line Tunnel Differential Temperature—High Function are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The differential temperature monitoring Allowable Value is chosen to detect a leak equivalent to 100 gpm.

These Functions isolate the Group 1 valves.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

1.f. Manual Initiation

The Manual Initiation push button channels introduce signals into the MSL isolation logic that are redundant to the automatic protective instrumentation and provide manual isolation capability. There is no specific UFSAR safety analysis that takes credit for this Function. It is retained for overall redundancy and diversity of the isolation function as required by the NRC in the plant licensing basis.

There are four push buttons for the logic, with two manual initiation push buttons per trip system. Four channels of Manual Initiation Function are available and are required to be OPERABLE in MODES 1, 2, and 3, since these are the MODES in which the MSL Isolation automatic Functions are required to be OPERABLE.

There is no Allowable Value for this Function since the channels are mechanically actuated based solely on the position of the push buttons.

This Function isolates the Group 1 valves.

2. Primary Containment Isolation

2.a Reactor Vessel Water Level — Low Low, Level 2

Low RPV water level indicates the capability to cool the fuel may be threatened. The valves whose penetrations communicate with the primary containment are isolated to limit the release of fission products. The isolation of the primary containment on Level 2 supports actions to ensure that offsite dose limits of 10 CFR 100 are not exceeded. The Reactor Vessel Water Level — Low Low, Level 2 Function associated with isolation is implicitly assumed in the UFSAR analysis as these leakage paths are assumed to be isolated post LOCA.

Reactor Vessel Water Level — Low Low, Level 2 signals are initiated from differential pressure transmitters that sense the difference between the pressure due to a constant column of water (reference leg) and the pressure due to the actual

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

2.a Reactor Vessel Water Level — Low Low, Level 2 (continued)

water level (variable leg) in the vessel. Four channels of Reactor Vessel Water Level — Low Low, Level 2 Function are available and are required to be OPERABLE to ensure no single instrument failure can preclude the isolation function.

The Reactor Vessel Water Level — Low Low, Level 2 Allowable Value was chosen to be the same as the ECCS Reactor Vessel Water Level — Low Low, Level 2 Allowable Value (LCO 3.3.5.1), since isolation of these valves is not critical to orderly plant shutdown.

This Function isolates the Group 2, 3, and 4 valves.

2.b Drywell Pressure — High

High drywell pressure can indicate a break in the RCPB inside the drywell. The isolation of some of the PCIVs on high drywell pressure supports actions to ensure that offsite dose limits of 10 CFR 100 are not exceeded. The Drywell Pressure — High Function associated with isolation of the primary containment is implicitly assumed in the UFSAR accident analysis as these leakage paths are assumed to be isolated post LOCA.

High drywell pressure signals are initiated from pressure switches that sense the pressure in the drywell. Four channels of Drywell Pressure — High Function are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The Allowable Value was selected to be the same as the RPS Drywell Pressure — High Allowable Value (LCO 3.3.1.1), since this may be indicative of a LOCA inside primary containment.

This Function isolates the Group 2, 4, 7, and 10 valves.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

2.c. Reactor Building Ventilation Exhaust Plenum Radiation—High

High ventilation exhaust radiation is an indication of possible gross failure of the fuel cladding. The release may have originated from the primary containment due to a break in the RCPB or refueling floor due to a fuel handling accident. When Reactor Building Ventilation Exhaust Radiation—High is detected, valves whose penetrations communicate with the primary containment atmosphere are isolated to limit the release of fission products.

The Reactor Building Ventilation Exhaust Plenum Radiation—High signals are initiated from radiation detectors that are located in the reactor building return air riser above the upper area of the steam tunnel prior to the reactor building ventilation isolation dampers. The signal from each detector is input to an individual monitor whose trip outputs are assigned to an isolation channel. Four channels of Reactor Building Ventilation Exhaust Plenum Radiation—High Function are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The Allowable Values are chosen to promptly detect gross failure of the fuel cladding and to ensure offsite doses remain below 10 CFR 20 and 10 CFR 100 limits.

These Functions isolate the Group 4 valves.

2.d. Fuel Pool Ventilation Exhaust Radiation—High

High fuel pool ventilation exhaust radiation indicates increased airborne radioactivity levels in secondary containment refuel floor area which could be due to fission gases from the fuel pool resulting from a refueling accident. Since the primary and secondary containments may be in communication, the vent and purge valves for primary containment isolation are also provided with an isolation signal. Therefore, Fuel Pool Ventilation Exhaust Radiation—High Function initiates an isolation to assure timely closure of valves to protect against substantial releases of radioactive materials to the environment. While this Function is identified as initiating the Standby Gas

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

2.d. Fuel Pool Ventilation Exhaust Radiation—High (continued)

Treatment System for a spent fuel cask drop accident (Ref. 3), it is not assumed in any limiting accident or transient analysis in the UFSAR because other leakage paths (e.g., MSIVs) are more limiting.

The fuel pool ventilation exhaust radiation signals are initiated from radiation detectors located in the reactor building exhaust ducting coming from the refuel floor. The signal from each detector is input to an individual monitor whose trip output is assigned to an isolation channel. Four channels of Fuel Pool Ventilation Exhaust Radiation—High Function are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The Allowable Value is chosen to be the same as the Fuel Pool Ventilation Exhaust Radiation—High Function (LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation") to provide a conservative isolation of this potential release path during this abnormal condition of increased airborne radioactivity.

This Function isolates the Group 4 valves.

2.e. Reactor Vessel Water Level—Low Low Low, Level 1

Low RPV water level indicates the capability to cool the fuel may be threatened. Should RPV water level decrease too far, fuel damage could result. Therefore, isolation of the primary containment occurs to prevent offsite dose limits from being exceeded. The Reactor Vessel Water Level—Low Low Low, Level 1 Function is one of the many Functions assumed to be OPERABLE and capable of providing isolation signals. The Reactor Vessel Water Level—Low Low Low, Level 1 Function associated with isolation is implicitly assumed in the UFSAR analysis as these leakage paths are assumed to be isolated post LOCA.

Reactor vessel water level signals are initiated from level transmitters that sense the difference between the pressure due to a constant column of water (reference leg) and the pressure due to the actual water level (variable leg) in the

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

2.e. Reactor Vessel Water Level – Low Low Low, Level 1 (continued)

vessel. Four channels of Reactor Vessel Water Level – Low Low Low, Level 1 Function are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The Reactor Vessel Water Level – Low Low Low, Level 1 Allowable Value is chosen to be the same as the ECCS Reactor Vessel Water Level – Low Low Low, Level 1 Allowable Value (LCO 3.3.5.1) to ensure the valves are isolated to prevent offsite doses from exceeding 10 CFR 100 limits.

This Function isolates the Group 10 valves.

2.f. Reactor Vessel Water Level—Low, Level 3

Low RPV water level indicates the capability to cool the fuel may be threatened. Should RPV water level decrease too far, fuel damage could result. Therefore, the valves whose penetrations communicate with the primary containment are isolated to limit the release of fission products. The isolation of the primary containment on Level 3 supports actions to ensure that offsite dose limits of 10 CFR 100 are not exceeded. The Reactor Vessel Water Level—Low, Level 3 Function associated with isolation is implicitly assumed in the UFSAR analysis as these leakage paths are assumed to be isolated post LOCA.

Reactor Vessel Water Level—Low, Level 3 signals are initiated from differential pressure transmitters that sense the difference between the pressure due to a constant column of water (reference leg) and the pressure due to the actual water level (variable leg) in the vessel. Four channels of the Reactor Vessel Water Level—Low, Level 3 Function are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The Reactor Vessel Water Level—Low, Level 3 Allowable Value was chosen to be the same as the RPS Reactor Vessel Water Level—Low, Level 3 Allowable Value (LCO 3.3.1.1) since the capability to cool the fuel may be threatened.

This Function isolates the Group 7 valves.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

2.g. Manual Initiation

The Manual Initiation push button channels introduce signals into the primary containment isolation logic that are redundant to the automatic protective instrumentation and provide manual isolation capability. There is no specific UFSAR safety analysis that takes credit for this Function. It is retained for overall redundancy and diversity of the isolation function as required by the NRC in the plant licensing basis.

There are two push buttons for the logic, one manual initiation push button per trip system. Two channels of the Manual Initiation Function are available and are required to be OPERABLE in MODES 1, 2, and 3, since these are the MODES in which the Primary Containment Isolation automatic Functions are required to be OPERABLE.

There is no Allowable Value for this Function since the channels are mechanically actuated based solely on the position of the push buttons.

This Function isolates the Group 2, 4, 7, and 10 valves.

3. Reactor Core Isolation Cooling System Isolation

3.a. RCIC Steam Line Flow—High

RCIC Steam Line Flow—High Function is provided to detect a break of the RCIC steam lines and initiates closure of the steam line isolation valves. If the steam is allowed to continue flowing out of the break, the reactor will depressurize and core uncovery can occur. Therefore, the isolation is initiated on high flow to prevent or minimize core damage. The isolation action, along with the scram function of the Reactor Protection System (RPS), ensures that the fuel peak cladding temperature remains below the limits of 10 CFR 50.46. Specific credit for this Function is not assumed in any UFSAR accident analyses since the bounding analysis is performed for large breaks such as recirculation and MSL breaks. However, these instruments prevent the RCIC steam line break from becoming bounding.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

3.a. RCIC Steam Line Flow—High (continued)

The RCIC Steam Line Flow—High signals are initiated from two differential pressure switches that are connected to the system steam lines. Two channels of RCIC Steam Line Flow—High Functions are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The Allowable Value is chosen to be low enough to ensure that the trip occurs to prevent fuel damage and maintains the MSLB event as the bounding event.

This Function isolates the Group 8 valves.

3.b. RCIC Steam Line Flow—Timer

The RCIC Steam Line Flow—Timer is provided to prevent false isolations on RCIC Steam Line Flow—High during system startup transients and therefore improves system reliability. This Function is not assumed in any UFSAR transient or accident analyses since the bounding analysis is performed for large breaks such as recirculation and MSL breaks. However, these instruments prevent the RCIC steam line break from being bounding.

The RCIC Steam Line Flow—Timer Function delays the RCIC Steam Line Flow—High signals by use of time delay relays. When an RCIC Steam Line Flow—High signal is generated, the time delay relays delay the tripping of the associated RCIC isolation trip system for a short time. Two channels of RCIC Steam Line Flow—Timer Function are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The Allowable Value was chosen to be long enough to prevent false isolations due to system starts but not so long as to impact offsite dose calculations.

This Function isolates the Group 8 valves.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

3.c. RCIC Steam Supply Pressure — Low

Low RCIC steam supply pressure indicates that the pressure of the steam in the RCIC turbine may be too low to continue operation of the RCIC turbine. This isolation is for equipment protection and is not assumed in any transient or accident analysis in the UFSAR. However, it also provides a diverse signal to indicate a possible system break. These instruments are included in the Technical Specifications (TS) because of the potential for risk due to possible failure of the instruments preventing RCIC initiations. Therefore, they meet Criterion 4 of 10 CFR 50.36(c)(2)(ii).

The RCIC Steam Supply Pressure — Low signals are initiated from four pressure switches that are connected to the RCIC steam line. Four channels of RCIC Steam Supply Pressure — Low Function are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The Allowable Value is selected to be high enough to prevent damage to the RCIC turbines.

This Function isolates the Group 8 valves. This Function coincident with Drywell Pressure — High also isolates the Group 9 valves.

3.d. RCIC Turbine Exhaust Diaphragm Pressure — High

High turbine exhaust diaphragm pressure indicates that the pressure may be too high to continue operation of the RCIC turbine. That is, one of two exhaust diaphragms has ruptured and pressure is reaching turbine casing pressure limits. This isolation is for equipment protection and is not assumed in any transient or accident analysis in the UFSAR. These instruments are included in the TS because of the potential for risk due to possible failure of the instruments preventing RCIC initiations. Therefore, they meet Criterion 4 of 10 CFR 50.36(c)(2)(ii).

The RCIC Turbine Exhaust Diaphragm Pressure — High signals are initiated from four pressure switches that are connected to the area between the rupture diaphragms on the RCIC turbine exhaust line. Four channels of RCIC Turbine Exhaust

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

3.d. RCIC Turbine Exhaust Diaphragm Pressure—High (continued)

Diaphragm Pressure—High Function are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The Allowable Value is selected to be low enough to prevent damage to the RCIC turbine.

This Function isolates the Group 8 valves.

3.e, 3.f, 3.g, 3.h. Area and Differential Temperature—High

Area and Differential Temperatures are provided to detect a leak from the RCIC steam piping. The isolation occurs when a very small leak has occurred and is diverse to the high flow instrumentation. If the small leak is allowed to continue without isolation, offsite dose limits may be reached. These Functions are not assumed in any UFSAR transient or accident analysis, since bounding analyses are performed for large breaks such as recirculation or MSL breaks.

Area Temperature—High signals are initiated from thermocouples that are located in the area that is being monitored. Two instruments monitor each area. Four channels for Area Temperature—High Function are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function. There are two for the RCIC equipment room and two for the RCIC steam line tunnel area.

There are 8 thermocouples (four for the RCIC equipment room and four for the RCIC steam line tunnel area) that provide input to the Differential Temperature—High Function. The output of these thermocouples is used to determine the differential temperature. Each channel consists of a differential temperature instrument that receives inputs from thermocouples that are located in the inlet and outlet of the area cooling system for a total of four (two for the RCIC equipment room and two for the RCIC steam line tunnel area) available channels.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

3.e, 3.f, 3.g, 3.h. Area and Differential Temperature—High (continued)

The Allowable Values are set low enough to detect a leak equivalent to 25 gpm.

This Function isolates the Group 8 valves.

3.i. Drywell Pressure—High

High drywell pressure can indicate a break in the RCPB. The RCIC isolation of the turbine exhaust is provided to prevent communication with the drywell when high drywell pressure exists. A potential leakage path exists via the turbine exhaust. The isolation is delayed until the system becomes unavailable for injection (i.e., low steam line pressure). The isolation of the RCIC turbine exhaust by Drywell Pressure—High is indirectly assumed in the UFSAR accident analysis because the turbine exhaust leakage path is not assumed to contribute to offsite doses.

High drywell pressure signals are initiated from pressure switches that sense the pressure in the drywell. Four channels of RCIC Drywell Pressure—High Function are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The Allowable Value was selected to be the same as the ECCS Drywell Pressure—High Allowable Value (LCO 3.3.5.1), since this is indicative of a LOCA inside primary containment.

This Function coincident with RCIC Steam Supply Pressure—Low isolates the Group 9 valves.

3.j. Manual Initiation

The Manual Initiation push button channel introduces a signal into the RCIC System isolation logic that is redundant to the automatic protective instrumentation and provides manual isolation capability when a system initiation signal is present. There is no specific UFSAR safety analysis that takes credit for this Function. It is retained for overall redundancy and diversity of the isolation function as required by the NRC in the plant licensing basis.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

3.j. Manual Initiation (continued)

There is one push button for RCIC. One channel of Manual Initiation Function is available and is required to be OPERABLE in MODES 1, 2, and 3 since these are the MODES in which the RCIC System Isolation automatic Functions are required to be OPERABLE. As noted (footnote (b) to Table 3.3.6.1-1), this Function only provides input into one of the two trip systems.

There is no Allowable Value for this Function since the channels are mechanically actuated based solely on the position of the push buttons.

This Function, coincident with a Reactor Vessel Water Level — Low Low, Level 2, isolates the outboard Group 8 valve.

4. Reactor Water Cleanup System Isolation

4.a. Differential Flow — High

The high differential flow signal is provided to detect a break in the RWCU System. This will detect leaks in the RWCU System when area or differential temperature would not provide detection (i.e., a cold leg break). Should the reactor coolant continue to flow out of the break, offsite dose limits may be exceeded. Therefore, isolation of the RWCU System is initiated when high differential flow is sensed to prevent exceeding offsite doses. A time delay (Function 4.b, described below) is provided to prevent spurious trips during most RWCU operational transients. This Function is not assumed in any UFSAR transient or accident analysis, since bounding analyses are performed for large breaks such as MSLBs.

The high differential flow signals are initiated from one differential pressure transmitter monitoring inlet flow (from the reactor vessel) and two transmitters monitoring system outlet flow to the two available flow paths (normal return to feedwater and discharge flow to either the main condenser or radwaste). The outputs of the transmitters are compared (in a summer) and the outputs are sent to two

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

4.a. Differential Flow—High (continued)

alarm trip units. If the difference between the inlet and outlet flow is too large, each alarm trip unit generates an isolation signal. Two channels of Differential Flow—High Function are available and are required to be OPERABLE to ensure that no single instrument failure (other than the common transmitters and summers) can preclude the isolation function.

The Differential Flow—High Allowable Value ensures that the break of the RWCU piping is detected.

This Function isolates the Group 5 valves.

4.b. Differential Flow—Timer

The Differential Flow—Timer is provided to avoid RWCU System isolations due to operational transients (such as pump starts and mode changes). During these transients the inlet and return flows become unbalanced for short time periods and Differential Flow—High will be sensed without an RWCU System break being present. Credit for this Function is not assumed in the UFSAR accident or transient analysis, since bounding analyses are performed for large breaks such as MSLBs.

The Differential Flow—Timer Function delays the Differential Flow—High signals by use of time delay relays. When a Differential Flow—High signal is generated, the time delay relays delay the tripping of the associated RWCU isolation trip system for a short time. Two channels of Differential Flow—Timer Function are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The Differential Flow—Timer Allowable Value is selected to ensure that the MSLB outside containment remains the limiting break for UFSAR analysis for offsite dose calculations.

This Function isolates the Group 5 valves.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

4.c, 4.d, 4.e, 4.f, 4.g, 4.h. 4.i, 4.j, Area and Differential Temperature—High

Area and Differential Temperature—High is provided to detect a leak from the RWCU System. The isolation occurs even when very small leaks have occurred and is diverse to the high differential flow instrumentation for the hot portions of the RWCU System. If the small leak continues without isolation, offsite dose limits may be reached. Credit for these instruments is not taken in any transient or accident analysis in the UFSAR, since bounding analyses are performed for large breaks such as MSLBs.

Area Temperature—High signals are initiated from temperature elements that are located in the room that is being monitored. There are fourteen thermocouples that provide input to the Area Temperature—High Function (two per area). Fourteen channels are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function. There are four channels for the RWCU heat exchanger area (two in each heat exchanger room), six channels for the RWCU pump and valve room (two in each of the three rooms), two channels for the holdup pipe area, and two channels for the filter/demineralizer valve room area.

There are twenty eight thermocouples that provide input to the Differential Temperature—High Function. The output of these thermocouples is used to determine the differential temperature. Each channel consists of a differential temperature instrument that receives inputs from thermocouples that are located in the inlet and outlet of the area cooling system for a total of fourteen available channels (two per area). Fourteen channels are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function. There are four channels for the RWCU heat exchanger area, six channels for the RWCU pump and valve room, two channels for the holdup pipe area, and two for the filter/demineralizer valve room area.

The Area and Differential Temperature—High Allowable Values are set low enough to detect a leak equivalent to 25 gpm.

These Functions isolate the Group 5 valves.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

4.k. Reactor Vessel Water Level — Low Low, Level 2

Low RPV water level indicates the capability to cool the fuel may be threatened. Should RPV water level decrease too far, fuel damage could result. Therefore, isolation of some reactor vessel interfaces occurs to isolate the potential sources of a break. The isolation of the RWCU System on Level 2 supports actions to ensure that fuel peak cladding temperature remains below the limits of 10 CFR 50.46. The Reactor Vessel Water Level — Low Low, Level 2 Function associated with RWCU isolation is not directly assumed in any transient or accident analysis, since bounding analyses are performed for large breaks such as MSLBs.

Reactor Vessel Water Level — Low Low, Level 2 signals are initiated from differential pressure transmitters that sense the difference between the pressure due to a constant column of water (reference leg) and the pressure due to the actual water level (variable leg) in the vessel. Four channels of Reactor Vessel Water Level — Low Low, Level 2 Function are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The Reactor Vessel Water Level — Low Low, Level 2 Allowable Value was chosen to be the same as the ECCS Reactor Vessel Water Level — Low Low, Level 2 Allowable Value (LCO 3.3.5.1), since the capability to cool the fuel may be threatened.

This Function isolates the Group 5 valves.

4.l. SLC System Initiation

The isolation of the RWCU System is required when the SLC System has been initiated to prevent dilution and removal of the boron solution by the RWCU System (Ref. 8). SLC System initiation signals are initiated from the two SLC pump start signals.

Two channels (one from each pump) of SLC System Initiation Function are available and are required to be OPERABLE only in MODES 1 and 2, since these are the only MODES where the reactor can be critical, and these MODES are consistent with the Applicability for the SLC System (LCO 3.1.7, "SLC System"). As noted (footnote (b) to Table 3.3.6.1-1), this Function only provides input into one of two trip systems.

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BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

4.l. SLC System Initiation (continued)

There is no Allowable Value associated with this Function since the channels are mechanically actuated based solely on the position of the SLC System initiation switches.

This Function isolates the outboard Group 5 valve.

4.m. Manual Initiation

The Manual Initiation push button channels introduce signals into the RWCU System isolation logic that are redundant to the automatic protective instrumentation and provide manual isolation capability. There is no specific UFSAR safety analysis that takes credit for this Function. It is retained for overall redundancy and diversity of the isolation function as required by the NRC in the plant licensing basis.

There are two push buttons for the logic, one manual initiation push button per trip system. Two channels of the Manual Initiation Function are available and are required to be OPERABLE in MODES 1, 2, and 3 since these are the MODES in which the RWCU System Isolation automatic Functions are required to be OPERABLE.

There is no Allowable Value for this Function, since the channels are mechanically actuated based solely on the position of the push buttons.

This Function isolates the Group 5 valves.

5. RHR Shutdown Cooling System Isolation

5.a. Reactor Vessel Water Level — Low, Level 3

Low RPV water level indicates the capability to cool the fuel may be threatened. Should RPV water level decrease too far, fuel damage could result. Therefore, isolation of some reactor vessel interfaces occurs to begin isolating the potential sources of a break. The Reactor Vessel Water Level — Low, Level 3 Function associated with RHR Shutdown Cooling System isolation is not directly assumed in any

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

5.a. Reactor Vessel Water Level - Low, Level 3 (continued)

transient or accident analysis, since bounding analyses are performed for large breaks such as MSLBs. The RHR Shutdown Cooling System isolation on Level 3 supports actions to ensure that the RPV water level does not drop below the top of the active fuel during a vessel draindown event caused by a leak (e.g., pipe break or inadvertent valve opening) in the RHR Shutdown Cooling System.

Reactor Vessel Water Level - Low, Level 3 signals are initiated from differential pressure transmitters that sense the difference between the pressure due to a constant column of water (reference leg) and the pressure due to the actual water level (variable leg) in the vessel. Four channels (two channels per trip system) of the Reactor Vessel Water Level - Low, Level 3 Function are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function. As noted (footnote (c) to Table 3.3.6.1-1), only one trip system is required to be OPERABLE in MODES 4 and 5 provided the RHR Shutdown Cooling System integrity is maintained. System integrity is maintained provided the piping is intact and no maintenance is being performed that has the potential for draining the reactor vessel through the system.

The Reactor Vessel Water Level - Low, Level 3 Function is only required to be OPERABLE in MODES 3, 4, and 5 to prevent this potential flow path from lowering reactor vessel level to the top of the fuel. In MODES 1 and 2, the Reactor Vessel Pressure - High Function and administrative controls ensure that this flow path remains isolated to prevent unexpected loss of inventory via this flow path.

The Reactor Vessel Water Level - Low, Level 3 Allowable Value was chosen to be the same as the RPS Reactor Vessel Water Level - Low, Level 3 Allowable Value (LCO 3.3.1.1) since the capability to cool the fuel may be threatened.

This Function isolates the Group 6 valves.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

5.b. Reactor Vessel Pressure—High

The Shutdown Cooling System Reactor Vessel Pressure—High Function is provided to isolate the shutdown cooling portion of the RHR System. This interlock is provided only for equipment protection to prevent an intersystem LOCA scenario and credit for the interlock is not assumed in the accident or transient analysis in the UFSAR.

The Reactor Vessel Pressure—High signals are initiated from two pressure switches. Two channels of Reactor Vessel Pressure—High Function are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The Allowable Value (corrected for cold water head and reactor vessel flooded) was chosen to be low enough to protect the system equipment from overpressurization.

This Function isolates the Group 6 valves.

5.c. Manual Initiation

The Manual Initiation push button channels introduce signals into the RHR Shutdown Cooling System isolation logic that are redundant to the automatic protective instrumentation and provide manual isolation capability. There is no specific UFSAR safety analysis that takes credit for this Function. It is retained for overall redundancy and diversity of the isolation function as required by the NRC in the plant licensing basis.

There is one push button for the logic per trip system. Two channels of the Manual Initiation Function are available and are required to be OPERABLE in MODES 1, 2, and 3 since these are the MODES in which the RHR Shutdown Cooling System Isolation automatic Functions are required to be OPERABLE. While certain automatic Functions are required in MODES 4 and 5, the Manual Initiation Function is not required in MODES 4 and 5, since there are other means (i.e., means other than the Manual Initiation push buttons) to manually isolate the RHR Shutdown Cooling System from the control room.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	<u>5.c. Manual Initiation</u> (continued) There is no Allowable Value for this Function, since the channels are mechanically actuated based solely on the position of the push buttons. This Function isolates the Group 6 valves.
ACTIONS	Note 1 has been provided to modify the ACTIONS related to primary containment isolation instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition discovered to be inoperable or not within limits will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable primary containment isolation instrumentation channels provide appropriate compensatory measures for separate inoperable channels. As such, a Note has been provided that allows separate Condition entry for each inoperable primary containment isolation instrumentation channel. Note 2 indicates that when automatic isolation capability is lost for Function 1.e, Main Steam Line Tunnel Differential Temperature—High (i.e., when both trip systems are inoperable for Function 1.e) due to required Reactor Building Ventilation System corrective maintenance, filter changes, damper cycling, or for performance of required Surveillances, entry into the associated Conditions and Required Actions may be delayed for up to 4 hours. Similarly, Note 3 indicates that when automatic isolation capability is lost for Function 1.e due to a loss of reactor building ventilation or for performance of SR 3.6.4.1.3 or SR 3.6.4.1.4, entry into the associated Conditions and Required Actions may be delayed for up to 12 hours. Upon completion of the activities or expiration of the time allowance, the channels must be returned to OPERABLE status or the applicable Conditions entered and Required Actions taken. These Notes are necessary so that testing and

(continued)

BASES

ACTIONS (continued)

required Surveillances specified in LCO 3.6.4.1, "Secondary Containment," LCO 3.6.4.2, "Secondary Containment Isolation Valves (SCIV)," and LCO 3.6.4.3, "Standby Gas Treatment (SGT) System," can be performed without inducing an isolation of the MSIVs. The 4 hour and 12 hour allowances provide sufficient time to safely perform the testing. The 12 hour allowance also provides sufficient time to identify and correct minor reactor building ventilation system problems. Since the design of the Unit 1 and Unit 2 reactor buildings is such that they share a common area of the refuel floor (i.e., the reactor buildings are not separated on the refuel floor), operation of either unit's ventilation system will affect the other unit's building differential pressure. Performance of testing to verify secondary containment integrity requirements and minor correctable problems could require a dual unit outage (without the Notes).

A.1

Because of the diversity of sensors available to provide isolation signals and the redundancy of the isolation design, an allowable out of service time of 12 hours or 24 hours, depending on the Function (12 hours for those Functions that have channel components common to RPS instrumentation and 24 hours for those Functions that do not have channel components common to RPS instrumentation), has been shown to be acceptable (Refs. 9 and 10) to permit restoration of any inoperable channel to OPERABLE status. This out of service time is only acceptable provided the associated Function is still maintaining isolation capability (refer to Required Action B.1 Bases). If the inoperable channel cannot be restored to OPERABLE status within the allowable out of service time, the channel must be placed in the tripped condition per Required Action A.1. Placing the inoperable channel in trip would conservatively compensate for the inoperability, restore capability to accommodate a single failure, and allow operation to continue with no further restrictions. Alternately, if it is not desired to place the channel in trip (e.g., as in the case where placing the inoperable channel in trip would result in an isolation), Condition C must be entered and its Required Action taken.

(continued)

BASES

ACTIONS (continued)

B.1

Required Action B.1 is intended to ensure that appropriate actions are taken if multiple, inoperable, untripped channels within the same Function result in redundant automatic isolation capability being lost for the associated penetration flow path(s). The MSIVs portion of the MSL isolation Functions are considered to be maintaining isolation capability when sufficient channels are OPERABLE or in trip such that both trip systems will generate a trip signal from the given Function on a valid signal. The MSL drain valves portion of the MSL isolation Functions and the other isolation Functions are considered to be maintaining isolation capability when sufficient channels are OPERABLE or in trip such that one trip system will generate a trip signal from the given Function on a valid signal. This ensures that one of the two PCIVs in the associated penetration flow path can receive an isolation signal from the given Function. For the MSIVs portion of Functions 1.a, 1.b, 1.d, and 1.e, this would require both trip systems to have one channel OPERABLE or in trip. For the MSL drain valves portion of Functions 1.a, 1.b, 1.d, and 1.e, this would require one trip system to have two channels, each OPERABLE or in trip. For the MSIVs portion of Function 1.c, this would require both trip systems to have one channel, associated with each MSL, OPERABLE or in trip. For the MSL drain valves portion of Function 1.c, this would require one trip system to have two channels, associated with each MSL, each OPERABLE or in trip. For Functions 2.a, 2.b, 2.c, 2.d, 2.e, 2.f, 3.c (for Group 8 valves) 3.d, 4.k, and 5.a, this would require one trip system to have two channels, each OPERABLE or in trip. For Functions 3.a, 3.b, 3.c (for Group 9 valves), 3.e, 3.f, 3.g, 3.h, 3.i, 4.a, 4.b, 4.g, 4.h, 4.i, 4.j, 4.l, and 5.b, this would require one trip system to have one channel OPERABLE or in trip. For Functions 4.c, 4.d, 4.e, and 4.f each Function consists of channels that monitor several different locations. Therefore, this would require one channel per location to be OPERABLE or in trip (the channels are not required to be in the same trip system). The Condition does not include the Manual Initiation Functions (Functions 1.f, 2.g, 3.j, 4.m, and 5.c), since they are not assumed in any accident or transient analysis. Thus, a total loss of manual initiation capability for 24 hours (as allowed by Required Action A.1) is allowed.

(continued)

BASES

ACTIONS

B.1 (continued)

The Completion Time is intended to allow the operator time to evaluate and repair any discovered inoperabilities. The Completion Time is acceptable because it minimizes risk while allowing time for restoration or tripping of channels.

C.1

Required Action C.1 directs entry into the appropriate Condition referenced in Table 3.3.6.1-1. The applicable Condition specified in Table 3.3.6.1-1 is Function and MODE or other specified condition dependent and may change as the Required Action of a previous Condition is completed. Each time an inoperable channel has not met any Required Action of Condition A or B and the associated Completion Time has expired, Condition C will be entered for that channel and provides for transfer to the appropriate subsequent Condition.

D.1, D.2.1, and D.2.2

If the channel is not restored to OPERABLE status or placed in trip within the allowed Completion Time, the associated MSLs may be isolated (Required Action D.1), and if allowed (i.e., plant safety analysis allows operation with an MSL isolated), plant operation with the MSL isolated may continue. Isolating the affected MSL accomplishes the safety function of the inoperable channel. This Required Action will generally only be used if a Function 1.c channel is inoperable and untripped. The associated MSL(s) to be isolated are those whose Main Steam Line Flow—High Function channel(s) are inoperable. Alternatively, the plant must be placed in a MODE or other specified condition in which the LCO does not apply. This is done by placing the plant in at least MODE 3 within 12 hours and in MODE 4 within 36 hours (Required Actions D.2.1 and D.2.2). The Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

(continued)

BASES

ACTIONS (continued)

E.1

If the channel is not restored to OPERABLE status or placed in trip within the allowed Completion Time, the plant must be placed in a MODE or other specified condition in which the LCO does not apply. This is done by placing the plant in at least MODE 2 within 6 hours.

The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 2 from full power conditions in an orderly manner and without challenging plant systems.

F.1

If the channel is not restored to OPERABLE status or placed in trip within the allowed Completion Time, plant operation may continue if the affected penetration flow path(s) is isolated. Isolating the affected penetration flow path(s) accomplishes the safety function of the inoperable channels.

For some of the Area and Differential Temperature—High Functions, the affected penetration flow path(s) may be considered isolated by isolating only that portion of the system in the associated room monitored by the inoperable channel. That is, if the RWCU pump room A Area Temperature—High channel is inoperable, the A pump room area can be isolated while allowing continued RWCU operation utilizing the B RWCU pump.

Alternatively, if it is not desired to isolate the affected penetration flow path(s) (e.g., as in the case where isolating the penetration flow path(s) could result in a reactor scram), Condition H must be entered and its Required Actions taken.

The Completion Time is acceptable because it minimizes risk while allowing sufficient time for plant operations personnel to isolate the affected penetration flow path(s).

(continued)

BASES

ACTIONS (continued)

G.1

If the channel is not restored to OPERABLE status or placed in trip within the allowed Completion Time, plant operations may continue if the affected penetration flow path(s) is isolated. Isolating the affected penetration flow path(s) accomplishes the safety function of the inoperable channels. The 24 hour Completion Time is acceptable due to the fact that these Functions (Manual Initiation) are not assumed in any accident or transient analysis in the UFSAR. Alternately, if it is not desired to isolate the affected penetration flow path(s) (e.g., as in the case where isolating the penetration flow path(s) could result in a reactor scram), Condition H must be entered and its Required Actions taken.

H.1 and H.2

If the channel is not restored to OPERABLE status or placed in trip, or any Required Action of Condition F or G is not met and the associated Completion Time has expired, the plant must be placed in a MODE or other specified condition in which the LCO does not apply. This is done by placing the plant in at least MODE 3 within 12 hours and in MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

I.1 and I.2

If the channel is not restored to OPERABLE status within the allowed Completion Time, the associated SLC subsystem(s) is declared inoperable or the RWCU System is isolated. Since this Function is required to ensure that the SLC System performs its intended function, sufficient remedial measures are provided by declaring the associated SLC subsystem inoperable or isolating the RWCU System.

The Completion Time of 1 hour is acceptable because it minimizes risk while allowing sufficient time for personnel to isolate the RWCU System.

(continued)

BASES

ACTIONS (continued)

J.1 and J.2

If the channel is not restored to OPERABLE status or placed in trip within the allowed Completion Time, the associated penetration flow path should be closed. However, if the shutdown cooling function is needed to provide core cooling, these Required Actions allow the penetration flow path to remain unisolated provided action is immediately initiated to restore the channel to OPERABLE status or to isolate the RHR Shutdown Cooling System (i.e., provide alternate decay heat removal capabilities so the penetration flow path can be isolated). ACTIONS must continue until the channel is restored to OPERABLE status or the RHR Shutdown Cooling System is isolated.

SURVEILLANCE REQUIREMENTS

As noted at the beginning of the SRs, the SRs for each Primary Containment Isolation Instrumentation Function are found in the SRs column of Table 3.3.6.1-1.

The Surveillances are also modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains isolation capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. This Note is based on the reliability analyses (Refs. 9 and 10) assumption of the average time required to perform channel surveillance. That analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that the PCIVs will isolate the penetration flow path(s) when necessary.

SR 3.3.6.1.1

Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.6.1.1 (continued)

approximately the same value. Significant deviations between the instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff, based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limit.

The Frequency is based on operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the channels required by the LCO.

SR 3.3.6.1.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the channel will perform the intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

The Frequency of 92 days is based on reliability analyses described in References 9 and 10.

SR 3.3.6.1.3 and SR 3.3.6.1.4

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

(continued)

BASES

SURVEILLANCE REQUIREMENTS

<u>SR 3.3.6.1.3 and SR 3.3.6.1.4</u> (continued)

The Frequencies are based on the assumption of a 92 day or 24 month calibration interval, as applicable, in the determination of the magnitude of equipment drift in the setpoint analysis.

<u>SR 3.3.6.1.5</u>

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required isolation logic for a specific channel. The system functional testing performed on PCIVs in LCO 3.6.1.3 overlaps this Surveillance to provide complete testing of the assumed safety function. The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 24 month Frequency.

<u>SR 3.3.6.1.6</u>

This SR ensures that the individual channel response times are less than or equal to the maximum values assumed in the accident analysis. Testing is performed only on channels where the assumed response time does not correspond to the diesel generator (DG) start time. For channels assumed to respond within the DG start time, sufficient margin exists in the 13 second start time when compared to the typical channel response time (milliseconds) so as to assure adequate response without a specific measurement test. The instrument response times must be added to the MSIV closure times to obtain the ISOLATION SYSTEM RESPONSE TIME. However, failure to meet the ISOLATION SYSTEM RESPONSE TIME due to a MSIV closure time not within limits does not require the associated instrumentation to be declared inoperable; only the MSIV is required to be declared inoperable.

ISOLATION SYSTEM RESPONSE TIME acceptance criteria are included in Reference 11.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.6.1.6 (continued)

A Note to the Surveillance states that the response time of the sensors may be assumed to be the design sensor response time and therefore, are excluded from the ISOLATION SYSTEM RESPONSE TIME testing. This is allowed since the sensor response time for the affected Functions (Functions 1.a, 1.b, and 1.c) is a small part of the overall ISOLATION SYSTEM RESPONSE TIME (Ref. 12). However, the response time of the remaining portion of the channel, including trip unit and relay logic, is required to be performed.

ISOLATION SYSTEM RESPONSE TIME tests are conducted on a 24 month STAGGERED TEST BASIS. The 24 month test Frequency is consistent with the refueling cycle and is based upon plant operating experience that shows that random failures of instrumentation components causing serious response time degradation, but not channel failure, are infrequent.

REFERENCES

1. UFSAR, Table 6.2-21.
2. UFSAR, Section 6.2.1.1.
3. UFSAR, Chapter 15.
4. UFSAR, Section 15.1.3.
5. UFSAR, Section 15.6.4.
6. UFSAR, Section 15.2.5
7. UFSAR, Section 15.4.9.
8. UFSAR, Section 9.3.5.
9. NEDC-31677-P-A, "Technical Specification Improvement Analysis for BWR Isolation Actuation Instrumentation," July 1990.
10. NEDC-30851-P-A, Supplement 2, "Technical Specifications Improvement Analysis for BWR Isolation Instrumentation Common to RPS and ECCS Instrumentation," March 1989.

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BASES

REFERENCES (continued)	11.	Technical Requirements Manual.
	12.	NEDO-32291-A, "System Analyses for the Elimination of Selected Response Time Testing Requirements," October 1995.

B 3.3 INSTRUMENTATION

B 3.3.6.2 Secondary Containment Isolation Instrumentation

BASES

BACKGROUND

The secondary containment isolation instrumentation automatically initiates closure of appropriate secondary containment isolation valves (SCIVs) and starts the Standby Gas Treatment (SGT) System. The function of these systems, in combination with other accident mitigation systems, is to limit fission product release during and following postulated Design Basis Accidents (DBAs) (Refs. 1 and 2), such that offsite radiation exposures are maintained within the requirements of 10 CFR 100 that are part of the NRC staff approved licensing basis. Secondary containment isolation and establishment of vacuum with the SGT System within the assumed time limits ensures that fission products that are released during certain operations that take place inside primary containment or during certain operations when primary containment is not required to be OPERABLE or that take place outside primary containment, are maintained within applicable limits.

The isolation instrumentation includes the sensors, relays, and switches that are necessary to cause initiation of secondary containment isolation. Most channels include electronic equipment (e.g., trip units) that compares measured input signals with pre-established setpoints. When the setpoint is exceeded, the channel output relay actuates, which then outputs a secondary containment isolation signal to the isolation logic. Functional diversity is provided by monitoring a wide range of independent parameters. The input parameters to the isolation logic are (a) reactor vessel water level, (b) drywell pressure, (c) reactor building ventilation exhaust plenum radiation, and (d) fuel pool ventilation exhaust radiation. Redundant sensor input signals from each parameter are provided for initiation of isolation parameters. In addition, manual initiation of the logic is provided.

For each secondary containment isolation instrumentation Function, the logic receives input from four channels. The output from these channels are arranged into two two-out-of-two trip systems. In addition to the isolation function, the SGT subsystems are initiated. There are two SGT

(continued)

BASES

BACKGROUND (continued)	subsystems with both subsystems being initiated by each trip system. Automatically isolated secondary containment penetrations are isolated by two isolation valves. Each trip system initiates isolation of one of two SCIVs so that operation of either trip system isolates the associated penetrations.

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

The isolation signals generated by the secondary containment isolation instrumentation are implicitly assumed in the safety analyses of References 1 and 2 to initiate closure of the SCIVs and start the SGT System to limit offsite doses.

Refer to LCO 3.6.4.2, "Secondary Containment Isolation Valves (SCIVs)," and LCO 3.6.4.3, "Standby Gas Treatment (SGT) System," Applicable Safety Analyses Bases for more detail of the safety analyses.

The secondary containment isolation instrumentation satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii). Certain instrumentation Functions are retained for other reasons and are described below in the individual Functions discussion.

The OPERABILITY of the secondary containment isolation instrumentation is dependent upon the OPERABILITY of the individual instrumentation channel Functions. Each Function must have the required number of OPERABLE channels with their setpoints set within the specified Allowable Values, as shown in Table 3.3.6.2-1. The actual setpoint is calibrated consistent with applicable setpoint methodology assumptions.

Allowable Values are specified for each Function specified in the Table. Nominal trip setpoints are specified in setpoint calculations. The nominal setpoints are selected to ensure that the setpoints do not exceed the Allowable Values between CHANNEL CALIBRATIONS. Operation with a trip setpoint less conservative than the nominal trip setpoint, but within its Allowable Value, is acceptable. A channel is inoperable if its actual trip setpoint is not within its required Allowable Value.

Trip setpoints are those predetermined values of output at which an action should take place. The setpoints are compared to the actual process parameter (e.g., reactor

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

vessel water level), and when the measured output value of the process parameter exceeds the setpoint, the associated device (e.g., trip unit) changes state. The analytic limits are derived from the limiting values of the process parameters obtained from the safety analysis. The trip setpoints are determined from the analytic limits, corrected for defined process, calibration, and instrument errors. The Allowable Values are then determined, based on the trip setpoint values, by accounting for the calibration based errors. These calibration based errors are limited to reference accuracy, instrument drift, errors associated with measurement and test equipment, and calibration tolerance of loop components. The trip setpoints and Allowable Values determined in this manner provide adequate protection because instrument uncertainties, process effects, calibration tolerances, instrument drift, and severe environment errors (for channels that must function in harsh environments as defined by 10 CFR 50.49) are accounted for and appropriately applied for the instrumentation.

In general, the individual Functions are required to be OPERABLE in the MODES or other specified conditions when SCIVs and the SGT System are required.

The specific Applicable Safety Analyses, LCO, and Applicability discussions are listed below on a Function by Function basis.

1. Reactor Vessel Water Level — Low Low, Level 2

Low reactor pressure vessel (RPV) water level indicates that the capability to cool the fuel may be threatened. Should RPV water level decrease too far, fuel damage could result. An isolation of the secondary containment and actuation of the SGT System are initiated in order to minimize the potential of an offsite dose release. The Reactor Vessel Water Level — Low Low, Level 2 Function is one of the Functions assumed to be OPERABLE and capable of providing isolation and initiation signals. The isolation and initiation of systems on Reactor Vessel Water Level — Low Low, Level 2 support actions to ensure that any offsite releases are within the limits calculated in the safety analysis (Ref. 1).

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

1. Reactor Vessel Water Level — Low Low, Level 2 (continued)

Reactor Vessel Water Level — Low Low, Level 2 signals are initiated from differential pressure transmitters that sense the difference between the pressure due to a constant column of water (reference leg) and the pressure due to the actual water level (variable leg) in the vessel. Four channels of Reactor Vessel Water Level — Low Low, Level 2 Function are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The Reactor Vessel Water Level — Low Low, Level 2 Allowable Value was chosen to be the same as the High Pressure Core Spray (HPCS)/Reactor Core Isolation Cooling (RCIC) Reactor Vessel Water Level — Low Low, Level 2 Allowable Value (LCO 3.3.5.1, "Emergency Core Cooling System (ECCS) Instrumentation," and LCO 3.3.5.2, "Reactor Core Isolation Cooling (RCIC) System Instrumentation"), since this could indicate the capability to cool the fuel is being threatened.

The Reactor Vessel Water Level — Low Low, Level 2 Function is required to be OPERABLE in MODES 1, 2, and 3 where considerable energy exists in the Reactor Coolant System (RCS); thus, there is a probability of pipe breaks resulting in significant releases of radioactive steam and gas. In MODES 4 and 5, the probability and consequences of these events are low due to the RCS pressure and temperature limitations of these MODES; thus, this Function is not required. In addition, the Function is also required to be OPERABLE during operations with a potential for draining the reactor vessel (OPDRVs) to ensure that offsite dose limits are not exceeded if core damage occurs.

2. Drywell Pressure — High

High drywell pressure can indicate a break in the reactor coolant pressure boundary (RCPB). An isolation of the secondary containment and actuation of the SGT System are initiated in order to minimize the potential of an offsite dose release. The isolation and initiation of systems on Drywell Pressure — High supports actions to ensure that any offsite releases are within the limits calculated in the

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

2. Drywell Pressure — High (continued)

safety analysis. However, the Drywell Pressure — High Function associated with isolation is not assumed in any UFSAR accident or transient analysis. It is retained for the overall redundancy and diversity of the secondary containment isolation instrumentation as required by the NRC approved licensing basis.

High drywell pressure signals are initiated from pressure switches that sense the pressure in the drywell. Four channels of Drywell Pressure — High Function are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The Allowable Value was chosen to be the same as the RPS Drywell Pressure — High Function Allowable Value (LCO 3.3.1.1) since this is indicative of a loss of coolant accident.

The Drywell Pressure — High Function is required to be OPERABLE in MODES 1, 2, and 3 where considerable energy exists in the RCS; thus, there is a probability of pipe breaks resulting in significant releases of radioactive steam and gas. This Function is not required in MODES 4 and 5 because the probability and consequences of these events are low due to the RCS pressure and temperature limitations of these MODES.

3, 4. Reactor Building Ventilation Exhaust Plenum and Fuel Pool Ventilation Exhaust Radiation — High

High secondary containment exhaust radiation is an indication of possible gross failure of the fuel cladding. The release may have originated from the primary containment due to a break in the RCPB or the refueling floor due to a fuel handling accident. When Exhaust Radiation — High is detected, secondary containment isolation and actuation of the SGT System are initiated to limit the release of fission products as assumed in the UFSAR safety analyses (Refs. 1 and 2).

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BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

3, 4. Reactor Building Ventilation Exhaust Plenum and Fuel Pool Ventilation Exhaust Radiation—High (continued)

Reactor Building Ventilation Exhaust Plenum Radiation—High signals are initiated from radiation detectors that are located in the reactor building return air riser above the upper area of the steam tunnel prior to the reactor building ventilation isolation dampers. Fuel Pool Ventilation Exhaust Radiation—High signals are initiated from radiation detectors that are located in the reactor building exhaust ducting coming from the refuel floor. The signal from each detector is input to an individual monitor whose trip outputs are assigned to an isolation channel. Four channels of Reactor Building Ventilation Exhaust Plenum Radiation—High Function and four channels of Fuel Pool Ventilation Exhaust Radiation—High Function are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The Allowable Values are chosen to promptly detect gross failure of the fuel cladding.

The Reactor Building Ventilation Exhaust Plenum and Fuel Pool Ventilation Exhaust Radiation—High Functions are required to be OPERABLE in MODES 1, 2, and 3 where considerable energy exists; thus, there is a probability of pipe breaks resulting in significant releases of radioactive steam and gas. In MODES 4 and 5, the probability and consequences of these events are low due to the RCS pressure and temperature limitations of these MODES; thus, these Functions are not required. In addition, the Functions are required to be OPERABLE during CORE ALTERATIONS, OPDRVs, and movement of irradiated fuel assemblies in the secondary containment because the capability of detecting radiation releases due to fuel failures (due to fuel uncovery or dropped fuel assemblies) must be provided to ensure that offsite dose limits are not exceeded.

5. Manual Initiation

The Manual Initiation push button channels introduce signals into the secondary containment isolation logic that are redundant to the automatic protective instrumentation channels, and provide manual isolation capability. There is

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BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

5. Manual Initiation (continued)

no specific UFSAR safety analysis that takes credit for this Function. It is retained for the overall redundancy and diversity of the secondary containment isolation instrumentation as required by the NRC approved licensing basis.

There is one manual initiation push button for the logic per trip system. Two channels of the Manual Initiation Function are available and are required to be OPERABLE in MODES 1, 2, and 3 and during CORE ALTERATIONS, OPDRVs, and movement of irradiated fuel assemblies in the secondary containment, since these are the MODES and other specified conditions in which the Secondary Containment Isolation automatic Functions are required to be OPERABLE. There is no Allowable Value for this Function since the channels are mechanically actuated based solely on the position of the push buttons.

ACTIONS

A Note has been provided to modify the ACTIONS related to secondary containment isolation instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition discovered to be inoperable or not within limits will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable secondary containment isolation instrumentation channels provide appropriate compensatory measures for separate inoperable channels. As such, a Note has been provided that allows separate Condition entry for each inoperable secondary containment isolation instrumentation channel.

A.1

Because of the diversity of sensors available to provide isolation signals and the redundancy of the isolation design, an allowable out of service time of 12 hours or 24 hours, depending on the Function (12 hours for those

(continued)

BASES

ACTIONS

A.1 (continued)

Functions that have channel components common to RPS instrumentation and 24 hours for those Functions that do not have channel components common to RPS instrumentation), has been shown to be acceptable (Refs. 3 and 4) to permit restoration of any inoperable channel to OPERABLE status. This out of service time is only acceptable provided the associated Function is still maintaining isolation capability (refer to Required Action B.1 Bases). If the inoperable channel cannot be restored to OPERABLE status within the allowable out of service time, the channel must be placed in the tripped condition per Required Action A.1. Placing the inoperable channel in trip would conservatively compensate for the inoperability, restore capability to accommodate a single failure, and allow operation to continue. Alternately, if it is not desired to place the channel in trip (e.g., as in the case where placing the inoperable channel in trip would result in an isolation), Condition C must be entered and its Required Actions taken.

B.1

Required Action B.1 is intended to ensure that appropriate actions are taken if multiple, inoperable, untripped channels within the same Function result in a complete loss of automatic isolation capability for the associated penetration flow path(s) or a complete loss of automatic initiation capability for the SGT System. A Function is considered to be maintaining isolation capability when sufficient channels are OPERABLE or in trip, such that one trip system will generate a trip signal from the given Function on a valid signal. This ensures that one of the two SCIVs in the associated penetration flow path and the SGT subsystems can be initiated on an isolation signal from the given Function. For the Functions with two two-out-of-two logic trip systems (Functions 1, 2, 3, and 4), this would require one trip system to have two channels, each OPERABLE or in trip. The Condition does not include the Manual Initiation Function (Function 5), since it is not assumed in any accident or transient analysis. Thus, a total loss of manual initiation capability for 24 hours (as allowed by Required Action A.1) is allowed.

(continued)

BASES

ACTIONS

B.1 (continued)

The Completion Time is intended to allow the operator time to evaluate and repair any discovered inoperabilities. The 1 hour Completion Time is acceptable because it minimizes risk while allowing time for restoration or tripping of channels.

C.1.1, C.1.2, C.2.1, and C.2.2

If any Required Action and associated Completion Time are not met, the ability to isolate the secondary containment and start the SGT System cannot be ensured. Therefore, further actions must be performed to ensure the ability to maintain the secondary containment function. Isolating the associated penetration flow path(s) and starting the associated SGT subsystem(s) (Required Actions C.1.1 and C.2.1) performs the intended function of the instrumentation and allows operations to continue. The method used to place the SGT subsystem(s) in operation must provide for automatically reinitiating the subsystem(s) upon restoration of power following a loss of power to the SGT subsystem(s).

Alternatively, declaring the associated SCIV(s) or SGT subsystem(s) inoperable (Required Actions C.1.2 and C.2.2) is also acceptable since the Required Actions of the respective LCOs (LCO 3.6.4.2 and LCO 3.6.4.3) provide appropriate actions for the inoperable components.

One hour is sufficient for plant operations personnel to establish required plant conditions or to declare the associated components inoperable without challenging plant systems.

SURVEILLANCE REQUIREMENTS

As noted at the beginning of the SRs, the SRs for each Secondary Containment Isolation instrumentation Function are located in the SRs column of Table 3.3.6.2-1.

The Surveillances are also modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

for up to 6 hours, provided the associated Function maintains isolation capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Action(s) taken.

This Note is based on the reliability analysis (Refs. 3 and 4) assumption of the average time required to perform channel surveillance. That analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that the SCIVs will isolate the associated penetration flow paths and the SGT System will initiate when necessary.

SR 3.3.6.2.1

Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the indicated parameter for one instrument channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff, based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limit.

The Frequency is based on operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the channels required by the LCO.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.6.2.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the channel will perform the intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

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

SR 3.3.6.2.3

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

The Frequency is based upon the assumption of a 24 month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.6.2.4

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

The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 24 month Frequency.

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BASES (continued)

REFERENCES

1. UFSAR, Section 15.6.5.
2. UFSAR, Section 15.7.4.
3. NEDC-31677-P-A, "Technical Specification Improvement Analysis for BWR Isolation Actuation Instrumentation," July 1990.
4. NEDC-30851-P-A Supplement 2, "Technical Specifications Improvement Analysis for BWR Isolation Instrumentations Common to RPS and ECCS Instrumentation," March 1989.

B 3.3 INSTRUMENTATION

B 3.3.7.1 Control Room Area Filtration (CRAF) System Instrumentation

BASES

BACKGROUND

The CRAF System is designed to provide a radiologically controlled environment to ensure the habitability of the control room for the safety of control room operators under all plant conditions. Two independent CRAF subsystems are each capable of fulfilling the stated safety function. The instrumentation and controls for the CRAF System automatically initiate action to isolate and pressurize the control room area to minimize the consequences of radioactive material in the control room area environment.

In the event of a Control Room Air Intake Radiation—High signal, the CRAF System is automatically placed in the pressurization mode. In this mode the normal outside air supply to the system is closed and is diverted to the emergency makeup filter train where it passes through a charcoal filter and is delivered to the suction of the control room return air fan and the suction of the auxiliary electric equipment room supply fan. Recirculated control room air is combined with the emergency makeup filter train air and delivered to the control room area via the supply fan. The addition of outside air through the emergency filter train will keep the control room area slightly pressurized with respect to surrounding areas. A description of the CRAF System is provided in the Bases for LCO 3.7.4, "Control Room Area Filtration (CRAF) System."

The CRAF System (Ref. 1) instrumentation has 4 trip systems, two for each of the air intakes: two trip systems initiate one CRAF subsystem, while the other trip systems initiate the other CRAF subsystem. For each CRAF subsystem, the associated two trip systems are arranged in a one-out-of-two logic (i.e., either trip system can actuate the CRAF subsystem). Each trip system receives input from two Control Room Air Intake Radiation—High channels. The Control Room Air Intake Radiation—High channels are arranged in a two-out-of-two logic for each trip system. The channels include electronic equipment (e.g., trip units)

(continued)

BASES

BACKGROUND (continued)	that compares measured input signals with pre-established setpoints. When the setpoint is exceeded, the channel output relay actuates, which then outputs a CRAF System initiation signal to the initiation logic.
APPLICABLE SAFETY ANALYSES	The ability of the CRAF System to maintain the habitability of the control room area is explicitly assumed for certain accidents as discussed in the UFSAR safety analyses (Refs. 2 and 3). CRAF System operation ensures that the radiation exposure of control room personnel, through the duration of any one of the postulated accidents, does not exceed the limits set by GDC 19 of 10 CFR 50, Appendix A. CRAF System instrumentation satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).
LCO	High radiation at the intake ducts of the control room outside air intakes is an indication of possible gross failure of the fuel cladding. The release may have originated from the primary containment due to a break in the RCPB or the refueling floor due to a fuel handling accident. When control room air intake high radiation is detected, the associated CRAF subsystem is automatically initiated in the pressurization mode since this radiation release could result in radiation exposure to control room personnel. The Control Room Air Intake Radiation — High Function consists of eight independent monitors, with four monitors associated with one CRAF subsystem and the other four monitors associated with the other CRAF subsystem. Each of the four monitors associated with a CRAF subsystem are arranged in two trip systems, with each trip system containing two radiation monitors. Eight channels of the Control Room Air Intake Radiation — High Function are available and required to be OPERABLE to ensure no single instrument failure can preclude CRAF System initiation. The Allowable Value was selected to ensure protection of the control room personnel.

(continued)

BASES

LCO (continued)	Each channel must have its setpoint set within the specified Allowable Value of SR 3.3.7.1.3. The actual setpoint is calibrated consistent with applicable setpoint methodology assumptions. Nominal trip setpoints are specified in the setpoint calculations. These nominal setpoints are selected to ensure that the setpoints do not exceed the Allowable Value between successive CHANNEL CALIBRATIONS. Operation with a trip setpoint that is less conservative than the nominal trip setpoint, but within its Allowable Value, is acceptable. A channel is inoperable if its actual trip setpoint is not within its required Allowable Value. Trip setpoints are those predetermined values of output at which an action should take place. The setpoints are compared to the actual process parameter (e.g., control room air intake radiation), and when the measured output value of the process parameter exceeds the setpoint, the associated device (e.g., trip unit) changes state. The analytic limits are derived from the limiting values of the process parameters obtained from the safety analysis. The trip setpoints are determined from the analytic limits, corrected for defined process, calibration, and instrument errors. The Allowable Values are then determined, based on the trip setpoint values, by accounting for the calibration based errors. These calibration based errors are limited to reference accuracy, instrument drift, errors associated with measurement and test equipment, and calibration tolerance of loop components. The trip setpoints and Allowable Values determined in this manner provide adequate protection because instrument uncertainties, process effects, calibration tolerances, instrument drift, and severe environment errors (for channels that must function in harsh environments as defined by 10 CFR 50.49) are accounted for and appropriately applied for the instrumentation.
APPLICABILITY	The Control Room Air Intake Radiation—High Function is required to be OPERABLE in MODES 1, 2, and 3, and during CORE ALTERATIONS, OPDRVs, and movement of irradiated fuel in the secondary containment to ensure that control room personnel are protected during a LOCA, fuel handling event, or a vessel draindown event. During MODES 4 and 5, when these specified conditions are not in progress (e.g., CORE ALTERATIONS), the probability of a LOCA or fuel damage is low; thus, the Function is not required.

(continued)

BASES (continued)

ACTIONS

A Note has been provided to modify the ACTIONS related to CRAF System instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition discovered to be inoperable or not within limits will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable CRAF System instrumentation channels provide appropriate compensatory measures for separate inoperable channels. As such, a Note has been provided that allows separate Condition entry for each inoperable CRAF System instrumentation channel.

A.1 and A.2

Because of the redundancy of sensors available to provide initiation signals and the redundancy of the CRAF System design, an allowable out of service time of 6 hours is provided to permit restoration of any inoperable channel to OPERABLE status. However, this out of service time is only acceptable provided the Function is still maintaining CRAF subsystem initiation capability. A Function is considered to be maintaining CRAF subsystem initiation capability when sufficient channels are OPERABLE or in trip, such that at least one trip system will generate an initiation signal on a valid signal. This would require one trip system to have two channels, each OPERABLE or in trip. In this situation (loss of CRAF subsystem initiation capability), the 6 hour allowance of Required Action A.2 is not appropriate. If the Function is not maintaining CRAF subsystem initiation capability, the CRAF subsystem must be declared inoperable within 1 hour of discovery of loss of CRAF subsystem initiation capability.

This Completion Time also allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." For Required Action A.1, the Completion Time only begins upon discovery that the CRAF subsystem cannot be automatically initiated due to inoperable, untripped Control

(continued)

BASES

ACTIONS

A.1 and A.2 (continued)

Room Air Intake Radiation—High channels in both trip systems in any air intake. The 1 hour Completion Time is acceptable because it minimizes risk while allowing time for restoring or tripping of channels. If it is not desired to declare the CRAF subsystem inoperable, Condition B may be entered and Required Action B.1 taken.

If the inoperable channel cannot be restored to OPERABLE status within the allowable out of service time, the channel must be placed in the tripped condition, per Required Action A.2. Placing the inoperable channel in trip performs the intended function of the channel. Alternately, if it is the second channel and it is not desired to place the channel in trip (e.g., as in the case where it is not desired to start the subsystem), Condition B must be entered and its Required Actions taken.

The 6 hour Completion Time is based on the consideration that this Function provides the primary signal to start the CRAF subsystem, thus ensuring that the design basis of the CRAF subsystem is met.

B.1 and B.2

With any Required Action and associated Completion Time not met, the associated CRAF subsystem must be placed in the pressurization mode of operation (Required Action B.1) to ensure that control room personnel will be protected in the event of a Design Basis Accident. The method used to place the CRAF subsystem in operation must provide for automatically reinitiating the subsystem upon restoration of power following a loss of power to the CRAF subsystem(s). Alternately, if it is not desired to start the subsystem, the CRAF subsystem associated with inoperable, untripped channels must be declared inoperable within 1 hour.

The 1 hour Completion Time is intended to allow the operator time to place the CRAF subsystem in operation. The 1 hour Completion Time is acceptable because it minimizes risk while allowing time for restoration or tripping of channels, or for placing the associated CRAF subsystem in operation.

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours, provided the associated Function maintains CRAF subsystem initiation capability. Upon completion of the surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. This Note is based on the reliability analysis (Refs. 4 and 5) assumption of the average time required to perform channel surveillance. That analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that the CRAF System will initiate when necessary.

SR 3.3.7.1.1

Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the indicated parameter for one instrument channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limit.

The Frequency is based upon operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channel status during normal operational use of the displays associated with channels required by the LCO.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.7.1.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the channel will perform the intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

The Frequency of 92 days is based on the reliability analyses of References 4 and 5.

SR 3.3.7.1.3

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

The Frequency is based on the assumption of a 24 month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.7.1.4

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required initiation logic for a specific channel. The system functional testing performed in LCO 3.7.4, "Control Room Area Filtration (CRAF) System," overlaps this Surveillance to provide complete testing of the assumed safety function.

While the Surveillance can be performed with the reactor at power, operating experience has shown these components usually pass the Surveillance when performed at the 24 month Frequency, which is based on the refueling cycle. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

(continued)

BASES (continued)

REFERENCES

1. UFSAR, Sections 7.3.4 and 9.4.1.
2. UFSAR, Section 6.4.
3. UFSAR, Chapter 15.
4. GENE-770-06-1A, "Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications," December 1992.
5. NEDC-31677P-A, "Technical Specification Improvement Analysis for BWR Isolation Actuation Instrumentation," July 1990.

B 3.3 INSTRUMENTATION

B 3.3.8.1 Loss of Power (LOP) Instrumentation

BASES

BACKGROUND

Successful operation of the required safety functions of the Emergency Core Cooling Systems (ECCS) is dependent upon the availability of adequate power sources for energizing the various components such as pump motors, motor operated valves, and the associated control components. The LOP instrumentation monitors the 4.16 kV emergency buses. Offsite power is the preferred source of power for the 4.16 kV emergency buses. If the monitors determine that insufficient voltage is available, the buses are disconnected from the offsite power sources and connected to the onsite diesel generator (DG) power sources.

Each 4.16 kV emergency bus has its own independent LOP instrumentation and associated trip logic. The voltage for the Division 1, 2, and 3 buses is monitored at two levels, which can be considered as two different undervoltage functions: loss of voltage and degraded voltage.

For Division 1 and 2, each loss of voltage and degraded voltage function is monitored by two instruments per bus whose output trip contacts are arranged in a two-out-of-two logic configuration per bus (Ref. 1). The loss of voltage signal is generated when a loss of voltage occurs for a specific time interval. Lower voltage conditions will result in decreased trip times for the inverse time undervoltage relays. The degraded voltage signal is generated when a degraded voltage occurs for a specified time interval; the time interval is dependent upon whether a loss of coolant accident signal is present. The relays utilized are inverse time delay voltage relays or instantaneous voltage relays with a time delay.

For Division 3, the degraded voltage function logic is the same as for Divisions 1 and 2, but the Division 3 loss of voltage function logic is different. The Division 3 DG will auto-start if either one of the two bus undervoltage relays (with a time delay) actuates and the DG output breaker will automatically close with the same undervoltage permissive provided that the Division 3 bus main feeder breaker is open and the DG speed and voltage permissives are met. The Division 3 bus main feed breaker trip logic includes two

(continued)

BASES

BACKGROUND (continued)	trip systems. Each trip system consists of an undervoltage relay on the 4.16 kV bus (with a time delay) and an undervoltage relay on the system auxiliary transformer (SAT) side of the main feed breaker to the 4.16 kV bus (with no time delay) arranged in a two-out-of-two logic. The trip setting of the SAT undervoltage relay is maintained such that it trips prior to the bus undervoltage relay. Either trip system will open (trip) the main feed breaker to the bus. A loss of voltage signal or degraded voltage signal results in the start of the associated DG, the trip of the normal and alternate offsite power supply breakers to the associated 4.16 kV emergency bus, and (for Divisions 1 and 2 only) the shedding of the appropriate 4.16 kV bus loads.
APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	The LOP instrumentation is required for the Engineered Safety Features to function in any accident with a loss of offsite power. The required channels of LOP instrumentation ensure that the ECCS and other assumed systems powered from the DGs provide plant protection in the event of any of the analyzed accidents in References 2, 3, and 4 in which a loss of offsite power is assumed. The initiation of the DGs on loss of offsite power, and subsequent initiation of the ECCS, ensure that the fuel peak cladding temperature remains below the limits of 10 CFR 50.46. Accident analyses credit the loading of at least two of the DGs based on the loss of offsite power coincident with a loss of coolant accident (LOCA). The diesel starting and loading times have been included in the delay time associated with each safety system component requiring DG supplied power following a loss of offsite power. The LOP instrumentation satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii). The OPERABILITY of the LOP instrumentation is dependent upon the OPERABILITY of the individual instrumentation channel Functions specified in Table 3.3.8.1-1. Each Function must have a required number of OPERABLE channels per 4.16 kV emergency bus, with their setpoints within the specified Allowable Values. The actual setpoint is calibrated consistent with applicable setpoint methodology assumptions.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

The Allowable Values are specified for each Function in the Table. Nominal trip setpoints are specified in the setpoint calculations. The nominal setpoints are selected to ensure that the setpoint does not exceed the Allowable Value between CHANNEL CALIBRATIONS. Operation with a trip setpoint less conservative than the nominal trip setpoint, but within the Allowable Value, is acceptable. A channel is inoperable if its actual trip setpoint is not within its required Allowable Value. Trip setpoints are those predetermined values of output at which an action should take place. The setpoints are compared to the actual process parameter (e.g., degraded voltage), and when the measured output value of the process parameter exceeds the setpoint, the associated device (e.g., trip unit) changes state. The analytic limits are derived from the limiting values of the process parameters obtained from the safety analysis. The trip setpoints are determined from the analytic limits, corrected for defined process, calibration, and instrument errors. The Allowable Values are then determined, based on the trip setpoint values, by accounting for the calibration based errors. These calibration based errors are limited to reference accuracy, instrument drift, errors associated with measurement and test equipment, and calibration tolerance of loop components. The trip setpoints and Allowable Values determined in this manner provide adequate protection because instrument uncertainties, process effects, calibration tolerances, instrument drift, and severe environment errors (for channels that must function in harsh environments as defined by 10 CFR 50.49) are accounted for and appropriately applied for the instrumentation.

The specific Applicable Safety Analyses, LCO, and Applicability discussions are listed below on a Function by Function basis.

4.16 kV Emergency Bus Undervoltage

1.a, 2.a, 2.b. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage)

Loss of voltage on a 4.16 kV emergency bus indicates that offsite power may be completely lost to the respective emergency bus and is unable to supply sufficient power for proper operation of the applicable equipment. Therefore,

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

4.16 kV Emergency Bus Undervoltage

1.a, 2.a, 2.b. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage) (continued)

the power supply to the bus is transferred from the offsite power supply to DG power. This transfer is initiated when the voltage on the bus drops below the relay settings either with an inverse time relation that is bounded by the allowable voltage with time delay values or with an undervoltage threshold with a fixed time delay that is bounded by upper and lower Allowable Values. This ensures that adequate power will be available to the required equipment.

The Bus Undervoltage Allowable Values are low enough to prevent inadvertent power supply transfer, but high enough to ensure power is available to the required equipment. The Time Delay Allowable Values are long enough to provide time for the offsite power supply to recover to normal voltages, but short enough to ensure that power is available to the required equipment.

Two channels of each 4.16 kV Emergency Bus Undervoltage (Loss of Voltage) Function per associated emergency bus are required to be OPERABLE when the associated DG is required to be OPERABLE to ensure that no single instrument failure can preclude the DG function. For the Division 1 and 2 4.16 kV emergency buses, the Loss of Voltage Function is the 4.16 kV basis and time delay. For the Division 3 4.16 kV emergency bus, the Loss of Voltage Functions are: 1) 4.16 kV Basis and 2) Time Delay. Refer to LCO 3.8.1, "AC Sources—Operating," and LCO 3.8.2, "AC Sources—Shutdown," for Applicability Bases for the DGs.

1.b, 1.c, 1.d, 2.c, 2.d, 2.e. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)

A reduced voltage condition on a 4.16 kV emergency bus indicates that while offsite power may not be completely lost to the respective emergency bus, power may be insufficient for starting large motors without risking damage to the motors that could disable the ECCS function. Therefore, power supply to the bus is transferred from offsite power to onsite DG power when the voltage on the bus

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

1.b, 1.c, 1.d, 2.c, 2.d, 2.e. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage) (continued)

drops below the Degraded Voltage Function Allowable Values (degraded voltage with a time delay). This ensures that adequate power will be available to the required equipment.

The Bus Undervoltage Allowable Values are low enough to prevent inadvertent power supply transfer, but high enough to ensure that sufficient power is available to the required equipment. The Time Delay Allowable Values are long enough to provide time for the offsite power supply to recover to normal voltages, but short enough to ensure that sufficient power is available to the required equipment.

Two channels of each 4.16 kV Emergency Bus Undervoltage (Degraded Voltage) Function per associated emergency bus are required to be OPERABLE when the associated DG is required to be OPERABLE to ensure that no single instrument failure can preclude the DG function. The Degraded Voltage Functions are: 1) 4.16 kV Basis; 2) Time Delay, No LOCA; and 3) Time Delay, LOCA. Refer to LCO 3.8.1 and LCO 3.8.2 for Applicability Bases for the DGs.

ACTIONS

A Note has been provided to modify the ACTIONS related to LOP instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition discovered to be inoperable or not within limits will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable LOP instrumentation channels provide appropriate compensatory measures for separate inoperable channels. As such, a Note has been provided that allows separate Condition entry for each inoperable LOP instrumentation channel.

(continued)

BASES

ACTIONS (continued)

A.1

With one or more channels of a Function inoperable, the Function may not be capable of performing the intended function. Therefore, only 1 hour is allowed to restore the inoperable channel to OPERABLE status. If the inoperable channel cannot be restored to OPERABLE status within the allowable out of service time, the channel must be placed in the tripped condition per Required Action A.1. Placing the inoperable channel in trip would conservatively compensate for the inoperability, restore capability to accommodate a single failure, and allow operation to continue. Alternately, if it is not desired to place the channel in trip (e.g., as in the case where placing the channel in trip would result in a DG initiation), Condition B must be entered and its Required Action taken.

The Completion Time is intended to allow the operator time to evaluate and repair any discovered inoperabilities. The 1 hour Completion Time is acceptable because it minimizes risk while allowing time for restoration or tripping of channels.

B.1

If any Required Action and associated Completion Time is not met, the associated Function may not be capable of performing the intended function. Therefore, the associated DG(s) are declared inoperable immediately. This requires entry into applicable Conditions and Required Actions of LCO 3.8.1 and LCO 3.8.2, which provide appropriate actions for the inoperable DG(s).

SURVEILLANCE REQUIREMENTS

As noted at the beginning of the SRs, the SRs for each LOP Instrumentation Function are located in the SRs column of Table 3.3.8.1-1.

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 2 hours provided the associated Function maintains LOP initiation capability. LOP initiation capability is

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

maintained provided the associated Function can perform the load shed and control scheme for two of the three 4.16 kV emergency buses. Upon completion of the Surveillance, or expiration of the 2 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken.

SR 3.3.8.1.1

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the channel will perform the intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

The Frequency of 24 months is based on plant operating experience with regard to channel OPERABILITY and drift that demonstrates that failure of more than one channel of a given Function in any 24 month interval is rare.

SR 3.3.8.1.2

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

The Frequency is based on the assumption of an 24 month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.8.1.3

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

(continued)

BASES

SURVEILLANCE REQUIREMENTS	SR 3.3.8.1.3 (continued) The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 24 month Frequency.
REFERENCES	1. UFSAR, Section 8.2.3.3. 2. UFSAR, Section 5.2. 3. UFSAR, Section 6.3. 4. UFSAR, Chapter 15.

B 3.3 INSTRUMENTATION

B 3.3.8.2 Reactor Protection System (RPS) Electric Power Monitoring

BASES

BACKGROUND

The RPS Electric Power Monitoring System is provided to isolate the RPS bus from the motor generator (MG) set or the alternate power supply in the event of overvoltage, undervoltage, or underfrequency. This system protects the loads connected to the RPS bus against unacceptable voltage and frequency conditions (Ref. 1) and forms an important part of the primary success path for the essential safety circuits. Some of the essential equipment powered from the RPS buses includes the RPS logic, scram solenoids, and various valve isolation logic.

The RPS Electric Power Monitoring assembly will detect any abnormal high or low voltage or low frequency condition in the outputs of the two MG sets or the alternate power supply and will de-energize its respective RPS bus, thereby causing all safety functions normally powered by this bus to de-energize.

In the event of failure of an RPS Electric Power Monitoring System (e.g., both inseries electric power monitoring assemblies), the RPS loads may experience significant effects from the unregulated power supply. Deviation from the nominal conditions can potentially cause damage to the scram and MSIV trip solenoids and other Class 1E devices.

In the event of a low voltage condition, for an extended period of time, the scram and MSIV trip solenoids can chatter and potentially lose their pneumatic control capability, resulting in a loss of primary scram and MSIV closure action.

In the event of an overvoltage condition, the RPS and isolation logic relays and scram solenoids, as well as the main steam isolation valve trip solenoids, may experience a voltage higher than their design voltage. If the overvoltage condition persists for an extended time period, it may cause equipment degradation and the loss of plant safety function.

(continued)

BASES

BACKGROUND (continued)	Two redundant Class 1E circuit breakers are connected in series between each RPS bus and its MG set, and between each RPS bus and the alternate power supply. Each of these circuit breakers has an associated independent set of Class 1E overvoltage, undervoltage, and underfrequency sensing logic. Together, a circuit breaker and its sensing logic constitute an electric power monitoring assembly. If the output of the inservice MG set or alternate power supply exceeds the predetermined limits of overvoltage, undervoltage, or underfrequency, a trip coil driven by this logic circuitry opens the circuit breaker, which removes the associated power supply from service.
APPLICABLE SAFETY ANALYSES	RPS Electric Power Monitoring is necessary to meet the assumptions of the safety analyses by ensuring that the equipment powered from the RPS buses can perform its intended function. RPS Electric Power Monitoring provides protection to the RPS and other systems that receive power from the RPS buses, by disconnecting the RPS from the power supply under specified conditions that could damage the RPS bus powered equipment. RPS Electric Power Monitoring satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).
LCO	The OPERABILITY of each RPS electric power monitoring assembly is dependent upon the OPERABILITY of the overvoltage, undervoltage, and underfrequency logic, as well as the OPERABILITY of the associated circuit breaker. Two electric power monitoring assemblies are required to be OPERABLE for each inservice power supply. This provides redundant protection against any abnormal voltage or frequency conditions to ensure that no single RPS electric power monitoring assembly failure can preclude the function of RPS bus powered components. Each of the inservice electric power monitoring assembly trip logic setpoints is required to be within the specific Allowable Value. The actual setpoint is calibrated consistent with applicable setpoint methodology assumptions.

(continued)

BASES

LCO (continued)

Allowable Values are specified for each RPS electric power monitoring assembly trip logic (refer to SR 3.3.8.2.2). Nominal trip setpoints are specified in the setpoint calculations. The nominal setpoints are selected to ensure that the setpoints do not exceed the Allowable Value between CHANNEL CALIBRATIONS. Operation with a trip setpoint less conservative than the nominal trip setpoint, but within its Allowable Value, is acceptable. A channel is inoperable if its actual trip setpoint is not within its required Allowable Value. Trip setpoints are those predetermined values of output at which an action should take place. The setpoints are compared to the actual process parameter (e.g., overvoltage), and when the measured output value of the process parameter exceeds the setpoint, the associated device (e.g., trip coil) changes state. The analytic limits are derived from the limiting values of the process parameters obtained from the safety analysis. The trip setpoints are determined from the analytic limits, corrected for defined process, calibration, and instrument errors. The Allowable Values are then determined, based on the trip setpoint values, by accounting for the calibration based errors. These calibration based errors are limited to reference accuracy, instrument drift, errors associated with measurement and test equipment, and calibration tolerance of loop components. The trip setpoints and Allowable Values determined in this manner provide adequate protection because instrument uncertainties, process effects, calibration tolerances, instrument drift, and severe environment errors (for channels that must function in harsh environments as defined by 10 CFR 50.49) are accounted for and appropriately applied for the instrumentation.

The Allowable Values for the instrument settings are based on the RPS providing ≥ 57 Hz and 120 V ± 10%. The most limiting voltage requirement and associated line losses determine the settings of the electric power monitoring instrument channels. The settings are calculated based on the loads on the buses and RPS MG set or alternate power supply being 120 VAC and 60 Hz.

(continued)

BASES (continued)

APPLICABILITY

The operation of the RPS electric power monitoring assemblies is essential to disconnect the RPS bus powered components from the inservice MG set or alternate power supply during abnormal voltage or frequency conditions. Since the degradation of a nonclass 1E source supplying power to the RPS bus can occur as a result of any random single failure, the OPERABILITY of the RPS electric power monitoring assemblies is required when the RPS bus powered components are required to be OPERABLE. This results in the RPS Electric Power Monitoring System OPERABILITY being required in MODES 1, 2, and 3, MODES 4 and 5, with residual heat removal (RHR) shutdown cooling isolation valves open, MODE 5 with any control rod withdrawn from a core cell containing one or more fuel assemblies, during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, and during operations with a potential for draining the reactor vessel (OPDRVs).

ACTIONS

A.1

If one RPS electric power monitoring assembly for an inservice power supply (MG set or alternate) is inoperable, or one RPS electric power monitoring assembly on each inservice power supply is inoperable, the OPERABLE assembly will still provide protection to the RPS bus powered components under degraded voltage or frequency conditions. However, the reliability and redundancy of the RPS Electric Power Monitoring System are reduced and only a limited time (72 hours) is allowed to restore the inoperable assembly(s) to OPERABLE status. If the inoperable assembly(s) cannot be restored to OPERABLE status, the associated power supply must be removed from service (Required Action A.1). This places the RPS bus in a safe condition. An alternate power supply with OPERABLE power monitoring assemblies may then be used to power the RPS bus.

The 72 hour Completion Time takes into account the remaining OPERABLE electric power monitoring assembly and the low probability of an event requiring RPS Electric Power Monitoring protection occurring during this period. It allows time for plant operations personnel to take corrective actions or to place the plant in the required condition in an orderly manner and without challenging plant systems.

(continued)

BASES

ACTIONS

A.1 (continued)

Alternatively, if it is not desired to remove the power supply(s) from service (e.g., as in the case where removing the power supply(s) from service would result in a scram or isolation), Condition C, D, E, or F as applicable, must be entered and its Required Actions taken.

B.1

If both power monitoring assemblies for an inservice power supply (MG set or alternate) are inoperable, or both power monitoring assemblies in each inservice power supply are inoperable, the system protective function is lost. In this condition, 1 hour is allowed to restore one assembly to OPERABLE status for each inservice power supply. If one inoperable assembly for each inservice power supply cannot be restored to OPERABLE status, the associated power supplies must be removed from service within 1 hour (Required Action B.1). An alternate power supply with OPERABLE assemblies may then be used to power one RPS bus. The 1 hour Completion Time is sufficient for the plant operations personnel to take corrective actions and is acceptable because it minimizes risk while allowing time for restoration or removal from service of the electric power monitoring assemblies.

Alternately, if it is not desired to remove the power supply(s) from service (e.g., as in the case where removing the power supply(s) from service would result in a scram or isolation), Condition C, D, E, or F as applicable, must be entered and its Required Actions taken.

C.1 and C.2

If any Required Action and associated Completion Time of Condition A or B are not met in MODE 1, 2, or 3, a plant shutdown must be performed. This places the plant in a condition where minimal equipment, powered through the inoperable RPS electric power monitoring assembly(s), is required and ensures that the safety function of the RPS bus loads (e.g., scram of control rods) is not required. The

(continued)

BASES

ACTIONS

C.1 and C.2 (continued)

plant shutdown is accomplished by placing the plant in MODE 3 within 12 hours and in MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

D.1 and D.2

If any Required Action and associated Completion Time of Condition A or B are not met in MODE 4 or 5 with RHR SDC isolation valves open, action must be immediately initiated to either restore one electric power monitoring assembly to OPERABLE status for the inservice power source supplying the required instrumentation powered from the RPS bus (Required Action D.1) or to isolate the RHR SDC System (Required Action D.2). Required Action D.1 is provided because the RHR SDC System may be needed to provide core cooling. All actions must continue until the applicable Required Actions are completed.

E.1

If any Required Action and associated Completion Time of Condition A or B are not met in MODE 5 with any control rod withdrawn from a core cell containing one or more fuel assemblies, the operator must immediately initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies (Required Action E.1). This Required Action results in the least reactive condition for the reactor core and ensures that the safety function of the RPS (e.g., scram of control rods) is not required.

F.1.1, F.1.2, F.2.1, and F.2.2

If any Required Action and associated Completion Time of Condition A or B are not met during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs, the ability to isolate the

(continued)

BASES

ACTIONS

F.1.1, F.1.2, F.2.1, and F.2.2 (continued)

secondary containment and start the Standby Gas Treatment (SGT) System cannot be ensured. Therefore, actions must be immediately performed to ensure the ability to maintain the secondary containment and SGT System functions. Isolating the affected penetration flow path(s) and starting the associated SGT subsystem(s) (Required Actions F.1.1 and F.2.1) performs the intended function of the instrumentation the RPS electric power monitoring assemblies is protecting, and allows operations to continue.

Alternatively, immediately declaring the associated secondary containment isolation valve(s) or SGT subsystem(s) inoperable (Required Action F.1.2 and F.2.2) is also acceptable since the Required Actions of the respective LCOs (LCO 3.6.4.2 and LCO 3.6.4.3) provide appropriate actions for the inoperable components.

SURVEILLANCE REQUIREMENTS

SR 3.3.8.2.1

A CHANNEL FUNCTIONAL TEST is performed on each overvoltage, undervoltage, and underfrequency channel to ensure that the channel will perform the intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

As noted in the Surveillance, the CHANNEL FUNCTIONAL TEST is only required to be performed while the plant is in a condition in which the loss of the RPS bus will not jeopardize steady state power operation (the design of the system is such that the power source must be removed from service to conduct the Surveillance). The 24 hours is intended to indicate an outage of sufficient duration to allow for scheduling and proper performance of the Surveillance. The 184 day Frequency and the Note in the Surveillance are based on guidance provided in Generic Letter 91-09 (Ref. 2).

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.8.2.2

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

The Frequency is based upon the assumption of an 24 month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.8.2.3

Performance of a system functional test demonstrates that, with a required system actuation (simulated or actual) signal, the logic of the system will automatically trip open the associated power monitoring assembly circuit breaker. The system functional test shall include actuation of the protective relays, tripping logic, and output circuit breakers. Only one signal per power monitoring assembly is required to be tested. This Surveillance overlaps with the CHANNEL CALIBRATION to provide complete testing of the safety function. The system functional test of the Class 1E circuit breakers is included as part of this test to provide complete testing of the safety function. If the breakers are incapable of operating, the associated electric power monitoring assembly would be inoperable.

The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 24 month Frequency.

(continued)

BASES (continued)

REFERENCES

1. UFSAR, Section 8.3.1.1.3.

2. NRC Generic Letter 91-09, "Modification of Surveillance Interval for the Electric Protective Assemblies in Power Supplies for the Reactor Protection System."

3/4.3 INSTRUMENTATION

A.1

3/4.3.1 REACTOR PROTECTION SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

LCO 3.3.1.1 — 3.3.1 As a minimum, the reactor protection system instrumentation channels shown in Table 3.3.1-1 shall be OPERABLE with the REACTOR PROTECTION SYSTEM RESPONSE TIME ~~as shown in Table 3.3.1-2~~. LA.1

SR 3.3.1.1.17

APPLICABILITY: As shown in Table 3.3.1-1.

ACTION: Add proposed ACTIONS NOTE 1 — A.2

Action A — a. With one channel required by Table 3.3.1-1 inoperable ~~in one or more Functional Units~~, place the inoperable channel and/or that trip system in the tripped condition* within 12 hours. LA.2

Actions A, B, and C — b. With two or more channels required by Table 3.3.1-1 inoperable in one or more Functional Units: LA.2

Action C — 1. Within one hour, verify sufficient channels remain OPERABLE or tripped* to maintain trip capability in the Functional Unit, and

Action B — 2. Within 6 hours, place the inoperable channel(s) in one trip system and/or that trip system** in the tripped condition*, and LA.2

Action A — 3. Within 12 hours, restore the inoperable channels in the other trip system to an OPERABLE status or tripped*. LA.2

Action D — c. Otherwise, take the ACTION required by Table 3.3.1-1 for the Functional Unit.

SURVEILLANCE REQUIREMENTS

Note 1 to Surveillance Requirements — 4.3.1.1 Each reactor protection system instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations for the OPERATIONAL CONDITIONS and at the frequencies shown in Table 4.3.1.1-1. LA.3

SR 3.3.1.1.15 — 4.3.1.2 LOGIC SYSTEM FUNCTIONAL TESTS ~~and simulated automatic operation~~ of all channels shall be performed at least once per ~~18~~ 24 months. LD.1

SR 3.3.1.1.17 — 4.3.1.3 The REACTOR PROTECTION SYSTEM RESPONSE TIME of each reactor trip functional unit shown in Table 3.3.1-2 shall be demonstrated to be within its limit at least once per ~~18~~ months. ~~Each test shall include at least one channel per trip system such that all channels are tested at least once every N times 18 months where N is the total number of redundant channels in a specific reactor trip system.~~ A.3

Add proposed Note 4 — A.3

~~* An inoperable channel or trip system need not be placed in the tripped condition where this would cause the Trip Function to occur.~~ In these cases, if the inoperable channel is not restored to OPERABLE status within the required time, the ACTION required by Table 3.3.1-1 for the Functional Unit shall be taken. LA.2

Action D

~~** This ACTION applies to that trip system with the most inoperable channels; if both trip systems have the same number of inoperable channels, the ACTION can be applied to either trip system.~~

Addressed by Definition of STAGGERED TEST BASIS, Note 3, and DOC A.5

Table 3.3.1.1-1 A.1

TABLE 3.3.1-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION

Note 2 to Surveillance Requirements

Function FUNCTIONAL UNIT	APPLICABLE OPERATIONAL CONDITIONS	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM (a)	ACTION
1.a 1. Intermediate Range Monitors: a. Neutron Flux - High	2 ~~3, 4~~ 5(b) LA.4	3 ~~2~~ 3	G 1 ~~2~~ L.1 H 3
L.2 Add proposed Note (a) to Table 3.3.1.1-1			
1.b b. Inoperative	2 ~~3, 4~~ 5	3 ~~2~~ 3	G 1 ~~2~~ L.1 H 3
2.a 2. Average Power Range Monitor: (e) LA.5 a. Neutron Flux - High, Setdown	2 ~~3~~ ~~5(b)~~	2 ~~2~~ ~~2~~	G 1 ~~2~~ L.3 ~~3~~ L.4
2.b b. Flow Biased Simulated Thermal Power-Upscale	1	2	F 4
2.c c. Fixed Neutron Flux-High	1	2	F 4
2.d d. Inoperative	1, 2 ~~3~~ ~~5~~	2 ~~2~~ ~~2~~	G 1 ~~2~~ L.3 ~~3~~ L.4
3. 3. Reactor Vessel Steam Dome Pressure - High	1, 2(d) A.4	2	G 1
4. 4. Reactor Vessel Water Level - Low, Level 3	1, 2	2	G 1
5. 5. Main Steam Line Isolation Valve - Closure	1(c) LA.6	~~4~~ 8 A.5	F 4
6. DELETED			

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ITS 3.3.1.1

A.1

Table 3.3.1.1-1

TABLE 3.3.1-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION

Note 2 to Surveillance Requirements

Function FUNCTIONAL UNIT	APPLICABLE OPERATIONAL CONDITIONS	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM (a)	ACTION
6. ~~7.~~ Primary Containment Pressure - High	1, 2 ~~(f)~~ A.4	2 ~~(g)~~ LA.6	G ~~1~~
7.a and 7.b ~~8.~~ Scram Discharge Volume Water Level - High	1, 2, 5 (h) Note (a) To Table 3.3.1.1-1	~~2~~ 4 A.6 ~~2~~	G 1 H 3
8. ~~9.~~ Turbine Stop Valve - Closure	1 ~~(i)~~ LA.5	4 ~~(j)~~ LA.6	E 6
9. ~~10.~~ Turbine Control Valve Fast Closure, Valve Trip System Oil Pressure - Low	1 ~~(i)~~ LA.5	2 ~~(j)~~ LA.6	E 6
10. ~~11.~~ Reactor Mode Switch Shutdown Position	1, 2 ~~3, 4~~ L.1 5 ~~(k)~~	~~1~~ 2 A.5 ~~1~~ ~~1~~ 2 A.5	G 1 ~~7~~ H 3
11. ~~12.~~ Manual Scram	1, 2 ~~3, 4~~ L.1 5 ~~(k)~~	~~1~~ 2 M.2 ~~1~~ ~~1~~ 2 M.2	G 1 ~~8~~ H 9
~~13. Control Rod Drive~~			
~~a. Charging Water Header Pressure - Low~~	~~2, 5(h)~~	~~2, 2~~	~~1, 3~~
~~b. Delay Timer~~	~~2, 5(h)~~	~~2, 2~~	~~1, 3~~

R.1

L.2 Add proposed Note (a) to Table 3.3.1.1-1

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ITS 3.3.1.1

TABLE 3.3.1-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION

ACTION

ACTION G — ACTION 1 - Be in at least HOT SHUTDOWN within 12 hours.

~~ACTION 2 - Verify all insertable control rods to be inserted in the core and lock the reactor mode switch in the Shutdown position within one hour.~~ L.1 L.3

ACTION H — ACTION 3 - ~~Suspend all operations involving CORE ALTERATIONS and~~ insert all insertable control rods ~~within one hour~~. Immediately A.8 Initiate action to fully A.8 in core cells containing one or more fuel assemblies. L.2 L.6 L.2

ACTION F — ACTION 4 - Be in at least STARTUP within 6 hours.

ACTION 5 - Deleted

ACTION E — ACTION 6 - ~~Initiate a reduction in THERMAL POWER within 15 minutes and~~ reduce THERMAL POWER to less than 25% of RATED THERMAL POWER, within ~~2~~ 4 hours. L.7 L.8

~~ACTION 7 - Verify all insertable control rods to be inserted within 1 hour.~~ L.1

~~ACTION 8 - Lock the reactor mode switch in the Shutdown position within 1 hour.~~ L.1

ACTION H — ACTION 9 - ~~Suspend all operations involving CORE ALTERATIONS, and~~ insert all insertable control rods ~~and lock the reactor mode switch in the SHUTDOWN position within 1 hour~~. L.2 in core cells containing one or more fuel assemblies. A.8 Immediately A.8 L.2 Initiate action to fully A.8

TABLE 3.3.1-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION A.1

TABLE NOTATIONS

Note 2 to Surveillance Requirements

(a) A channel may be placed in an inoperable status for up to 6 hours for required surveillance without placing the channel in the tripped condition provided at least one OPERABLE channel in the same trip system is monitoring that parameter.

(b) ~~The "shorting links" shall be removed from the RPS circuitry prior to and during the time any control rod is withdrawn* and during shutdown margin demonstrations performed per Specification 3.10.3.~~ LA.4

(c) ~~An APRM channel is inoperable if there are less than 2 LPRM inputs per level or less than 14 LPRM inputs to an APRM channel.~~ LA.5

(d) ~~This function is not required to be OPERABLE when the reactor pressure vessel head is unbolted or removed per Specification 3.10.1.~~ A.4

(e) ~~This function shall be automatically bypassed when the reactor mode switch is not in the Run position.~~ LA.6

(f) ~~This function is not required to be OPERABLE when PRIMARY CONTAINMENT INTEGRITY is not required.~~ A.4

(g) ~~Also actuates the standby gas treatment system.~~ LA.6

Note (a) to Table 3.3.1.1

(h) With any control rod withdrawn from a control cell containing one or more fuel assemblies. L.6 ~~Not applicable to control rods removed per Specification 3.9.10.1 or 3.9.10.2.~~ A.7

(i) ~~This function shall not be automatically bypassed when THERMAL POWER is greater than or equal to 25% of RATED THERMAL POWER.~~ LA.5

(j) ~~Also actuates the EOC-RPT system.~~ LA.6

~~*Not required for control rods removed per Specifications 3.9.10.1 or 3.9.10.2.~~ LA.4

A.1

TABLE 3.3.1-2

REACTOR PROTECTION SYSTEM RESPONSE TIMES

FUNCTIONAL UNIT	RESPONSE TIME (Seconds)
1. Intermediate Range Monitors:	
a. Neutron Flux - High	NA
b. Inoperative	NA
2. Average Power Range Monitor*	
a. Neutron Flux - High, Setdown	NA
~~b. Flow Biased Simulated Thermal Power-Upscale~~	~~≤ 0.09**~~ L.11
c. Fixed Neutron Flux - High	≤ 0.09
d. Inoperative	NA
3. Reactor Vessel Steam Dome Pressure - High	≤ 0.55##
4. Reactor Vessel Water Level - Low, Level 3	≤ 1.05##
5. Main Steam Line Isolation Valve - Closure	≤ 0.06
6. Deleted	
7. Primary Containment Pressure - High	NA
8. Scram Discharge Volume Water Level - High	NA
9. Turbine Stop Valve - Closure	≤ 0.06
10. Turbine Control Valve Fast Closure, Trip Oil Pressure - Low	≤ 0.08#
11. Reactor Mode Switch Shutdown Position	NA
12. Manual Scram	NA
13. Control Rod Drive	
a. Charging Water Header Pressure - Low	NA
b. Delay Timer	NA

LA.1

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ITS 3.3.1.1

Note 1 to SR 3.3.1.1.17 *Neutron detectors are exempt from response time testing. ~~Response time shall be measured from the detector output or from the input of the first electronic component in the channel.~~ LA.1

~~**Not including simulated thermal power time constant.~~ L.11

Note 5 to SR 3.3.1.1.17 #Measured from start of turbine control valve fast closure.

Note 2 to SR 3.3.1.1.17 ##Sensor is eliminated from response time testing for the RPS circuits. ~~Response time testing and conformance to the administrative limits for the remaining channel including trip unit and relay logic are required.~~ LA.9

A.1

Table 3.3.1.1-1

TABLE 4.3.1.1-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Function / FUNCTIONAL UNIT	SR 3.3.1.1.1 CHANNEL CHECK	SR 3.3.1.1.4, SR 3.3.1.1.5, SR 3.3.1.1.9 CHANNEL FUNCTIONAL TEST	SR 3.3.1.1.10, SR 3.3.1.1.11, SR 3.3.1.1.13 CHANNEL CALIBRATION(a)	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
1.a 1. Intermediate Range Monitors a. Neutron Flux - High	S/U(b), S SR 3.3.1.1.6	S/U(c), W-4 A.9	LE.1 R-13 Note 1 to SR 3.3.1.1.13 Note 1 to SR 3.3.1.1.11	2(e) Note to SR 3.3.1.1.4 Note 2 to SR 3.3.1.1.13 M.1; 3(e), 4(e), 5
1.b b. Inoperative	S SR 3.3.1.1.7	W-5	R-13	2(e), 3(e), 4(e), 5 add proposed Note (a) to Table 3.3.1.1-1 L.2 L.1
	NA	W-4, -5	NA	
2.a 2. Average Power Range Monitor:(f) SR 3.3.1.1.8 a. Neutron Flux - High, Setdown	SR 3.3.1.1.7 S/U(b), S	S/U(c), W-4 A.9	SA-11 L.4	2(e) L.3 Note to SR 3.3.1.1.4 Note 2 to SR 3.3.1.1.11
	~~S~~	~~W~~	~~SA~~ L.3	3(e), 5(e) L.4
2.b b. Flow Biased Simulated Thermal Power-Upscale	S, D(d) A.10	S/U(c), Q-9 L.5	W(d)(g) SR 3.3.1.1.3, SA-11, R(h) LE.1	1
2.c c. Fixed Neutron Flux - High	S	S/U(c), Q-9	W(d) SR 3.3.1.1.2, SA-11	1
2.d d. Inoperative	NA	Q-9 L.5	NA SR 3.3.1.1.14	1, 2, 3, 5 L.3 L.4
3. 3. Reactor Vessel Steam Dome Pressure - High	NA	Q-9	Q-10	1, 2
4. 4. Reactor Vessel Water Level - Low, Level 3	S M.3 NA	Q-9	LE.1 R-13	1, 2
5. 5. Main Steam Line Isolation Valve - Closure	NA	Q-9	LE.1 R-13	1
6. Deleted				
6. 7. Primary Containment Pressure - High	NA	Q-9	LE.1 Q-13	1, 2

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ITS 3.3.1.1

Table 3.3.1.1-1 A.1

TABLE 4.3.1.1-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Function	FUNCTIONAL UNIT	SR 3.3.1.1.1 CHANNEL CHECK	SR 3.3.1.1.4, SR 3.3.1.1.5, SR 3.3.1.1.9, SR 3.3.1.1.12 CHANNEL FUNCTIONAL TEST	SR 3.3.1.1.10, SR 3.3.1.1.11, SR 3.3.1.1.13 CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
7.	8. Scram Discharge Volume Water Level - High	NA	Q-9	LE.1 R-13	1, 2, 5 (add proposed Note (a) to Table 3.3.1.1-1) L.6
8.	9. Turbine Stop Valve - Closure(i)	NA	Q-9	R-13	1
9.	10. Turbine Control Valve Fast Closure Valve Trip System Oil Pressure - Low(i) (SR 3.3.1.1.16)	NA	Q-9	LE.1 R-13	1 L.2
10.	11. Reactor Mode Switch Shutdown Position	NA	LD.2 R-12	NA	1, 2, ~~3~~, ~~4~~, 5 L.1 (add proposed Note (a) to Table 3.3.1.1-1)
11.	12. Manual Scram	NA	W-5	NA	1, 2, ~~3~~, ~~4~~, 5
	~~13. Control Rod Drive~~				
	~~a. Charging Water Header Pressure - Low~~	~~NA~~	~~M~~	~~R~~	~~2, 5~~ R.1
	~~b. Delay Timer~~	~~NA~~	~~M~~	~~R~~	~~2, 5~~

Note 1 to SR 3.3.1.1.11
Note 1 to SR 3.3.1.1.13 (a) Neutron detectors may be excluded from CHANNEL CALIBRATION.

SR 3.3.1.1.6
SR 3.3.1.1.7 ~~(b)~~ The IRM and SRM channels shall be determined to overlap ~~for at least 1/2 decades~~ during each startup and the IRM and APRM channels shall be determined to overlap ~~for at least 1/2 decades~~ during each controlled shutdown, if not performed within the previous 7 days. LA.3 A.9

~~(c) Within 24 hours prior to startup, if not performed within the previous 7 days.~~ L.5

SR 3.3.1.1.2 (d) This calibration shall consist of the adjustment of the APRM channel to conform to the power levels calculated by a heat balance during OPERATIONAL CONDITION 1 when THERMAL POWER ≥ 25% of RATED THERMAL POWER. ~~The APRM Gain Adjustment Factor (GAF) for any channel shall be equal to the power value determined by the heat balance divided by the APRM reading for that channel.~~ LA.8

Add proposed Note to SR 3.3.1.1.2 L.9

Actions Note 2 Within 2 hours, adjust any APRM channel with a GAF > 1.02. In addition, adjust any APRM channel within 12 hours, if power is greater than or equal to 90% of RATED THERMAL POWER and the APRM channel GAF is < 0.98. ~~Until any required APRM adjustment has been accomplished, notification shall be posted on the reactor control panel.~~ L.10

SR 3.3.1.1.3 (e) This calibration shall consist of the adjustment of the APRM flow biased channel to conform to a calibrated flow signal.

SR 3.3.1.1.8 (f) The LPRMs shall be calibrated at least once per 1000 effective full power hours (EFPH). A.10

~~(g) Measure and compare core flow to rated core flow.~~ A.13

SR 3.3.1.1.14 (h) This calibration shall consist of verifying the 6 ± 1 second simulated thermal power time constant.

SR 3.3.1.1.16 (i) At least once per ~~18~~ months, verify Turbine Stop Valve - Closure and Turbine Control Valve Fast Closure Valve Trip System Oil Pressure - Low Trip Functions are not bypassed when THERMAL POWER is ≥ 25% of RATED THERMAL POWER. Specification 4.0.2 applies to this ~~18~~-month interval. 24 LD.1

Note to SR 3.3.1.1.4
Note 2 to SR 3.3.1.1.11
Note 2 to SR 3.3.1.1.13 The provisions of Specification 4.0.4 are not applicable for a period of 24 hours after entering OPERATIONAL CONDITION 2 or 3 when shutting down from OPERATIONAL CONDITION 1. M.1

A.1

SAFETY LIMITS AND LIMITING SAFETY SYSTEM SETTINGS

2.2 LIMITING SAFETY SYSTEM SETTINGS

A.11

REACTOR PROTECTION SYSTEM INSTRUMENTATION SETPOINTS

LCO 3.3.1.1 2.2.1 The reactor protection system instrumentation setpoints shall be set consistent with the ~~Trip Setpoint~~ values shown in Table 2.2.1-1. A.11

Allowable LA.7

APPLICABILITY: As shown in Table 3.3.1-1.

ACTION:

ACTIONS A, B, and C With a reactor protection system instrumentation setpoint less conservative than the value shown in the Allowable Values column of Table 2.2.1-1, declare the channel inoperable and apply the applicable ACTION statement requirement of Specification 3.3.1 until the channel is restored to OPERABLE status ~~with its setpoint adjusted consistent with the Trip Setpoint value.~~ A.11 LA.7

A.1

Table 3.3.1.1-1

TABLE 2.2.1-1 A.11

REACTOR PROTECTION SYSTEM INSTRUMENTATION SETPOINTS

LA.7 LF.1

Function FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
1.a and 1.b { 1. Intermediate Range Monitor, Neutron Flux-High	~~≤ 120 divisions of full scale~~	≤ 122 divisions of full scale
2.a { 2. Average Power Range Monitor: a. Neutron Flux-High, Setdown	~~≤ 15% of RATED THERMAL POWER~~	≤ 20% of RATED THERMAL POWER
2.b { b. Flow Biased Simulated Thermal Power - Upscale 1) Two Recirculation Loop Operation a) Flow Biased b) High Flow Clamped	~~≤ 0.58W + 59% with a maximum of ≤ 113.5% of RATED THERMAL POWER~~	≤ 0.58W + 62% with a maximum of ≤ 115.5% of RATED THERMAL POWER
Note (b) to Table 3.3.1.1-1 { 2) Single Recirculation Loop Operation a) Flow Biased b) High Flow Clamped	~~≤ 0.58W + 54.3% with a maximum of ≤ 113.5% of RATED THERMAL POWER~~	≤ 0.58W + 57.3% with a maximum of ≤ 115.5% of RATED THERMAL POWER
2.c { c. Fixed Neutron Flux-High	~~≤ 118% of RATED THERMAL POWER~~	≤ 120% of RATED THERMAL POWER
3. { 3. Reactor Vessel Steam Dome Pressure - High	~~≤ 1043 psig~~	≤ 1063 psig
4. { 4. Reactor Vessel Water Level - Low, Level 3	~~≥ 12.5 inches above instrument zero*~~	≥ 11.0 inches ~~above instrument zero*~~ LA.6

~~*See Bases Figure B 3/4 3-1.~~ A.12

A.1

Table 3.3.1.1-1 A.11

TABLE 2.2.1-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION SETPOINTS

Function	FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES LF.1
5.	5. Main Steam Line Isolation Valve - Closure	~~≤ 8% closed~~	≤ 12% closed
	6. DELETED		
6.	7. Primary Containment Pressure - High	~~≤ 1.69 psig~~	≤ 1.89 psig
7.a and 7.b	8. Scram Discharge Volume Water Level - High	~~≤ 767' 5¼"~~	≤ 767' 5¼"
8.	9. Turbine Stop Valve - Closure	~~≤ 5% closed~~	≤ 7% closed
9.	10. Turbine Control Valve Fast Closure, Trip Oil Pressure - Low	~~≥ 500 psig~~	≥ 414 psig
10.	11. Reactor Mode Switch Shutdown Position	~~NA~~	NA
11.	12. Manual Scram	~~NA~~	NA
	~~13. Control Rod Drive~~	LA.1	
	~~a. Charging Water Header Pressure - Low~~	~~≥ 1157 psig~~	~~≥ 1134 psig~~ R.1
	~~b. Delay Timer~~	~~≤ 10 seconds~~	~~≤ 10 seconds~~

ITS 3.3.1.1

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3/4.3 INSTRUMENTATION

3/4.3.1 REACTOR PROTECTION ~~SYSTEM~~ INSTRUMENTATION A.1

LIMITING CONDITION FOR OPERATION

LCO 3.3.1.1 SR 3.3.1.1.17 3.3.1 As a minimum, the reactor protection system instrumentation channels shown in Table 3.3.1-1 shall be OPERABLE with the REACTOR PROTECTION SYSTEM RESPONSE TIME ~~as shown in Table 3.3.1-2.~~ LA.1

APPLICABILITY: As shown in Table 3.3.1-1.

ACTION: Add proposed ACTIONS NOTE 1 A.2

Action A a. With one channel required by Table 3.3.1-1 inoperable ~~in one or more Functional Units,~~ place the inoperable channel and/or that trip system in the tripped condition~~*~~ within 12 hours. LA.2

Actions A, B and C b. With two or more channels required by Table 3.3.1-1 inoperable in one or more Functional Units: LA.2

Action C 1. Within one hour, verify sufficient channels remain OPERABLE or tripped~~*~~ to maintain trip capability in the Functional Unit, and

Action B 2. Within 6 hours, place the inoperable channel(s) in one trip system and/or that trip system~~**~~ in the tripped condition~~*~~, and LA.2

Action A 3. Within 12 hours, restore the inoperable channels in the other trip system to an OPERABLE status or tripped~~*~~. LA.2

Action D c. Otherwise, take the ACTION required by Table 3.3.1-1 for the Functional Unit.

SURVEILLANCE REQUIREMENTS

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

LA.3

SR 3.3.1.1.15 4.3.1.2 LOGIC SYSTEM FUNCTIONAL TESTS ~~and simulated automatic operation~~ of all channels shall be performed at least once per ~~18~~ 24 months. LD.1

A.3

SR 3.3.1.1.17 4.3.1.3 The REACTOR PROTECTION SYSTEM RESPONSE TIME of ~~each~~ reactor trip functional unit shown in Table 3.3.1-2 shall be demonstrated to be within its limit at least once per ~~18~~ months. ~~Each test shall include at least one channel per trip system such that all channels are tested at least once every N times 18 months where N is the total number of redundant channels in a specific reactor trip system.~~ Add proposed Note 4 A.3

~~* An inoperable channel or trip system need not be placed in the tripped condition where this would cause the Trip Function to occur.~~ LA.2 Action D In these cases, if the inoperable channel is not restored to OPERABLE status within the required time, the ACTION required by Table 3.3.1-1 for the Functional Unit shall be taken.

~~** This ACTION applies to that trip system with the most inoperable channels; if both trip systems have the same number of inoperable channels, the ACTION can be applied to either trip system.~~

Addressed by Definition of STAGGERED TEST BASIS, Note 3, and DOC A.5

A.1

Table 3.3.1.1-1

TABLE 3.3.1-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION

Note 2 to Surveillance Requirements

Function FUNCTIONAL UNIT	APPLICABLE OPERATIONAL CONDITIONS	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM (a)	ACTION
1.a 1. Intermediate Range Monitors: a. Neutron Flux - High	2 ~~3, 4~~ 5(b) LA.4	3 ~~2~~ 3	G 1 ~~2~~ L.1 H 3
1.b b. Inoperative	2 ~~3, 4~~ 5	3 ~~2~~ 3	G 1 ~~2~~ L.1 H 3
2.a 2. Average Power Range Monitor: ~~(c)~~ LA.5 a. Neutron Flux - High, Setdown	2 ~~3~~ ~~5(b)~~	2 ~~2~~ ~~2~~	G 1 ~~2~~ L.3 ~~3~~ L.4
2.b b. Flow Biased Simulated Thermal Power-Upscale	1	2	F 4
2.c c. Fixed Neutron Flux-High	1	2	F 4
2.d d. Inoperative	1, 2 ~~3~~ ~~5~~	2 ~~2~~ ~~2~~	G 1 ~~2~~ L.3 ~~3~~ L.4
3. 3. Reactor Vessel Steam Dome Pressure - High	1, 2 ~~(d)~~ A.4	2	G 1
4. 4. Reactor Vessel Water Level - Low, Level 3	1, 2	2	G 1
5 5. Main Steam Line Isolation Valve - Closure	1 ~~(e)~~ LA.6	~~4~~ 8 A.5	F 4
6. DELETED			

L.2 Add proposed Note (a) to Table 3.3.1.1-1

Table 3.3.1.1-1

TABLE 3.3.1-1 (Continued)
REACTOR PROTECTION SYSTEM INSTRUMENTATION

A.1

TABLE 3.3.1-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION

Note 2 to Surveillance Requirements

Function / FUNCTIONAL UNIT	APPLICABLE OPERATIONAL CONDITIONS	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM (a)	ACTION
6. 7. Primary Containment Pressure - High	1, 2 (1) LA.4	2 (1) LA.6	G 1
7.a and 7.b 8. Scram Discharge Volume Water Level - High	1, 2, 5(h) Note (a) to Table 3.3.1.1-1	2 4 A.6 2	G 1 H 3
8. 9. Turbine Stop Valve - Closure	1 (1) LA.5	4 (1) LA.6	E 6
9. 10. Turbine Control Valve Fast Closure, Valve Trip System Oil Pressure - Low	1 (1) LA.5	2 (1) LA.6	E 6
10. 11. Reactor Mode Switch Shutdown Position	~~1, 2~~ 1, 2 ~~3, 4~~ 5	~~2~~ 2 A.5 ~~1~~ ~~1~~ 2 A.5	G 1 ~~7~~ H 3
11. 12. Manual Scram	1, 2 ~~3, 4~~ 5	~~2~~ 2 M.2 ~~1~~ ~~1~~ 2 M.2	G 1 ~~8~~ H 9
~~13. Control Rod Drive~~			
~~a. Charging Water Header Pressure - Low~~	~~2 5(h)~~	~~2 2~~	~~1 3~~
~~b. Delay Timer~~	~~2 5(h)~~	~~2 2~~	~~1 3~~

L.1

L.2 Add proposed Note (a) to Table 3.3.1.1-1

R.1

ITS 3.3.1.1

TABLE 3.3.1-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION

ACTION STATEMENTS

ACTION G — ACTION 1 - Be in at least HOT SHUTDOWN within 12 hours.

~~ACTION 2 - Verify all insertable control rods to be inserted in the core and lock the reactor mode switch in the Shutdown position within 1 hour.~~ L.1 L.3

ACTION H — ACTION 3 - ~~Suspend all operations involving CORE ALTERATIONS and~~ insert all insertable control rods ~~within one hour~~ Immediately L.2 A.8 Initiate action to fully in core cells containing one or more fuel assemblies. L.2 L.6

ACTION F — ACTION 4 - Be in at least STARTUP within 6 hours.

ACTION 5 - DELETED

ACTION E — ACTION 6 - ~~Initiate a reduction in THERMAL POWER within 15 minutes and~~ reduce THERMAL POWER to less than 25% of RATED THERMAL POWER, within ~~2~~ 4 hours. L.7 L.8

~~ACTION 7 - Verify all insertable control rods to be inserted within 1 hour.~~ L.1

ACTION 8 - ~~Lock the reactor mode switch in the Shutdown position within 1 hour.~~ L.2

ACTION H — ACTION 9 - ~~Suspend all operations involving CORE ALTERATIONS, and~~ insert all insertable control rods ~~and lock the reactor mode switch in the SHUTDOWN position~~ ~~within 1 hour~~. L.2

Immediately A.8

in core cells containing one or more fuel assemblies. A.8

Initiate action to fully A.8

TABLE 3.3.1-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION A.1

TABLE NOTATIONS

Note 2 to Surveillance Requirements

(a) A channel may be placed in an inoperable status for up to 6 hours for required surveillance without placing the channel in the tripped condition provided at least one OPERABLE channel in the same trip system is monitoring that parameter.

(b) ~~The "shorting links" shall be removed from the RPS circuitry prior to and during the time any control rod is withdrawn* and during shutdown margin demonstrations performed per Specification 3.10.3.~~ LA.4

(c) ~~An APRM channel is inoperable if there are less than 2 LPRM inputs per level or less than 14 LPRM inputs to an APRM channel.~~ LA.5

(d) ~~This function is not required to be OPERABLE when the reactor pressure vessel head is unbolted or removed per Specification 3.10.1.~~ A.4

(e) ~~This function shall be automatically bypassed when the reactor mode switch is not in the Run position.~~ LA.6

(f) ~~This function is not required to be OPERABLE when PRIMARY CONTAINMENT INTEGRITY is not required.~~ A.4

(g) ~~Also actuates the standby gas treatment system.~~ LA.6

Note (a) to Table 3.3.1.1-1

(h) With any control rod withdrawn from a control cell containing one or more fuel assemblies. L.6 ~~Not applicable to control rods removed per Specification 3.9.10.1 or 3.9.10.2.~~ A.7

(i) ~~This function shall not be automatically bypassed when THERMAL POWER is greater than or equal to 25% of RATED THERMAL POWER.~~ LA.5

(j) ~~Also actuates the EOC-RPT system.~~ LA.6

~~*Not required for control rods removed per Specification 3.9.10.1 or 3.9.10.2.~~ LA.4

A.1

TABLE 3.3.1-2
REACTOR PROTECTION SYSTEM RESPONSE TIMES

FUNCTIONAL UNIT	RESPONSE TIME (Seconds)
1. Intermediate Range Monitors:	
a. Neutron Flux - High*	NA
b. Inoperative	NA
2. Average Power Range Monitor*	
a. Neutron Flux - High, Setdown	NA
b. Flow Biased Simulated Thermal Power-Upscale	≤ 0.09**
c. Fixed Neutron Flux - High	≤ 0.09
d. Inoperative	NA
3. Reactor Vessel Steam Dome Pressure - High	≤ 0.55##
4. Reactor Vessel Water Level - Low, Level 3	≤ 1.05##
5. Main Steam Line Isolation Valve - Closure	≤ 0.06
6. DELETED	
7. Primary Containment Pressure - High	NA
8. Scram Discharge Volume Water Level - High	NA
9. Turbine Stop Valve - Closure	≤ 0.06
10. Turbine Control Valve Fast Closure, Trip Oil Pressure - Low	≤ 0.08#
11. Reactor Mode Switch Shutdown Position	NA
12. Manual Scram	NA
13. Control Rod Drive	
a. Charging Water Header Pressure - Low	NA
b. Delay Timer	NA

L.11

LA.1

Note 1 to SR 3.3.1.1.17

*Neutron detectors are exempt from response time testing. Response time shall be measured from the detector output or from the input of the first electronic component in the channel. LA.1

**Not including simulated thermal power time constant. L.11

Note 5 to SR 3.3.1.1.17

#Measured from start of turbine control valve fast closure.

Note 2 to SR 3.3.1.1.17

##Sensor is eliminated from response time testing for the RPS circuits. Response time testing and conformance to the administrative limits for the remaining channel including trip unit and relay logic are required. LA.9

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ITS 3.3.1.1

A.1

Table 3.3.1.1-1

TABLE 4.3.1.1-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Function FUNCTIONAL UNIT	SR 3.3.1.1.1 CHANNEL CHECK	SR 3.3.1.1.4, SR 3.3.1.1.5, SR 3.3.1.1.9 CHANNEL FUNCTIONAL TEST	SR 3.3.1.1.10, SR 3.3.1.1.11, SR 3.3.1.1.13 CHANNEL CALIBRATION(a) Note 1 to SR 3.3.1.1.13	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
1.a 1. Intermediate Range Monitors a. Neutron Flux - High	S/U(b), S	A.9 S/U(c), W-4	R-13 Note 1 to SR 3.3.1.1.11	2(b), 3(e), 4, 5 Note to SR 3.3.1.1.4 Note 2 to SR 3.3.1.1.13 M.1
1.b b. Inoperative SR 3.3.1.1.6 SR 3.3.1.1.7	S NA	W-5 W-4, -5	LE.1 R-13 NA	2(e), 3(e), 4 5 add proposed Note (a) to Table 3.3.1.1-1 L.2 L.1
2.a 2. Average Power Range Monitor:(f) - SR 3.3.1.1.8 a. Neutron Flux - High, Setdown SR 3.3.1.1.7	S/U(b), S	A.9 S/U(c), W-4	SA-11 L.3 L.4	2(e) L.3 3(e), 5 L.4 Note to SR 3.3.1.1.4 Note 2 to SR 3.3.1.1.11
2.b b. Flow Biased Simulated Thermal Power-Upscale	~~S~~ S, D(g) A.10	~~W~~ L.5 S/U(c), Q-9	~~SA~~ SR 3.3.1.1.3 W(d)(e), SA-11, R(h) LE.1 SR 3.3.1.1.2	1
2.c c. Fixed Neutron Flux - High	S	S/U(c), Q-9	W(d), SA-11	1
2.d d. Inoperative	NA	Q-9	NA SR 3.3.1.1.14	1, 2, 3, 5 L.3 L.4
3. 3. Reactor Vessel Steam Dome Pressure - High	NA	Q-9	Q-10	1, 2
4. 4. Reactor Vessel Water Level - Low, Level 3	S	Q-9	LE.1 R-13	1, 2
5. 5. Main Steam Line Isolation Valve - Closure	NA	Q-9	LE.1 R-13	1
6. DELETED				
6. 7. Primary Containment Pressure - High	NA	Q-9	LE.1 Q-13	1, 2

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Table 3.3.1.1-1 A.1

TABLE 4.3.1.1-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Function FUNCTIONAL UNIT	SR 3.3.1.1.1 CHANNEL CHECK	SR 3.3.1.1.4; SR 3.3.1.1.5; SR 3.3.1.1.9; SR 3.3.1.1.12 CHANNEL FUNCTIONAL TEST	SR 3.3.1.1.10; SR 3.3.1.1.11; SR 3.3.1.1.13 CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED L.6
7. 8. Scram Discharge Volume Water Level - High	NA	Q-9	R-13	1, 2, 5 ← add proposed Note (a) to Table 3.3.1.1-1
8. 9. Turbine Stop Valve - Closure(1) SR 3.3.1.1.16	NA	Q-9	LE.1 R-13	1
9. 10. Turbine Control Valve Fast Closure Valve Trip System Oil Pressure - Low(1)	NA	Q-9	LE.1 R-13	1 L.1 add proposed Note (a) to Table 3.3.1.1-1
10. 11. Reactor Mode Switch Shutdown Position	NA	LD.2 R-12	NA	1, 2, ~~3, 4,~~ 5
11. 12. Manual Scram	NA	~~W~~-5	NA	1, 2, ~~3, 4,~~ 5 L.2
~~13. Control Rod Drive~~				R.1
~~a. Charging Water Header Pressure - Low~~	~~NA~~	~~M~~	~~R~~	~~2, 5~~
~~b. Delay Timer~~	~~NA~~	~~M~~	~~R~~	~~2, 5~~

Note 1 to SR 3.3.1.1.11
Note 1 to SR 3.3.1.1.13 — (a) Neutron detectors may be excluded from CHANNEL CALIBRATION.

SR 3.3.1.1.6
SR 3.3.1.1.7 — (b) The IRM and SRM channels shall be determined to overlap ~~for at least 1/2 decades~~ LA.3 during each startup and the IRM and APRM channels shall be determined to overlap ~~for at least 1/2 decades~~ during each controlled shutdown, if not performed within the previous 7 days.

~~(c) Within 24 hours prior to startup, if not performed within the previous 7 days.~~ A.9 L.5

SR 3.3.1.1.2 — (d) This calibration shall consist of the adjustment of the APRM channel to conform to the power levels calculated by a heat balance during OPERATIONAL CONDITION 1 when THERMAL POWER ≥ 25% of RATED THERMAL POWER. ~~The APRM Gain Adjustment Factor (GAF) for any channel shall be equal to the power value determined by the heat balance divided by the APRM reading for that channel.~~ LA.8

Add proposed Note to SR 3.3.1.1.2

L.9

Actions Note 2 — Within 2 hours, adjust any APRM channel with a GAF > 1.02. In addition, adjust any APRM channel within 12 hours, if power is greater than or equal to 90% of RATED THERMAL POWER and the APRM channel GAF is < 0.98. ~~Until any required APRM adjustment has been accomplished, notification shall be posted on the reactor control panel.~~

SR 3.3.1.1.3 — (e) This calibration shall consist of the adjustment of the APRM flow biased channel to conform to a calibrated flow signal. L.10

SR 3.3.1.1.8 — (f) The LPRMs shall be calibrated at least ~~once per~~ 1000 effective full power hours (EFPH). A.10

~~(g) Measure and compare core flow to rated core flow.~~ A.13

SR 3.3.1.1.14 — (h) This calibration shall consist of verifying the ~~6 ± 1 second~~ simulated thermal power time constant.

SR 3.3.1.1.16 — (i) At least once per ~~18~~ months, verify Turbine Stop Valve - Closure and Turbine Control Valve Fast Closure Valve Trip System Oil Pressure - Low Trip Functions are not bypassed when THERMAL POWER is ≥ 25% of RATED THERMAL POWER. ~~Specification 4.0.2 applies to this 18 month interval.~~ 24 LD.1

Note to SR 3.3.1.1.4
Note 2 to SR 3.3.1.1.11
Note 2 to SR 3.3.1.1.13 — * The provisions of Specification 4.0.4 are not applicable for a period of 24 hours after entering OPERATIONAL CONDITION 2 or 3 when shutting down from OPERATIONAL CONDITION 1. M.1

A.1

SAFETY LIMITS AND LIMITING SAFETY SYSTEM SETTINGS

2.2 LIMITING SAFETY SYSTEM SETTINGS — A.11

REACTOR PROTECTION SYSTEM INSTRUMENTATION SETPOINTS

LCO 3.3.1.1 2.2.1 The reactor protection system instrumentation setpoints shall be set consistent with the ~~Trip Setpoint~~ Allowable values shown in Table 2.2.1-1. — A.11 — LA.1

APPLICABILITY: As shown in Table 3.3.1-1.

ACTION:

ACTIONS A, B, and C — With a reactor protection system instrumentation setpoint less conservative than the value shown in the Allowable Values column of Table 2.2.1-1, declare the channel inoperable and apply the applicable ACTION statement requirement of Specification 3.3.1 until the channel is restored to OPERABLE status ~~with its setpoint adjusted consistent with the Trip Setpoint value.~~ A.11 — LA.7

A.1

Table 3.3.1.1-1

TABLE 2.2.1-1 A.11

REACTOR PROTECTION SYSTEM INSTRUMENTATION SETPOINTS

LA.7 LF.1

	Function FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
1.a and 1.b	1. Intermediate Range Monitor, Neutron Flux-High	≤ 120 divisions of full scale	≤ 122 divisions of full scale
2.a	2. Average Power Range Monitor: a. Neutron Flux-High, Setdown	≤ 15% of RATED THERMAL POWER	≤ 20% of RATED THERMAL POWER
2.b	b. Flow Biased Simulated Thermal Power - Upscale 1) Two Recirculation Loop Operation a) Flow Biased b) High Flow Clamped	≤ 0.58W + 59% with a maximum of ≤ 113.5% of RATED THERMAL POWER	≤ 0.58W + 62% with a maximum of ≤ 115.5% of RATED THERMAL POWER
Note (b) to Table 3.3.1.1-1	2) Single Recirculation Loop Operation a) Flow Biased b) High Flow Clamped	≤ 0.58W + 54.3% with a maximum of ≤ 113.5% of RATED THERMAL POWER	≤ 0.58W + 57.3% with a maximum of ≤ 115.5% of RATED THERMAL POWER
2.c	c. Fixed Neutron Flux-High	≤ 118% of RATED THERMAL POWER	≤ 120% of RATED THERMAL POWER
3.	3. Reactor Vessel Steam Dome Pressure - High	≤ 1043 psig	≤ 1063 psig
4.	4. Reactor Vessel Water Level - Low, Level 3	≥ 12.5 inches above instrument zero*	≥ 11 inches above instrument zero* LA.6
5.	5. Main Steam Line Isolation Valve - Closure	≤ 8% closed	≤ 12% closed
	6. DELETED		
6.	7. Primary Containment Pressure - High	≤ 1.69 psig	≤ 1.89 psig
7.a and 7.b	8. Scram Discharge Volume Water Level - High	≤ 767' 5¼"	≤ 767' 5¼"
8.	9. Turbine Stop Valve - Closure	≤ 5% closed	≤ 7% closed

~~*See Bases Figure B 3/4 3-1.~~ A.12

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A.1

Table 3.3.1.1-1 A.11

TABLE 2.2.1-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION SETPOINTS (Continued)

LF.1

Function

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
9. 10. Turbine Control Valve Fast Closure, Trip Oil Pressure - Low	~~≥ 500 psig~~	≥ 414 psig
10. 11. Reactor Mode Switch Shutdown Position	~~N.A.~~	N.A.
11. 12. Manual Scram	~~N.A.~~	N.A.
~~13. Control Rod Drive~~		
~~a. Charging Water Header Pressure-Low~~	~~≥ 1157 psig~~	~~≥ 1134 psig~~
~~b. Delay Timer~~	~~≤ 10 seconds~~	~~≤ 10 seconds~~

LA.7

R.1

ITS 3.3.1.1

ADMINISTRATIVE

A.1 In the conversion of the LaSalle 1 and 2 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1434, Rev. 1 (i.e., the Improved Standard Technical Specifications (ISTS)).

A.2 This proposed change to the CTS 3.3.1 Actions provides more explicit instructions for proper application of the Actions for Technical Specification compliance. In conjunction with the proposed Specification 1.3, "Completion Times," the ITS 3.3.1.1 ACTIONS Note 1 ("Separate Condition entry is allowed for each....") and the wording for ACTION A ("One or more required channels") and ACTIONS B and C ("One or more Functions") provide direction consistent with the intent of the existing Actions for an inoperable RPS instrumentation channel. It is intended that each inoperable channel is allowed a certain time to complete the Required Actions. Since this change only provides more explicit direction of the current interpretation of the existing specifications, this change is considered administrative.

A.3 CTS 4.3.1.3 states to demonstrate the response time for "each" required RPS functional unit. The response time for some of the RPS Functions are not assumed in any accident analysis, and their response time is listed as "N/A" (i.e., not applicable) in CTS Table 3.3.1-2. Therefore, these response time tests have been deleted (by not referencing the proposed response time SR to the not applicable Functions), and their deletion is considered administrative.

In addition, for ITS Table 3.3.1.1-1 Function 8, Turbine Stop Valve -Closure, the response time of the limit switch is not measured since it is not practicable. A test switch in parallel with the limit switch is used to simulate the limit switch function, and the response time downstream of the test switch is measured. The response time of the limit switch is conservatively assumed to be 10 ms, which is added to the measured response time to obtain the total RPS Response Time. This method has been previously accepted by the NRC, as documented in a letter from W.G. Guidemond (NRC) to C. Reed (ComEd), dated January 26, 1987. Therefore, Note 4 has been added to ITS SR 3.3.1.1.17 to provide this allowance (the limit switch response time is conservatively assumed) and this addition is considered administrative. For clarity, the Bases will also provide the value for the assumed limit switch response time (10 ms).

ADMINISTRATIVE (continued)

A.4 CTS Table 3.3.1-1 Note (d) states that the Reactor Vessel Steam Dome Pressure—High Function (Functional Unit 3) is not required to be OPERABLE in MODE 2 when the reactor vessel head is removed per CTS 3.10.1. CTS Table 3.3.1-1 Note (f) states that the Primary Containment Pressure—High Function (Functional Unit 7) is not required to be OPERABLE in MODE 2 when PRIMARY CONTAINMENT INTEGRITY is not required in MODE 2 (i.e., when Special Test Exception 3.10.1 is being used). These notes are deleted from CTS Table 3.3.1-1 since the only applicable condition in which these notes would be needed has been deleted (see Discussion of Changes for CTS: 3/4.10.1, in Section 3.10). Therefore, Notes (d) and (f) of CTS Table 3.3.1-1 are no longer required and the change is considered administrative.

A.5 All MSIV channels are required to be OPERABLE to assure a scram with the worst case single failure. The MSIV Closure Function (CTS Table 3.3.1-1 Functional Unit 5) requires a minimum of 4 channels per trip system. Each of the eight MSIVs inputs its closure signal to each RPS trip system (trip system A and B). Currently, two inputs from separate MSIVs (i.e., position switches) are combined into a single "channel". To ensure the interpretation that all MSIV position switches are required to each trip system, each MSIV contact is viewed as a separate channel (a total of 16 channels). Therefore, the minimum number of channels is more appropriately specified as "8" in Function 5 of ITS Table 3.3.1.1-1.

The reactor mode switch (CTS Table 3.3.1-1, Functional Unit 11) input to all four logic strings of the RPS trip logic. All four channels of this Function are required to be OPERABLE to assure a manual scram with the worst single failure. Therefore, the minimum channels is more appropriately specified as "2."

Since these changes involve no design change but are only differences of nomenclature, these changes are considered administrative.

A.6 The Scram Discharge Volume Water Level—High Function (CTS Table 3.3.1-1, Functional Unit 8) has two separate inputs to the RPS logic; a level switch and a transmitter/trip unit. Each of these input into all four logic strings of the RPS trip logic. All four channels of each type are required to be OPERABLE to ensure diversity. Therefore, the Function has been divided into two separate types, each with two channels per trip system.

ADMINISTRATIVE (continued)

A.7 The proposed Applicability of ITS 3.3.1.1 Functions 7.a and 7.b requires the Functions to be OPERABLE in MODE 5 only with any control rod withdrawn from a core cell containing one or more fuel assemblies. This Applicability is consistent with CTS Table 3.3.1-1 Note (h) as modified by Discussion of Change L.6 below, but clarified by removing the cross references to the Special Operations LCOs. This change is a presentation preference and does not alter the current Applicability requirements. Therefore, this change is considered administrative in nature.

A.8 The existing action in CTS Table 3.3.1-1 Actions 3 and 9 to "insert...within 1 hour" (see Discussion of Changes L.2 and L.6 below for a change to what gets inserted) is proposed to be revised to "initiate action to insert...Immediately." The existing requirement appears to provide an hour in which control rods could be left withdrawn, even if able to be inserted. If the control rod is incapable of being inserted in 1 hour, the existing action would appear to result in the requirement for an LER. The intent of the Action is more appropriately presented in ITS 3.3.1.1 Required Action H.1. With the proposed Required Action, a significantly more conservative requirement to insert the control rod(s) and maintain insertion is imposed. No longer would the provision to withdraw or leave withdrawn one or more control rods for up to 1 hour exist. However, with this conservatism comes the understanding that if best efforts to insert the control rod(s) exceeds 1 hour, no LER will be required.

This interpretation of the Actions intent is supported by the BWR ISTS, NUREG-1434, Rev. 1. Because this is an enhanced presentation of the existing intent, the proposed change is considered administrative.

A.9 The CHANNEL FUNCTIONAL TEST Surveillance Frequency of "S/U" and Note (c) of CTS Table 4.3.1.1-1 for Functions 1.a and 2.a "within 24 hours before startup, if not performed within the previous 7 days," is redundant to the requirements of proposed SR 3.0.4, which requires the periodic weekly Surveillances to be performed and current prior to entry into the applicable operational conditions. Once the applicable conditions are entered, the periodic weekly Surveillance Frequency provides adequate assurance of OPERABILITY, if required. Therefore, the removal of this Frequency is considered administrative.

ADMINISTRATIVE (continued)

A.10 The CTS Table 4.3.1.1-1, Functional Unit 2.b requirement to perform a daily CHANNEL CHECK on the APRM Flow Biased Simulated Thermal Power—Upscale Function has been deleted. This daily Surveillance provides information redundant to other Surveillance Requirements (i.e., CTS 4.4.1.2.1 and 4.4.1.2.2). Additionally, this Surveillance would introduce confusion with respect to the jet pump Surveillance contained in proposed ITS SR 3.4.3.1, which requires that the recirculation loop (jet pump) flow be within 10% of the established pattern. CTS Table 4.3.1.1-1, Note (g) requires the core flow to be measured and compared with the rated core flow. This is essentially what proposed ITS SR 3.4.3.1 performs, except without the limits that are specified in proposed ITS SR 3.4.3.1. Therefore, since this Surveillance is redundant to CTS 4.4.1.2.1 and 4.4.1.2.2 (proposed ITS SR 3.4.3.1) it is unnecessary and has been deleted.

A.11 In ITS 3.3.1.1, "RPS Instrumentation," the CTS Limiting Safety System Settings (Setpoints) Table 2.2.1-1 has been combined with the current RPS Technical Specification (CTS 3.3.1). The information in CTS Table 2.2.1-1 is located in ITS Table 3.3.1.1-1. Changes made to the information are described in comments below. Since this change involves no design change but is only a difference of nomenclature and presentation preference, this change is considered administrative.

A.12 CTS Table 2.2.1-1 footnote * refers to Bases Figure B 3/4.3-1. This Figure is providing information as to what reactor vessel water level the various reactor water level instruments actuate, in comparison to one another. This information is already essentially contained in the Allowable Value column of this Table. Therefore, this reference is being deleted and is considered administrative.

A.13 The simulated thermal power time constant associated with the APRM Flow Biased Simulated Thermal Power—Upscale Function is identified in CTS Table 4.3.1.1-1, Note g as 6 $\pm$ 1 seconds. ITS SR 3.3.1.1.14 presents this as $\leq$ 7 seconds. The hardware design prevents setting this constant below 5 seconds. Therefore, this is an administrative change in presentation only.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 CTS Table 4.3.1.1-1 includes a footnote (*) to exempt the provisions of CTS 4.0.4 for 24 hours when entering MODES 2 or 3 from MODE 1. The exemption is also provided for a CHANNEL CHECK in the CTS. However, this allowance is unnecessary since the Function is not required in MODE 3, and the surveillance can be performed in MODE 1 at low power prior to entering MODE 2. Therefore, this allowance is omitted for ITS SR 3.3.1.1.1 and represents an additional restriction on plant operation.

M.2 The CTS Table 3.3.1-1 requires only one OPERABLE channel per trip system of the RPS manual scram function. However, UFSAR Table 7.2-2 and Table 7.2-3 identify a minimum of 2 channels of the manual scram function per trip system required for the functional performance of the RPS. Therefore, the number of required channels is increased to 2. This is also consistent with NUREG-1434, Rev. 1, and represents an additional restriction on plant operation.

M.3 CTS Table 4.3.1.1-1 varies between Unit 1 and Unit 2 for the CHANNEL CHECK requirements for Reactor Vessel Water Level - Low, Level 3. Unit 2 requires a CHANNEL CHECK to be performed once per shift; Unit 1 does not. There is no apparent basis for this discrepancy as the available capability to perform the CHANNEL CHECK is the same for both units. Therefore, this CHANNEL CHECK requirement is added for Unit 1 as an additional restriction on plant operation.

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

LA.1 CTS Table 3.3.1-2, Reactor Protection System Response Times, are to be relocated to the Technical Requirements Manual (TRM). The response times and associated information included in CTS Table 3.3.1-2 are details of Reactor Protection System (RPS) Instrumentation OPERABILITY. The relocation of the RPS Response Time Table to the TRM will not alter the requirement for RPS response times to be maintained within limits and is consistent with NRC Generic Letter 93-08, "Relocation of Technical Specification Tables of Instrument Response Time Limits." ITS LCO 3.3.1.1 requires the RPS Instrumentation to be OPERABLE and SR 3.3.1.1.17 requires that RPS Instrumentation response times be periodically verified to be within limits. Therefore, the requirements of ITS 3.3.1.1 and the associated Surveillance Requirements are adequate to ensure the RPS Instrumentation is maintained

TECHNICAL CHANGES - LESS RESTRICTIVE

LA.1 (cont'd) OPERABLE. As such, these relocated details are not necessary to be in the ITS to provide adequate protection of the public health and safety. The TRM will be incorporated by reference into the LaSalle 1 and 2 UFSAR at ITS implementation. Changes to the TRM will be controlled by the provisions of 10 CFR 50.59.

LA.2 The details in CTS 3.3.1 Action footnotes * and **, relating to placing channels in trip, are proposed to be relocated to the Bases. The ACTIONS of ITS 3.3.1.1 ensure inoperable channels are placed in trip or the unit is placed in a non-applicable MODE or condition, as appropriate. As a result, these relocated details are not necessary for ensuring the appropriate actions are taken in the event of inoperable RPS channels. As such, these relocated details are not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

LA.3 Details of the methods for performing the IRM and APRM CHANNEL CHECK (CTS Table 4.3.1.1-1 Note (b)), and CTS 4.3.1.2, the LOGIC SYSTEM FUNCTIONAL TEST, are proposed to be relocated to the Bases. These details are not necessary to ensure the OPERABILITY of the RPS Instrumentation. The requirements of ITS 3.3.1.1 and the associated Surveillance Requirements are adequate to ensure the RPS instrumentation are maintained OPERABLE. Specifically, the SRs continue to require SRM/IRM and IRM/APRM overlap to be verified and LOGIC SYSTEM FUNCTIONAL TESTS to be performed. As such, these relocated details are not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

LA.4 Requirements for the removal of RPS shorting links in CTS Table 3.3.1-1 Note (b) (including CTS Table 3.3.1-1, Table Notations, footnote *) are proposed to be relocated from the Technical Specifications. The shorting links are required to be removed with any control rod withdrawn from a core cell containing one or more fuel assemblies when SHUTDOWN MARGIN has not been demonstrated and during shutdown margin demonstrations performed per Specification 3.10.3. The primary reactivity control functions during refueling are the refueling interlocks and SHUTDOWN MARGIN. The refueling interlocks are required to be OPERABLE by ITS 3.9.1 and ITS 3.9.2. Although SHUTDOWN MARGIN may not yet have been demonstrated until after CORE ALTERATIONS are completed in MODE 5, SHUTDOWN MARGIN calculations performed prior to

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LA.4 (cont'd) altering the core, along with procedural compliance for any CORE ALTERATIONS, provides indication that adequate SHUTDOWN MARGIN is available. In addition to SRM OPERABILITY with shorting links removed, IRM OPERABILITY will continue to provide backup for the credited functions for any significant reactivity excursions. Since the SRM channel high flux scram (with shorting links removed) provides only an uncredited backup in MODE 5, the relocation of the shorting link removal requirement does not significantly affect safety. Details for control of shorting link removal will be relocated to the Technical Requirements Manual (TRM). The TRM will be incorporated by reference into the LaSalle 1 and 2 UFSAR at ITS implementation. Changes to the TRM will be controlled by the provisions of 10 CFR 50.59.

LA.5 The LPRM inputs for OPERABILITY of the APRM are proposed to be relocated to the Bases. The Bases states that if sufficient LPRMs are not available (the same number as in CTS Table 3.3.1-1, Note (c)), then the associated APRM is inoperable. As such, these details are not necessary in the RPS Instrumentation Table 3.3.1.1-1. The definition of OPERABILITY suffices. In addition, CTS Table 3.3.1-1 Note (i) states that the Turbine Stop Valve — Closure and the Turbine Control Valve Fast Closure, Valve Trip System Oil Pressure — Low Functions shall not be automatically bypassed when THERMAL POWER is greater than or equal to 25% of RATED THERMAL POWER. This system design detail is proposed to be relocated to the Bases. This is a design detail that is not necessary to include in the Technical Specifications to ensure the OPERABILITY of the RPS Instrumentation, since the OPERABILITY requirements are adequately addressed in ITS 3.3.1.1 and proposed SR 3.3.1.1.16. Therefore, the relocated details are not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

LA.6 CTS Table 3.3.1-1 Note (e) states the Main Steam Isolation Valve — Closure Function shall be automatically bypassed when the reactor mode switch is not in the Run position, CTS Table 3.3.1-1 Note (g) states that the Primary Containment Pressure—High Function also actuates the Standby Gas Treatment System, CTS Table 3.3.1-1 Note (j) states that Turbine Stop Valve—Closure and the Turbine Stop Valve Fast Closure, Valve Trip System Oil Pressure—Low Functions also actuate the EOC-RPT System, and CTS Table 2.2.1-1 Function 4 describes the Allowable Value in terms of inches "above instrument zero." These system design details are proposed to be relocated to the UFSAR. These are design details that are not necessary to be included in the Technical

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LA.6 (cont'd) Specifications to ensure the OPERABILITY of the RPS instrumentation since OPERABILITY requirements are adequately addressed in ITS 3.3.1.1. Therefore, the relocated details are not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the UFSAR will be controlled by the provisions of 10 CFR 50.59.

LA.7 CTS 2.2.1 requires the Trip Setpoints to be set consistent with the values shown in the Trip Setpoint column of Table 2.2.1. CTS 2.2.1 Action requires inoperable channels to be restored to OPERABLE status with trip setpoints adjusted consistent with the Trip Setpoint values. Trip setpoints are operational details that are not directly related to the OPERABILITY of the instrumentation. These details are to be relocated to the Technical Requirements Manual (TRM) and the references to these setpoints in CTS 2.2.1 are deleted. The Allowable Value is the required limitation for the associated Function and this value is retained in the Technical Specifications. These relocated trip setpoints are not required to be in the Technical Specifications to provide adequate protection of the public health and safety. The TRM will be incorporated into the LaSalle 1 and 2 UFSAR at ITS implementation. Any changes to the relocated trip setpoints in the TRM will be controlled by the provisions of 10 CFR 50.59.

LA.8 CTS Table 4.3.1.1-1 footnote d includes a definition for the gain adjustment factor (GAF). This information is proposed to be relocated to the Bases. This detail is not necessary to include in the Technical Specifications to ensure OPERABILITY of the RPS instrumentation, since the OPERABILITY requirements are adequately addressed in ITS 3.3.1.1 and SR 3.3.1.1.2. Therefore, the relocated detail is not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

LA.9 The detail in CTS Table 3.3.1-2 footnote "##" (that the response time testing and conformance to the administrative limits for the remaining channel including trip unit and relay logic are required) is proposed to be relocated to the Bases. The purpose of this detail is to ensure that conformance with administrative limits for channel response times are satisfied. These details are not necessary to be included in the Technical Specifications to ensure the OPERABILITY of the RPS instrumentation. The OPERABILITY requirements are adequately addressed in ITS 3.3.1.1 including the associated Surveillance Requirements. The definition of RPS RESPONSE TIME and SR 3.3.1.1.17 require verification that the time interval, from when the monitored parameter exceeds its RPS trip setpoint at the channel sensor until de-energization of the scram pilot valve solenoids, is within

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LA.9 (cont'd) limits. Note 2 to SR 3.3.1.1.17 allows the sensor response time for these Functions to be excluded since the sensor response time is a small part of the overall RPS RESPONSE TIME. Therefore, the requirements of ITS ensure that the response time and conformance to the administrative limits for the remaining portion of the channel are satisfied. As a result, this relocated detail is not necessary for ensuring the OPERABILITY of the associated channels. As such, this relocated detail is not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of ITS.

LD.1 The Frequencies for performing the RPS LOGIC SYSTEM FUNCTIONAL TEST (LSFT) of CTS 4.3.1.2 (proposed SR 3.3.1.1.15), the verification of the bypass setpoints for the Turbine Stop Valve—Closure and Turbine Control Valve Fast Closure, Trip Oil Pressure—Low Functions of CTS Table 4.3.1.1-1 Note (i) (proposed SR 3.3.1.1.16), and the RPS RESPONSE TIME TEST of CTS 4.3.1.3 (proposed SR 3.3.1.1.17) have been extended from 18 months to 24 months. These SRs ensure that RPS logic will function as designed in response to an analyzed event. The proposed change will allow these Surveillances to extend their Surveillance Frequency from the current 18 month Surveillance Frequency (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2) to a 24 month Surveillance Frequency (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2). This proposed change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical maintenance and surveillance data have shown that these tests normally pass their Surveillances at the current Frequency. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. Extending the Surveillance Test interval for the RPS LSFT and RESPONSE TIME TEST is acceptable because the RPS is verified to be operating properly throughout the operating cycle by the performance of CHANNEL FUNCTIONAL TESTS and, in some cases, CHANNEL CHECKS. This testing ensures that a significant portion of the RPS circuitry is operating properly and will detect significant failures of this circuitry. Additional justification for extending the Surveillance Test interval is that the RPS network, including the actuating logic, is designed to be single failure proof and therefore, is highly reliable.

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LD.1 (cont'd) Based on the inherent system and component reliability and the testing performed during the operating cycle, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 24 month Surveillance Frequencies, if performed at the maximum interval allowed by proposed SR 3.0.2 (30 months) do not invalidate any assumptions in the plant licensing basis.

Furthermore, as stated in the NRC Safety Evaluation Report (dated August 2, 1993) relating to extension of the Peach Bottom Atomic Power Station, Unit Numbers 2 and 3 surveillance intervals from 18 to 24 months:

"Industry reliability studies for boiling water reactors (BWRs), prepared by the BWR Owners Group (NEDC-30936P) show that the overall safety systems' reliabilities are not dominated by the reliabilities of the logic system, but by that of the mechanical components, (e.g., pumps and valves), which are consequently tested on a more frequent basis. Since the probability of a relay or contact failure is small relative to the probability of mechanical component failure, increasing the Logic System Functional Test interval represents no significant change in the overall safety system unavailability."

Based on the above discussion, the impact, if any, of this change on system availability is minimal.

LD.2 The Frequency for performing the CTS 4.3.1.1 CHANNEL FUNCTIONAL TEST for CTS Table 4.3.1.1-1 Functional Unit 11, Reactor Mode Switch—Shutdown Position Function (proposed SR 3.3.1.1.12) has been extended from 18 months to 24 months. The Reactor Mode Switch Shutdown Position provides manual trip capability of the Reactor Protection System that is redundant to the automatic protective instrumentation channels and to the Manual Scram pushbuttons. The proposed change will allow this Surveillance to extend its Surveillance Frequency from the current 18 month Surveillance Frequency (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2) to a 24 month Surveillance Frequency (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2). This proposed change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical maintenance and surveillance data have shown that this test normally passes its Surveillance at the current Frequency. An evaluation has been

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LD.2 (cont'd) performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. Extending the Surveillance Test interval for the Reactor Mode Switch— Shutdown Position is acceptable due to the system redundancy and because the RPS System is verified to be operating properly throughout the operating cycle by the performance of CHANNEL FUNCTIONAL TESTS and in some cases, CHANNEL CHECKS on the other trip functions. This testing ensures that a significant portion of the RPS circuitry is operating properly and will detect significant failures of this circuitry. Additional justification for extending the Surveillance Test interval is that the RPS network, including the actuating logic, is designed to be single failure proof and therefore, is highly reliable. Based on the inherent system and component reliability and the testing performed during the operating cycle, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 24 month Surveillance Frequency, if performed at the maximum interval allowed by proposed SR 3.0.2 (30 months) does not invalidate any assumptions in the plant licensing basis.

LE.1 The Frequency for performing the CTS 4.3.1.1 CHANNEL CALIBRATION for CTS Table 4.3.1.1-1 Functional Units 1.a, 2.b, 4, 5, 7, 8, 9, and 10 (proposed SR 3.3.1.1.13 for Functions 1.a, 4, 5, 6, 7, 8, and 9 and proposed SR 3.3.1.1.14 for Function 2.b) has been extended to 24 months. The proposed change will allow these Surveillances to extend their Surveillance Frequency to a 24 month Surveillance Frequency (i.e., a maximum of 30 months accounting for the allowable grace period specified in proposed SR 3.0.2). This proposed change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. The SRs ensure that the RPS System will function as designed during an analyzed event. Extending the SR Frequency is acceptable because the RPS system along with the RPS initiation logic is designed to be single failure proof and therefore is highly reliable. Furthermore, the impacted RPS instrumentation has been evaluated based on make, manufacturer and model number to determine that the instrumentation's actual drift falls within the design allowance in the associated setpoint calculation.

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LE.1 (cont'd)

Functional Unit 1.a, Intermediate Range Monitor (IRM) Neutron Flux—High (currently 18 months)

This function is performed by a fission chamber, voltage preamplifier, and a mean square voltage-wide range monitor. The equipment is supplied by General Electric. It is required to be OPERABLE in MODES 2 and 5 with any control rod withdrawn from a core cell containing one or more fuel assemblies to minimize the consequences of a control rod withdrawal error. During these modes of operation other surveillances are performed more frequently which will detect major deviation in the system. The equipment performance was evaluated utilizing a qualitative analysis. The results of this analysis support 24 month fuel cycle surveillance interval extension.

Functional Unit 2.b, Simulated Thermal Power Time Constant Portion (currently 18 months)

The Average Power Range Monitor Flow Biased Simulated Thermal Power-High Function uses an electronic filter circuit to generate a signal proportional to the core thermal power from the APRM neutron flux signal. This filter circuit is representative of the fuel heat transfer dynamics that produce the relationship between the neutron flux and the core thermal power. The filter time constant is specified in the Core Operating Limits Report (COLR) and must be verified to ensure that the channel is accurately reflecting the desired parameter. Extension of this variable is acceptable because the operation of the circuits associated with the Flow Biased Simulated Thermal power trip are verified by Channel Check, verification of the absolute difference between APRM channels, verification of the flow signal, a Channel Functional Test and a Channel Calibration. (SRs 3.3.1.1.1, 3.3.1.1.2, 3.3.1.1.3, 3.3.1.1.9, and 3.3.1.1.11). This testing ensures that a significant portion of the circuitry is operating properly and will detect significant failures of this circuitry.

Furthermore, as stated in the NRC Safety Evaluation Report (dated August 2, 1993) relating to extension of the Peach Bottom Atomic Power Station, Unit Numbers 2 and 3 surveillance intervals from 18 to 24 months:

"Industry reliability studies for boiling water reactors (BWRs), prepared by the BWR Owners Group (NEDC-30936P) show that the overall safety systems' reliabilities are not dominated by the reliabilities of the logic system, but by that of the mechanical components, (e.g., pumps and valves), which are consequently tested on a more frequent basis. Since the probability of a relay or contact failure is small relative to the probability of mechanical component failure, increasing the Logic System Functional Test interval represents no significant change in the overall safety system unavailability."

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LE.1 (cont'd)

Based on the above discussion, the impact, if any, of this change on system availability is minimal.

Functional Unit 4, Reactor Vessel Water Level—Low, Level 3 (currently 18 months)

This function is performed by Rosemount 1153DB4 Transmitters and Rosemount 710DU Master Trip Units. The Rosemount Transmitters' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Functional Unit 5, Main Steam Isolation Valve - Closure (currently 18 months)

This function is performed by NAMCO EA740 limit switches. Limit switches are mechanical devices that require mechanical adjustment only; drift is not applicable to these devices. Therefore, an increase in surveillance interval to accommodate a 24 month fuel cycle does not affect limit switches with respect to drift.

Functional Unit 7, Primary Containment Pressure - High (currently 92 days)

This function is performed by Static-O-Ring Pressure Switches 12N6-B4-NX-C1A-JJTTX7. The Static-O-Ring Pressure Switches' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Functional Unit 8, Scram Discharge Volume Water Level—High, Float Switch and Scram Discharge Volume Water Level—High, Transmitter/Trip Limit (currently 18 months)

This function is performed by Model 751 float switches manufactured by Magnetrol. These devices are mechanical devices that require mechanical setting at the proper level only; drift is not applicable to these devices. Therefore, an increase in surveillance intervals to accommodate a 24 month fuel cycle does not affect the level switches with respect to drift.

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LE.1 (cont'd) The transmitter/trip unit function is performed by Rosemount 1153DB4 Transmitters and Bailey 745 Trip Units. The Rosemount Transmitters' and Bailey trip units' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Functional Unit 9, Turbine Stop Valve—Closure (currently 18 months)

This function is performed by NAMCO EA170, EA180, and EA740 limit switches. Limit switches are mechanical devices that require mechanical adjustment only; drift is not applicable to these devices. Therefore, an increase in surveillance interval to accommodate a 24 month fuel cycle does not affect limit switches with respect to drift.

Functional Unit 10, Turbine Control Valve Fast Closure, Trip Oil Pressure—Low (currently 18 months)

This function is performed by Static-O-Ring Pressure Switches 9N6-B45-NX-C1A-JJTTX8. The Static-O-Ring Pressure Switches' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Based on the design of the instrumentation and the drift evaluations, it is concluded that the impact, if any, on system availability is minimal as a result of the change in the surveillance test interval. A review of the surveillance test history was performed to validate the above conclusion. This review of the surveillance test history, demonstrates that there are no failures that would invalidate the conclusion that the impact, if any on system availability is minimal from a change to a 24 month surveillance frequency. In addition, the proposed 24 month Surveillance Frequencies, if performed at the maximum interval allowed by proposed SR 3.0.2 (30 months) do not invalidate any assumptions in the plant licensing basis.

LF.1 This change revises the Current Technical Specifications (CTS) Allowable Values to the Improved Technical Specifications (ITS) Allowable Values. ITS Section 3.3 reflects Allowable Values consistent with the philosophy of BWR ISTS, NUREG-1434, Rev. 1. These Allowable Values have been established

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LF.1 (cont'd) consistent with the methods described in ComEd's Instrument Setpoint Methodology (Nuclear Engineering Standard NES-EIC-20.04, "Analysis of Instrument Channel Setpoint Error and Instrument Loop Accuracy"). For most cases, the Allowable Value determinations were calculated using plant specific operating and surveillance trend data or an allowance as provided for by the Instrument Setpoint Methodology. For all other cases, vendor documented performance specification for drift were used. The Allowable Value verification used actual plant operating and surveillance trend information to ensure the validity of the developed Allowable Value. All changes to safety analysis limits applied in the methodologies were evaluated and confirmed as ensuring safety analysis licensing acceptance limits are maintained. All design limits applied in the methodologies were confirmed as ensuring that applicable design requirements of the associated systems and equipment are maintained. The methodologies used have been compared with the guidance of ANSI/ISA S67.04-Part I-1994 and ANSI/ISA RP67.04-Part II-1994. Plant calibration procedures will ensure that the assumptions regarding calibration accuracy, measurement and test equipment accuracy, and setting tolerance are maintained. Setpoints for each design or safety analysis limit have been established by accounting for the applicable instrument accuracy, calibration and drift uncertainties, environmental effects, power supply fluctuations, as well as uncertainties related to process and primary element measurement accuracy using the Instrument Setpoint Methodology. The Allowable Values have been established from each design or safety analysis limit by combining the errors associated with channel/instrument calibration (e.g., device accuracy, setting tolerance, and drift) with the calculated Nominal Trip Setpoint also using the Instrument Setpoint Methodology.

Additionally, each applicable channel/instrument has been evaluated and analyzed to support a fuel cycle extension to a 24 month interval. These evaluations and analyses have been performed utilizing the guidance provided in EPRI TR-103335, "Guidelines for Instrument Calibration Extension/Reduction Programs, Revision 1. The EPRI guidance was used to demonstrate that the data collected by the operating plant (from surveillance testing) has remained acceptable and reasonable with regard to the manufacturers design specifications.

Use of the previously discussed methodologies for determining Allowable Values, instrument setpoints, and analyzing channel/instrument performance ensure that the design basis and associated safety limits will not be exceeded during plant operation. These evaluations, determinations, and analyses now form a portion of the plants design bases.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

"Specific"

L.1 During normal operation in MODES 3 and 4, all control rods are fully inserted and the Reactor Mode Switch Shutdown position control rod withdrawal block (ITS 3.3.2.1) does not allow any control rod to be withdrawn. Under these conditions, the RPS function is not required to be OPERABLE; therefore the IRM Neutron Flux—High, IRM Inoperative, Reactor Mode Switch Shutdown Position, and Manual Scram requirements for MODES 3 and 4 (CTS Tables 3.3.1-1 and 4.3.1.1-1 Functional Units 1.a, 1.b, 11, and 12) have been deleted. The Actions associated with these Functions for MODES 3 and 4 are also deleted (CTS Table 3.3.1-1 Actions 2, 7, and 8). Special Operations LCO 3.10.2 and LCO 3.10.3 will allow a single control rod to be withdrawn in MODES 3 or 4 by allowing the Reactor Mode Switch to be in the Refuel position. Therefore, the IRM MODES 3 and 4 RPS requirements have been included in LCO 3.10.2 and LCO 3.10.3.

L.2 CTS Tables 3.3.1-1 and 4.3.1.1-1 require Functional Units 1.a, 1.b, 11, and 12 (IRM Neutron Flux—High, IRM Inoperative, Reactor Mode Switch Shutdown Position, and Manual Scram) to be OPERABLE in MODE 5. ITS 3.3.1.1 only requires these Functions to be OPERABLE in MODE 5 when a control rod is withdrawn from a core cell containing one or more fuel assemblies (ITS Table 3.3.1.1-1 Note (a)). Control rods withdrawn from or inserted into a core cell containing no fuel assemblies have a negligible impact on the reactivity of the core and therefore are not required to be OPERABLE with the capability to scram. Provided all rods otherwise remain inserted, the RPS Functions serve no purpose and are not required. In this condition the required SHUTDOWN MARGIN (ITS 3.1.1) and the required one-rod-out interlock (ITS 3.9.2) ensure no event requiring RPS will occur. This change is also similar to the allowance provided in CTS Table 3.3.1-1 footnote (h) for Functional Unit 8 (Refer to Discussion of Change L.6 below for further discussion). In addition, CTS Table 3.3.1-1 Actions 3 and 9 as they apply to Functional Units 1.a, 1.b, 11, and 12, have also been modified in ITS 3.3.1.1 ACTION H to be consistent with the new Applicability. Currently, Core Alterations are required to be suspended and all insertable control rods must be inserted. Since all control rods are required to be fully inserted during fuel movement (enforced by ITS 3.9.1), the proposed Applicability cannot be entered while moving fuel. Thus, the only possible Core Alteration is control rod withdrawal, which is adequately addressed in ITS 3.3.1.1 ACTION H. When control rods are withdrawn in MODE 5 in accordance with Special Operations LCOs (ITS 3.10), the requirements of the ITS 3.10 LCO's provide sufficient controls to ensure the possibility of an inadvertent criticality is precluded. Furthermore, CTS Table 3.3.1-1 Action 9

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L.2 (cont'd) also requires the reactor mode switch to be locked in Shutdown. This Action has also been deleted since the proposed Applicability only requires the control rods to be inserted (i.e., once the control rods are inserted, the RPS Functions are no longer required to be OPERABLE, thus there is no need to place the reactor mode switch in Shutdown). This is consistent with the BWR Standard Technical Specifications, NUREG-1434, Rev. 1.

L.3 During normal operation in MODE 3, all control rods are fully inserted and the Reactor Mode Switch Shutdown position control rod withdrawal block (ITS 3.3.2.1) does not allow any control rod to be withdrawn. Under these conditions, the RPS function is not required to be OPERABLE; therefore the APRM Neutron Flux—High, Setdown and APRM Inoperative requirements for MODE 3 in CTS Tables 3.3.1-1 and 4.3.1.1-1 have been deleted. The Action associated with these Functions for MODE 3 (CTS Table 3.3.1-1, ACTION 2) is also removed. Special Operations LCO 3.10.2 will allow a single control rod to be withdrawn in MODE 3 by allowing the Reactor Mode Switch to be in the Refuel position. In this Condition (withdrawal of a single control rod in MODE 3), the APRM RPS requirements are not necessary for safe operation since the IRM RPS requirements will generate the RPS scram or control rod block, if required, due to increased neutron flux.

L.4 The requirement in CTS Table 3.3.1-1 for the APRM Neutron Flux — High, Setdown and APRM Inop Functions to be OPERABLE in MODE 5 is deleted. The requirement, for APRM RPS trip OPERABILITY requirements during SHUTDOWN MARGIN demonstrations, is moved into the SHUTDOWN MARGIN Demonstration Special Operation Technical Specification (ITS 3.10.7).

APRMs are not necessary for safe operation of the plant while operating in MODE 5 with the mode switch in "Refuel" for the following reasons:

- The IRMs are a safety related subsystem of the Neutron Monitoring System (NMS) and are required by Technical Specifications to be OPERABLE in MODE 5 (with a control rod withdrawn). The IRMs will generate an RPS scram or control rod block if neutron flux increased to the applicable setpoint.
- The IRMs and SRMs are designed and calibrated to be more sensitive to neutron flux than the APRMs.

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L.4 (cont'd)

- The IRMs are designed to monitor local core events while the APRMs provide a measure of core average power conditions. The IRMs can monitor and react to the most probable reactivity events expected during refueling, i.e., control rod withdrawal or fuel insertion.

- The IRMs would detect and respond (control rod block or reactor scram) to an inadvertent criticality event before the APRMs would provide a trip function.

- The withdrawal of only one control rod in MODE 5 is permitted by the "one-rod-out" interlock while in "Refuel." The core is designed to be subcritical with one rod out.

- The withdrawal of a second control rod or inadvertent addition of a fuel bundle in MODE 5 is precluded by refueling interlocks, refueling procedures, and administrative controls.

- The APRMs are still required to be OPERABLE during a shutdown margin demonstration performed in MODE 5 (presented in Special Operation ITS LCO 3.10.7).

- The SRMs are required to be OPERABLE in MODE 5.

- The transient analysis discussed in the UFSAR does not require the APRMs to be operational in MODE 5 to mitigate an undesirable operational or transient condition.

In place of the MODE 5 APRM requirements, various levels of control to prevent inadvertent reactor criticality and fuel damage during refueling operations are instituted at LaSalle 1 and 2. These controls include the following:

(a) Licensed plant operators are trained to operate equipment and follow approved procedures.

(b) Plant approved refueling and maintenance procedures specify core alteration steps.

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L.4 (cont'd)

(c) SRMs indicate the potential for reactor criticality and generate a control rod block signal on high neutron flux levels. When SHUTDOWN MARGIN has not been demonstrated, and control rods are withdrawn procedures require the shorting links be removed so that the SRMs will operate in the non-coincident scram mode to cause a reactor scram as necessary.

(d) Refueling interlocks prevent the removal of more than one control rod and prevent the insertion of fuel bundles into the core unless all control rods are fully inserted.

(e) The IRMs provide an indication of local power. IRMs will provide control rod blocks and scram signals on high neutron flux levels.

It is concluded that, should assumed operator errors occur, followed by postulated equipment malfunctions, there are adequate systems and refueling interlocks without the APRMs to preclude inadvertent criticality or violation of a safety limit.

L.5 The Surveillance Frequency of "S/U" and footnote (c), "within 24 hours prior to startup, if not performed within the previous 7 days," associated with the CHANNEL FUNCTIONAL TEST of the APRM Flow Biased Simulated Thermal Power — Upscale Function and APRM Fixed Neutron Flux — High Function in CTS Table 4.3.1.1-1 is redundant to Technical Specifications which require the Surveillance to be performed periodically (once per 92 days) while in the applicable MODES, as required by ITS SR 3.0.1, and must be current prior to entry into the applicable Operational Conditions (CTS 4.0.4 and ITS SR 3.0.4). Once the applicable Conditions are entered, the periodic Surveillance Frequency (92 days) has been determined to provide adequate assurance of OPERABILITY per the reliability analysis of NEDO-30851-P-A, "Technical Specifications Improvement Analysis for BWR Reactor Protection System." Also, the increased testing prior to startup increases the wear on the instruments, thereby reducing overall reliability. Therefore, an additional Surveillance other than the quarterly Surveillance is not needed to assure the instruments will perform their associated safety function.

L.6 The Applicability of CTS Table 3.3.1-1 Functional Unit 8, including Note (h), has been modified to only require ITS Table 3.3.1.1-1 RPS Functions 7.a and 7.b to be OPERABLE in MODE 5 with any control rod withdrawn from a core cell containing one or more fuel assemblies. In addition, ITS 3.3.1.1 ACTION H for MODE 5 only requires action to be initiated to fully insert control rods in

TECHNICAL CHANGES - LESS RESTRICTIVE

L.6 (cont'd) core cells containing one or more fuel assemblies. Control rods withdrawn from or inserted into a core cell containing no fuel assemblies have a negligible impact on the reactivity of the core and therefore are not required to be OPERABLE with the capability to scram. Provided all rods otherwise remain inserted, the RPS Functions serve no purpose and are not required. In this condition the required SHUTDOWN MARGIN (ITS 3.1.1) and the required one-rod-out interlock (ITS 3.9.2) ensure no event requiring RPS will occur. The Action for these inoperable Functions in MODE 5 (CTS Table 3.3.1-1 Action 3) is also revised to be consistent with the proposed Applicability. Currently, Core Alterations are required to be suspended and all insertable control rods must be inserted. Since all control rods are required to be fully inserted during fuel movement (enforced by ITS 3.9.1), the proposed Applicability cannot be entered while moving fuel. The only possible Core Alteration is control rod withdrawal, which is adequately addressed by ITS 3.3.1.1 ACTION H. When control rods are withdrawn in MODE 5 in accordance with Special Operations LCOs (ITS 3.10), the requirements of the ITS 3.10 LCOs provide sufficient controls to ensure the possibility of an inadvertent criticality is precluded.

L.7 The CTS Table 3.3.1-1 Action 6 requirement to initiate a reduction in THERMAL POWER within 15 minutes has been deleted. Immediate power reduction may not always be the conservative method to assure safety. ITS 3.3.1.1 Required Action E.1, which requires the unit to be < 25% RTP within 4 hours (see Discussion of Change L.8 below), ensures prompt action is taken to exit the Applicability due to the inoperability of the associated RPS Functions.

L.8 The time to reach < 25% RTP has been extended from 2 hours (CTS Table 3.3.1-1 Action 6) to 4 hours (ITS 3.3.1.1 Required Action E.1). This extension provides the necessary time to decrease power in a controlled and orderly manner that is within the capabilities of the unit, assuming the minimum required equipment is OPERABLE. This extra time is an acceptable exchange in risk; the risk of an event during the additional period for the unit to be < 25% RTP, versus the potential risk of a unit upset that could challenge safety systems resulting from a rapid power reduction. This time is consistent with the BWR ISTS, NUREG-1434, Rev. 1.

L.9 A Note is being added to the APRM heat balance calibration (CTS Table 4.3.1.1-1 footnote (d), proposed SR 3.3.1.1.2) that states the Surveillance is not required to be performed until 12 hours after THERMAL POWER ≥ 25% RTP. This is allowed because it is difficult to accurately determine core THERMAL POWER from a heat balance < 25% RTP. At low power levels, a high degree of accuracy is unnecessary because of the large inherent margin to thermal limits (MCPR and APLHGR).

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

L.10 The requirements of CTS Table 4.3.1.1-1 footnote (d) to post a notification on the reactor control panel if any required APRM must be adjusted to be within 2% of RATED THERMAL POWER has been deleted. The Operating Licenses limit the operation of each unit to 100% RATED THERMAL POWER (RTP). In addition, the posting of the adjustment in the control room is not necessary to be described in the Technical Specifications. This requirement is essentially an "operator aid" to remind the operators that an adjustment must be made. This requirement is not necessary in the Technical Specifications to ensure power is maintained within the limit allowed by the Operating License. Operators are required by 10 CFR 55 to comply with the Operating License. Therefore, this requirement has been deleted from Technical Specification.

L.11 CTS 4.3.1.3 requires the demonstration of the response time for "each" RPS functional unit in CTS Table 3.3.1-2. The response time for the RPS APRM Simulated Thermal Power - Upscale Function is not credited in any safety analysis. The proposed RPS Response Time test (ITS SR 3.3.1.1.17) is only associated with those Functions that are credited in the accident analysis where an explicit RPS Response Time is assumed. Therefore, the response time test requirement for the RPS APRM Simulated Thermal Power - Upscale Function is deleted. This change is acceptable since the OPERABILITY of the function will still be confirmed during the LOGIC SYSTEM FUNCTIONAL TEST, CHANNEL FUNCTIONAL TEST, and CHANNEL CALIBRATION surveillances.

RELOCATED SPECIFICATIONS

R.1 The Control Rod Drive (CRD) Charging Water Header Pressure-Low scram and associated Delay Timer (CTS Tables 2.2.1-1 and 3.3.1-1, Functional Units 13.a and 13.b) function to provide a reactor scram in the event the control rod accumulator check valves do not maintain sufficient pressure to fully insert the control rods upon loss of CRD System header pressure. However, no design basis accident or transient takes credit for scrams initiated from this instrumentation. Further, the evaluation summarized in Supplement 1 to NEDO-31466 determined the loss of this instrumentation to be a non-significant risk contributor to core damage frequency and offsite release. Therefore, the requirements specified for these Functions in CTS Tables 2.2.1-1 and 3.3.1-1 did not satisfy the NRC Policy Statement Technical Specification screening criteria as documented in the Application of Selection Criteria to the LaSalle 1 and 2 Technical Specifications and have been relocated to the Technical Requirements Manual (TRM). The TRM will be incorporated by reference into the LaSalle 1 and 2 UFSAR at ITS implementation. Changes to the TRM will be controlled in accordance with 10 CFR 50.59.

INSTRUMENTATION

A.1

SOURCE RANGE MONITORS

LIMITING CONDITION FOR OPERATION

two for MODES 3 and 4 — L.6

LCO 3.3.1.2 Table 3.3.1.2-1 3.3.7.6 At least three source range monitor channels shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 2*, 3, and 4.

ACTION:

or more — L.1

Action A a. In OPERATIONAL CONDITION 2* with one or more of the above required source range monitor channels inoperable, restore at least three source range monitor channels to OPERABLE status within 4 hours or

Action C be in at least HOT SHUTDOWN within the next 12 hours.

Add proposed Action B — L.1 — L.6 — A.2

Action D b. In OPERATIONAL CONDITION 3 or 4 with two or more of the above required source range monitor channels inoperable, verify all insertable control rods to be inserted in the core and ~~lock~~ place the reactor mode switch in the Shutdown position within 1 hour. — L.2

SURVEILLANCE REQUIREMENTS

4.3.7.6 Each of the above required source range monitor channels shall be demonstrated OPERABLE by: Add proposed Note to Surveillance Requirements — A.3

a. Performance of a:

1. CHANNEL CHECK at least once per:

SR 3.3.1.2.1 a) 12 hours in CONDITION 2*, and

SR 3.3.1.2.3 b) 24 hours in CONDITION 3 or 4.

SR 3.3.1.2.7 2. CHANNEL CALIBRATION** at least once per ~~18~~ 24 months. — LE.1 — Add proposed Note 2 to SR 3.3.1.2.7 — L.3

SR 3.3.1.2.6 b. Performance of a CHANNEL FUNCTIONAL TEST: — Add proposed SNR determination — M.1

~~1. Within 24 hours prior to moving the reactor mode switch from the Shutdown position, if not performed within the previous 7 days, and~~ — L.4

SR 3.3.1.2.6 2. At least once per 31 days. — Add proposed Note to SR 3.3.1.2.6 — L3

SR 3.3.1.2.4 c. Verifying, ~~prior to withdrawal of control rods,~~ that the SRM count rate is at least 0.7 cps# ~~with the detector fully inserted~~. — LA.1 — M.2

Table 3.3.1.2-1 Note (a) — *With IRM's on range 2 or below.

Note 1 to SR 3.3.1.2.7 — **Neutron detectors may be excluded from CHANNEL CALIBRATION.

SR 3.3.1.2.4 — #Provided signal-to-noise ration is ~~≥2~~ 20:1. Otherwise, 3 cps. — M.6

REFUELING OPERATIONS

3/4.9.2 INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

A.5

LCO 3.3.1.2 and Table 3.3.1.2-1 3.9.2 At least 2 source range monitor* (SRM) channels shall be OPERABLE(#) ~~and inserted to the normal operating level with:~~ LA.2

~~a. Continuous visual indication in the control room,~~

SR 3.3.1.2.2.b & SR 3.3.1.2.2.c b. One of the required SRM detectors located in the quadrant where CORE ALTERATIONS are being performed and the other required SRM detector located in an adjacent quadrant, and

~~c. The "shorting links" removed from the RPS circuitry prior to and during the time any control rod is withdrawn** and shutdown margin demonstrations.~~ LA.3

APPLICABILITY: OPERATIONAL CONDITION 5, ~~unless the following conditions are met:~~

Note to SR 3.3.1.2.4

a. No more than four (4) fuel assemblies are present in each core quadrant associated with an SRM;

b. While in core, these four fuel assemblies are in locations adjacent to the SRM; and M.4

~~c. In the case of movable detectors, detector location shall be selected such that each group of fuel assemblies is separated by at least two (2) fuel cell locations from any other fuel assemblies.~~ LA4

ACTION:

except for control rod insertion A.4

ACTION E With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS and insert all insertable control rods. L.5

initiate action to incore cells containing one or more fuel assemblies

SURVEILLANCE REQUIREMENTS

L.7

4.9.2 Each of the above required SRM channels shall be demonstrated OPERABLE by:

a. At least once per 12 hours:

SR 3.3.1.2.1 1. Performance of a CHANNEL CHECK,

~~2. Verifying the detectors are inserted to the normal operating level, and~~ LA.2

SR 3.3.1.2.2.b & SR 3.3.1.2.2.c 3. Note 1 During CORE ALTERATIONS, verifying that the detector of an OPERABLE SRM channel is located in the core quadrant where CORE ALTERATIONS are being performed and another is located in an adjacent quadrant. add proposed SR 3.3.1.2.a and Note 2 M.5

Note (c) to Table 3.3.1.2-1 *The use of special movable detectors during CORE ALTERATIONS in place of the normal SRM nuclear detectors is permissible as long as these special detectors are connected to the normal SRM circuits.

~~#The normal or emergency power source may be inoperable.~~ A.5

~~**Not required for control rods removed per Specification 3.9.10.1 or 3.9.10.2.~~ LA.3

Add proposed Note (b) to T3.3.1.2-1 L.8

A.1

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.3.1.2.5 b. Performance of a CHANNEL FUNCTIONAL TEST: Add proposed SNR determination and Note M.1

~~1. Within 24 hours prior to the start of CORE ALTERATIONS, and~~ L.4

2. At least once per 7 days.

SR 3.3.1.2.4 c. Verifying that the channel count rate is at least 0.7 cps#:

~~1. Prior to control rod withdrawal,~~ L.4

2. Prior to and at least once per 12 hours during CORE ALTERATIONS, and

3. At least once per 24 hours.

~~d. Verifying that the RPS circuitry "shorting links" have been removed within 8 hours prior to and at least once per 12 hours during:~~

~~1. The time any control rod is withdrawn,## or~~

~~2. Shutdown margin demonstrations.~~ LA.3

Add proposed SR 3.3.1.2.7 M.3

SR 3.3.1.2.4 #Provided signal-to-noise ratio is ~~≥2~~ 20:1 M.6 Otherwise, 3 cps.

~~##Not required for control rods removed per Specification 3.9.10.1 or 3.9.10.2.~~ LA.3

A.1

INSTRUMENTATION

SOURCE RANGE MONITORS

LIMITING CONDITION FOR OPERATION

two for MODES 3 and 4 L.6

LCO 3.3.1.2 Table 3.3.1.2-1 3.3.7.6 At least three source range monitor channels shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 2*, 3, and 4.

ACTION:

or more L.1

ACTION A a. In OPERATIONAL CONDITION 2* with one of the above required source range monitor channels inoperable, restore at least three source range monitor channels to OPERABLE status within 4 hours or be in at least
ACTION C HOT SHUTDOWN within the next 12 hours. Add proposed ACTION B L.1

ACTION D b. In OPERATIONAL CONDITION 3 or 4 with two or more of the above required source range monitor channels inoperable, verify all insertable control rods to be inserted in the core and lock the reactor mode switch in the Shutdown position within 1 hour. place L.2 A.2 L.6

SURVEILLANCE REQUIREMENTS

4.3.7.6 Each of the above required source range monitor channels shall be demonstrated OPERABLE by: Add proposed Note to Surveillance Requirements A.3

a. Performance of a:

1. CHANNEL CHECK at least once per:

SR 3.3.1.2.1 a) 12 hours in CONDITION 2*, and

SR 3.3.1.2.3 b) 24 hours in CONDITION 3 or 4.

24 LE.1

SR 3.3.1.2.7 2. CHANNEL CALIBRATION** at least once per 18 months. Add proposed Note 2 to SR 3.3.1.2.7 L.3

SR 3.3.2.1.6 b. Performance of a CHANNEL FUNCTIONAL TEST: Add proposed SNR determination M.1

1. ~~Within 24 hours prior to moving the reactor mode switch from the Shutdown position, if not performed within the previous 7 days, and~~ L.4

SR 3.3.1.2.6 2. At least once per 31 days. Add proposed Note to SR 3.3.1.2.6 L.3

SR 3.3.1.2.4 c. Verifying, ~~prior to withdrawal of control rods~~, that the SRM count rate is at least 0.7 cps# ~~with the detector fully inserted~~. LA.1 M.2

Table 3.3.1.2-1 Note (a) *With IRM's on range 2 or below.

Note 1 to SR 3.3.1.2.7 **Neutron detectors may be excluded from CHANNEL CALIBRATION.

SR 3.3.1.2.4 #Provided signals-to-noise ratio is ≥ 2. Otherwise, 3 cps. 20:1 M.6

REFUELING OPERATIONS

3/4.9.2 INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

LCO 3.3.1.2 and Table 3.3.1.2-1

A.5 LA.2

3.9.2 At least 2 source range monitor* (SRM) channels shall be OPERABLE@ ~~and inserted to the normal operating level with:~~

~~a. Continuous visual indication in the control room,~~

SR 3.3.1.2.2.b & SR 3.3.1.2.2.c

b. One of the required SRM detectors located in the quadrant where CORE ALTERATIONS are being performed and the other required SRM detector located in an adjacent quadrant, and

~~c. The "shorting links" removed from the RPS circuitry prior to and during the time any control rod is withdrawn** and shutdown margin demonstrations.~~ LA.3

APPLICABILITY: OPERATIONAL CONDITION 5, ~~unless the following conditions are met:~~

Note to SR 3.3.1.2.4

a. No more than four (4) fuel assemblies are present in each core quadrant associated with an SRM;

b. While in core, these four fuel assemblies are in locations adjacent to the SRM; and M.4

~~c. In the case of movable detectors, detector location shall be selected such that each group of fuel assemblies is separated by at least two (2) fuel cell locations from any other fuel assemblies.~~ LA.4

ACTION:

ACTION E

With the requirements of the above specification, except for control rod insertion, not satisfied, immediately suspend all operations involving CORE ALTERATIONS and initiate action to insert all insertable control rods in core cells containing one or more fuel assemblies. A.4 L.5 L.7

SURVEILLANCE REQUIREMENTS

4.9.2 Each of the above required SRM channels shall be demonstrated OPERABLE by:

a. At least once per 12 hours:

SR 3.3.1.2.1

1. Performance of a CHANNEL CHECK,

~~2. Verifying the detectors are inserted to the normal operating level, and~~ LA.2

SR 3.3.1.2.2.b & SR 3.3.1.2.2.c

3. Note 1 During CORE ALTERATIONS, verifying that the detector of an OPERABLE SRM channel is located in the core quadrant where CORE ALTERATIONS are being performed and another is located in an adjacent quadrant. add proposed SR 3.3.1.2.2.a and Note 2 M.5

Note (c) to Table 3.3.1.2-1

*The use of special movable detectors during CORE ALTERATIONS in place of the normal SRM nuclear detectors is permissible as long as these special detectors are connected to the normal SRM circuits.

~~@The normal or emergency power source may be inoperable.~~ A.5

~~**Not required for control rods removed per Specification 3.9.10.1 or 3.9.10.2.~~ LA.3

Add proposed Note (b) to T3.3.1.2-1 L.8

A.1

REFUELING OPERATIONS

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.3.1.2.5

b. Performance of a CHANNEL FUNCTIONAL TEST: — Add proposed SNR determination and Note — M.1

1. ~~Within 24 hours prior to the start of CORE ALTERATIONS, and~~ L.4

2. At least once per 7 days.

SR 3.3.1.2.4

c. Verifying that the channel count rate is at least 0.7 cps#:

1. ~~Prior to control rod withdrawal,~~ L.4

2. Prior to and at least once per 12 hours during CORE ALTERATIONS, and

3. At least once per 24 hours.

d. ~~Verifying that the RPS circuitry "shorting links" have been removed within 8 hours prior to and at least once per 12 hours during:~~ LA.3

1. ~~The time any control rod is withdrawn,## or~~

2. ~~Shutdown margin demonstrations.~~

Add proposed SR 3.3.1.2.7 — M.3

SR 3.3.1.2.4 — #Provided signal-to-noise ratio is > ~~2~~ 20:1 M.6. Otherwise, 3 cps.

~~##Not required for control rods removed per Specification 3.9.10.1 or 3.9.10.2.~~ LA.3

ADMINISTRATIVE

A.1 In the conversion of the LaSalle 1 and 2 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1434, Rev. 1 (i.e., the Improved Standard Technical Specifications (ISTS)).

A.2 Per CTS 3.3.7.6 Action b, in MODES 3 and 4 a single control rod may have been withdrawn under the provisions of proposed Special Operations LCO 3.10.2 and LCO 3.10.3, or some unanticipated event may have resulted in uninserted control rods. Therefore, rather than an action to "verify...inserted," the ITS 3.3.1.2 Required Action D.1 is more definitive; "Fully insert...." This wording provides the same intent in the event all insertable control rods are found to be inserted, but also clarifies that any uninserted control rods are to be inserted.

A.3 A Note has been added to the Surveillance Requirements to provide direction for proper application of the Surveillance Requirements for Technical Specification compliance. This change represents a presentation preference only and is, therefore, considered administrative.

A.4 In the CTS 3.9.2 Action (ITS 3.3.1.2 ACTION E), the phrase, "except for control rod insertion" has been added, since the CTS and ITS definition of a CORE ALTERATION includes control rod insertion. Since the intent of the action to suspend CORE ALTERATIONS was to stop any additional CORE ALTERATIONS, this change (which does not change this intent) is considered administrative in nature.

A.5 CTS 3.9.2 footnote # states that the normal or emergency power source may be inoperable. This requirement is explicit to the definition of OPERABLE-OPERABILITY, as defined in ITS 1.0. Therefore, there is no need to duplicate this requirement in ITS 3.3.1.2, and CTS 3.9.2 footnote # has been deleted as an administrative change.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 A new restriction is added to CTS 4.3.7.6.b and 4.9.2.b (proposed SR 3.3.1.2.6 and proposed SR 3.3.1.2.5, respectively) to determine signal-to-noise ratio. This will ensure the count rate is being measured accurately (i.e., the detectors are inserted and actually measuring count rate from neutrons, not noise). This is an additional restriction on plant operation.

M.2 CTS 4.3.7.6.c requires the SRM count rate to be verified to be within the limit before withdrawal of control rods. In proposed SR 3.3.1.2.4, a time limit has been placed on how soon prior to the withdrawal of control rods the Surveillance must be performed. The check must be performed within 24 hours prior to control rod withdrawal. In addition, the Surveillance must also be performed once per 24 hours in MODE 2 with IRMs on Range 2 or below and in MODES 3 and 4, regardless of whether or not control rods are withdrawn. Since it must be performed at all times, not just prior to control rod withdrawal, the phrase "before withdrawal of control rods" is not needed and has been deleted. Verifying the count rate every 24 hours will ensure the operators are aware of neutron flux levels at all times the SRMs be required to be Operable. This change is more restrictive on plant operation.

M.3 A new Surveillance Requirement has been added, proposed SR 3.3.1.2.7, requiring the SRMs to be calibrated every 24 months if in MODE 5. This SR verifies the performance of the SRM detectors and associated circuitry. This is an additional restriction on plant operation necessary to ensure the OPERABILITY of the SRMs during MODE 5.

M.4 CTS 3.9.2 Applicability provides exceptions to the Operational Condition 5 requirements to maintain at least 2 source range monitor (SRM) channels OPERABLE. CTS 3.9.2 Applicability does not require SRMs to be OPERABLE when no more than four fuel assemblies are present in each core quadrant with an SRM when those fuel assemblies are positioned adjacent to that quadrant's SRM. CTS 3.9.2 also provides specific criteria to be met if movable detectors are being used (See Discussion of Change LA.4). Proposed ITS 3.3.1.2 requires at least two SRM channels to be OPERABLE at all times when in MODE 5 (unless performing a spiral offload or reload), but provides specific allowances in verifying OPERABILITY for conditions when the removal of fuel assemblies would not maintain the required count rate in the Note to proposed SR 3.3.1.2.4. This Surveillance Requirement encompasses the allowances specified in the CTS 3.9.2 Applicability. This change represents an additional restriction on plant operation necessary to ensure the SRMs are capable of monitoring reactivity changes in the core during refueling.

TECHNICAL CHANGES - MORE RESTRICTIVE (continued)

M.5 CTS 4.9.2.a.3 requires verifying that the detector of an OPERABLE SRM channel is located in the core quadrant where CORE ALTERATIONS are being performed and one is located in the adjacent quadrant. ITS SR 3.3.1.2.2 requires verifying that an OPERABLE SRM detector is located in the fueled region; the core quadrant where CORE ALTERATIONS are being performed, when the associated SRM is included in the fueled region; and in a core quadrant adjacent to where CORE ALTERATIONS are being performed, when the associated SRM is included in the fueled region. As a result of providing the additional criteria on where the OPERABLE SRMs must be relocated (one in the fueled region), Note 2 to ITS SR 3.3.1.2.2 is also added to clarify that more than one of the three requirements of ITS SR 3.3.1.2.2 can be satisfied by the same SRM since only two SRMs are required to be OPERABLE. Providing additional criteria on where the SRMs must be located to satisfy the Surveillance represents an additional restriction on plant operation necessary to provide adequate coverage of potential reactivity changes in the core and to achieve consistency with NUREG-1434, Revision 1.

M.6 CTS 4.3.7.6.c (including footnote #) and 4.9.2.c (including footnote #) provide requirements for the source range monitor count rate to be 3 cps, but allows the required count rate to be reduced to 0.7 cps provided the signal-to-noise ratio is ≥ 2:1. This ratio is increased in ITS SR 3.3.1.2.4 to be ≥ 20:1 in accordance with GE SIL 478 and current plant practice. However, this is an additional restriction on plant operation based on CTS requirements.

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

LA.1 The detail of the CTS 4.3.7.6.c method for performing the Surveillance ("with the detector fully inserted") is proposed to be relocated to the Bases. The detail to be relocated is a procedural detail that is not necessary for assuring SRM OPERABILITY. Proposed SR 3.3.1.2.4, along with the other Surveillance Requirements of ITS 3.3.1.2 provide adequate assurance the SRMs are maintained OPERABLE. Therefore, the relocated detail is not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

LA.2 The details of CTS 3.9.2 and 4.9.2.a.2, relating to SRM OPERABILITY (in this case that the SRMs shall be inserted to the normal operating level with continuous indication in the control room) are proposed to be relocated to the Bases. These details for system OPERABILITY are not necessary in the LCO. The definition of OPERABILITY suffices. Therefore, the relocated details are not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

LA.3 The CTS 3.9.2.c, including footnote ##, and CTS 4.9.2.d requirements for the removal of RPS shorting links are proposed to be relocated from the Technical Specifications. The shorting links are required to be removed with any control rod withdrawn from a core cell containing one or more fuel assemblies when SHUTDOWN MARGIN has not been demonstrated. The primary reactivity control functions during refueling are the refueling interlocks and SHUTDOWN MARGIN. The refueling interlocks are required to be OPERABLE by ITS 3.9.1 and ITS 3.9.2. Although SHUTDOWN MARGIN may not yet have been demonstrated until after CORE ALTERATIONS are completed in MODE 5, SHUTDOWN MARGIN calculations performed prior to altering the core, along with procedural compliance for any CORE ALTERATIONS, provides indication that adequate SHUTDOWN MARGIN is available. In addition to SRM OPERABILITY with shorting links removed, IRM OPERABILITY will continue to provide backup for the credited functions for any significant reactivity excursions. Since the SRM channel high flux scram (with shorting links removed) provides only an uncredited backup in MODE 5, the relocation of the shorting link removal requirement does not significantly affect safety. Details for control of shorting link removal will be relocated to the Technical Requirements Manual (TRM). The TRM will be incorporated by reference into the LaSalle 1 and 2 UFSAR at ITS implementation. Changes to the UFSAR will be controlled by the provisions of 10 CFR 50.59.

LA.4 CTS 3.9.2 Applicability provides exceptions to the Operational Condition 5 requirements for source range monitors SRMs. One of these addresses specific additional spatial limitations when movable detectors are being used. These spatial limitations are normally maintained by the fixed location of the SRMs within the core and are only necessary when movable detectors are used. These spatial limitations are relocated to the Bases to describe the details for application of SR 3.3.1.2.4 to movable detectors. The relocated details are not required to be in ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

LE.1 CTS 4.3.7.6.a.2 specifies the Frequency for SRM CHANNEL CALIBRATION as at least once every 18 months. Proposed SR 3.3.1.2.7 will extend the required Frequency to 24 months. Therefore, the Surveillance Test Interval of this SR is being increased from once every 18 months to once every 24 months for a maximum interval of 30 months including the 25% grace period.

This function is performed by General Electric (GE) fission chambers (SRM detectors), GE Pulse Preamplifiers, and GE Source Range Monitors. Extending the SRM calibration interval from 18 months to 24 months is acceptable for the following reasons: The SRMs function is to measure changes in neutron level. SRMs satisfy their design function when shutdown if calibration is sufficient to ensure neutron level is observable when the reactor is shutdown and this is verified at least every 24 hours when the reactor is shutdown; SRMs satisfy their design function in Mode 2 if calibration is sufficient to ensure overlap with the IRMs and IRM/SRM overlap is verified prior to fully withdrawing SRMs; and, SRMs have no safety function and are not assumed to function during any UFSAR design basis accident or transient analysis. Additionally, SRM response to reactivity changes is distinctive and well known to plant operators and SRM response is closely monitored during these reactivity changes. Therefore, any substantial degradation of the SRMs will be evident prior to the scheduled performance of these tests. Based on the above discussion, the impact, if any, from the surveillance test frequency increase on system availability will be minimal. The equipment drift was evaluated utilizing a qualitative analysis. The results of this analysis supports a 24 month fuel cycle surveillance interval extension.

A review of the surveillance test history for each of these Surveillance requirements was performed to validate the above conclusion. This historical review of the surveillance test history demonstrates that there are no failures that would invalidate the conclusion that the impact, if any, of this change on system reliability is minimal.

"Specific"

L.1 Since CTS 3.3.7.6 Action a only specifies an action for one required SRM inoperable during MODE 2, CTS 3.3.7.6 requires a plant shutdown if two or more required SRMs become inoperable (in accordance with CTS 3.0.3). This requirement is unnecessarily restrictive and does not allow concentration of the efforts on repair when more than one required SRM is inoperable. The words

TECHNICAL CHANGES - LESS RESTRICTIVE

L.1 (cont'd) "or more" are added (ITS 3.3.1.2 Condition A) to allow the action to apply to two or three inoperable SRMs (i.e., allow 4 hours to restore the inoperable SRMs). This is acceptable based on the limited risk of an event occurring during the time the SRMs are inoperable and the desire to concentrate efforts on repair, rather than an immediate shutdown which is currently required by CTS 3.0.3, with one or no SRMs OPERABLE. Additionally, with no OPERABLE SRMs, the ability to monitor positive reactivity changes is significantly restricted, thus ITS 3.3.1.2 ACTION B is added to ensure that no further control rod withdrawal is allowed. Further, requiring an immediate plant shutdown could, with no SRMs OPERABLE, pose a greater risk since the APRMs and IRMs are inadequate for monitoring neutron flux in the source range.

L.2 CTS 3.3.7.6 Action b requirement to "lock" the mode switch in Shutdown is proposed to be deleted from the Technical Specifications. The required position of the reactor mode switch in MODE 3 or 4 is adequately controlled by the MODES definition Table (ITS Table 1.1-1). Movement of the reactor mode switch from the Shutdown position is adequately controlled by ITS Table 1.1-1. Reactor mode switch positions other than Shutdown result in the unit entering some other MODE; with the associated Technical Specification compliance requirements of that MODE and of ITS 3.0.4.

L.3 A Note to CTS 4.3.7.6.a.2 and 4.3.7.6.b has been added (the Note to proposed SR 3.3.1.2.6 and Note 2 to proposed SR 3.3.1.2.7) which would allow entry into the MODES and conditions where the SRMs are required to be OPERABLE, prior to satisfactory completion of the required CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION. This is effectively a CTS 4.0.4 exception. The SRMs are required in MODES 2 and 3, but not in MODE 1, and the required Surveillance cannot be performed in MODE 1 (prior to entry in the applicable MODE 2 or 3) without utilizing jumpers or lifted leads. Use of these devices is not recommended since minor errors in their use may significantly increase the probability of a reactor transient or event which is a precursor to a previously analyzed accident. Therefore, time is allowed to conduct the SR after entering the applicable MODE.

L.4 CTS 4.3.7.6.b.1, 4.9.2.b.1, and 4.9.2.c.1 (proposed SR 3.3.1.2.6, proposed SR 3.3.1.2.5, and proposed SR 3.3.1.2.4, respectively) require Surveillances to be performed prior to starting certain evolutions. These additional Surveillance Frequencies are redundant to Technical Specifications which requires the Surveillances to be performed periodically while in the applicable MODE or other specified condition, as required by CTS 3.0.1 and proposed SR 3.0.1, and

TECHNICAL CHANGES - LESS RESTRICTIVE

L.4 (cont'd) must be current prior to entering the applicable MODE or other specified condition as required by CTS 4.0.4 and proposed SR 3.0.4. Once the applicable MODE or other specified condition is entered, the required periodic Frequencies have been determined to be sufficient verification that the source range monitors are properly functioning. Moving the reactor mode switch, withdrawing control rods, and performing CORE ALTERATIONS do not impact the ability of the monitors to perform their required function. Therefore, an additional Surveillance required to be performed "prior to" one of these events is an extraneous and unnecessary performance of a Surveillance.

L.5 CTS 3.9.2 Action requires fully inserting all insertable control rods if one or more required SRMs are inoperable in MODE 5. In this condition, ITS 3.3.1.2 only requires inserting all insertable control rods in core cell containing one or more fuel assemblies (ITS 3.3.1.2 Required Action E.2). Control rods withdrawn from or inserted into a core cell containing no fuel assemblies have a negligible impact on the reactivity of the core and therefore are not required to be inserted to maintain the reactor subcritical.

L.6 CTS 3.3.7.6 requires three SRMs to be OPERABLE when in MODES 2, 3, and 4 and CTS 3.3.7.6 Action b requires actions to be performed in MODES 3 and 4 when two or more of the three SRMs are inoperable. CTS 3.3.7.6 does not provide direction when one of the three SRMs is inoperable in these MODES. During startup in MODE 2, control rods are capable of being withdrawn or are being withdrawn to bring the reactor to a critical state. Therefore, three SRMs are required to be OPERABLE to monitor the reactor flux level prior to and during control rod withdrawal to ensure that the approach to criticality and the achievement of criticality occurs as expected. The three required SRMs ensure a representation of overall core response during periods when reactivity changes are occurring throughout the reactor core. In MODES 3 and 4, the reactor mode switch is in the shutdown position and, as a result, all control rods are inserted. In this condition, ITS 3.3.1.2 is revised to only require two SRMs to be OPERABLE. This reduction in the number of SRMs required to be OPERABLE is considered to be acceptable since the reactor is shutdown and reactivity changes that may result in criticality are not expected since the ITS 3.1.1, SHUTDOWN MARGIN (SDM), requirements must still be met. Should a reactivity change occur, redundant monitoring capability of flux levels of the reactor core will continue to be provided by the two required SRMs. In addition, ITS Table 1.1-1 requires the reactor mode switch to be in the shutdown position in MODES 3 and 4, which ensures that all control rods are

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

L.6 (cont'd) inserted. A corresponding change to CTS 3.3.7.6 Action b is also made to require actions to be taken when one or more required SRMs are inoperable in MODES 3 and 4 (the same level of degradation addressed in CTS 3.3.7.6 Action b).

L.7 The CTS 3.9.2 Action to immediately "...insert all insertable control rods" is revised to "initiate action to insert all insertable control rods...." During MODE 5, it may not be possible to immediately insert all insertable control rods. In this situation, the CTS do not provide direction as to the action to take if control rods cannot be inserted immediately. As a result, the ITS provide a Required Action (ITS 3.3.1.2 Required Action E.2) to immediately initiate action and continue attempts to insert all insertable control rods. This change ensures that actions are taken to insert all insertable control rods in a timely manner while continuing to provide direction if attempts fail to immediately insert all insertable control rods. This change is considered to be acceptable since ITS 3.3.1.2 Required Action E.1 ensures the probability of occurrence of postulated events involving changes in reactivity in the MODE 5 is minimized by suspension of CORE ALTERATIONS.

L.8 A new Note has been added to CTS 3.9.2 (ITS Table 3.3.1.2-1 Note b) that allows only one SRM to be OPERABLE under certain conditions. In MODE 5, during a spiral offload or reload, an SRM outside the fueled region will no longer be required to be OPERABLE, since it is not capable of monitoring normal changes in neutron flux in the fueled region of the core. However, the SRM detector in the fueled region must be OPERABLE, as required by proposed SR 3.3.1.2.2.a and Note 2 to SR 3.3.1.2.2 (see Discussion of Change M.3). The SRM count rate will be required during fuel loading where the SRM is in the fueled region and four bundles are around this SRM (as currently required by CTS 4.9.2.c and modified by Discussion of Change M.4 and included in proposed SR 3.3.1.2.4).

RELOCATED SPECIFICATIONS

None

3/4.3.6 CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

LCO 3.3.2.1 3.3.6 The control rod withdrawal block instrumentation channels shown in Table 3.3.6-1 shall be OPERABLE ~~with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.6-2.~~ LA.3

APPLICABILITY: As shown in Table 3.3.6-1.

ACTION:

ACTIONS A and B

a. With a control rod withdrawal block instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.6-2, declare the channel inoperable until the channel is restored to OPERABLE status ~~with its trip setpoint adjusted consistent with the Trip Setpoint value.~~ LA.3

ACTIONS A and B

b. With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement, take the ACTION required by Table 3.3.6-1.

SURVEILLANCE REQUIREMENTS

NOTE 1 TO SURVEILLANCES 4.3.6 Each of the above required control rod withdrawal block trip systems and instrumentation channels shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST* and CHANNEL CALIBRATION operations for the OPERATIONAL CONDITIONS and at the frequencies shown in Table 4.3.6-1.

NOTE 2 TO SURVEILLANCES * A channel may be placed in an inoperable status for up to 6 hours for required surveillance ~~or 12 hours for repair~~ 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. M.1

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Table 3.3.2.1-1

TABLE 3.3.6-1

CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION

Function

TRIP FUNCTION LA.1	MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION	APPLICABLE OPERATIONAL CONDITIONS	ACTION
1. ROD BLOCK MONITOR(a)		A.2	
1.a a. Upscale	2	1*	60
1.b b. Inoperative	2	1*	60
1.c c. Downscale	2	1*	60
2. APRM			
a. Flow Biased Simulated Thermal Power-Upscale	4	1	61
b. Inoperative	4	1, 2, 5	61
c. Downscale	4	1	61
d. Neutron Flux-High	4	2, 5	61
3. SOURCE RANGE MONITORS			
a. Detector not full in(b)	3	2	61
	2	5	61
b. Upscale(c)	3	2	61
	2	5	61
c. Inoperative(c)	3	2	61
	2	5	61
d. Downscale(d)	3	2	61
	2	5	61
4. INTERMEDIATE RANGE MONITORS			
a. Detector not full in	6	2, 5	61
b. Upscale	6	2, 5	61
c. Inoperative	6	2, 5	61
d. Downscale(e)	6	2, 5	61
5. SCRAM DISCHARGE VOLUME			
a. Water Level-High	2	1, 2, 5**	62
b. Scram Discharge Volume Switch in Bypass	1	5**	62
6. RECIRCULATION FLOW UNIT			
a. Upscale	2	1	62
b. Inoperative	2	1	62
c. Comparator	2	1	62

ACTIONS A and B

R.1

A.1

M.5

Add proposed Function 3 of Table 3.3.2.1-1

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ITS 3.3.2.1

 A.1 ITS 3.3.2.1

ACTION

ACTIONS A and B

ACTION 60 - Declare the RBM inoperable and take the ACTION required by Specification 3.1.4.3.

~~ACTION 61 - With the number of OPERABLE channels:~~

~~a. One less than required by the Minimum OPERABLE Channels per Trip Function requirement, restore the inoperable channel to OPERABLE status within 7 days or place the inoperable channel in the tripped condition within the next hour.~~

~~b. Two or more less than required by the Minimum OPERABLE Channels per Trip Function requirement, place at least one inoperable channel in the tripped condition within one hour.~~

~~ACTION 62 - With the number of OPERABLE Channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, place the inoperable channel in the tripped condition within 12 hours.~~ R.1

NOTE

TABLE 3.3.2.1-1 Note (a)

• With THERMAL POWER ≥ 30% of RATED THERMAL POWER and no peripheral control rod selected. A.2

~~** With more than one control rod withdrawn. Not applicable to control rods removed per Specification 3.9.10.1 or 3.9.10.2.~~ R.1

~~a. The RBM shall be automatically bypassed when a peripheral control rod is selected.~~ LA.1

~~b. This function shall be automatically bypassed if detector count rate is ≥ 100 cps or the IRM channels are on range 3 or higher.~~

~~c. This function shall be automatically bypassed when the associated IRM channels are on range 8 or higher.~~

~~d. This function shall be automatically bypassed when the IRM channels are on range 3 or higher.~~

~~e. This function shall be automatically bypassed when the IRM channels are on range 1.~~ R.1

Add proposed ACTION E M.5

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Table 3.3.2.1-1

TABLE 3.3.6-2

CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION SETPOINTS LF.1

Function TRIP FUNCTION	~~TRIP SETPOINT~~ LA.3	ALLOWABLE VALUE
1. ROD BLOCK MONITOR		
1.a a. Upscale The Rod Block Monitor Upscale Setpoints shall be established according to the relationships specified in the CORE OPERATING LIMITS REPORT.		
1.b b. Inoperative	~~N.A.~~ LA.3	N.A.
1.c c. Downscale	~~≥ 5% of RATED THERMAL POWER~~	≥ 3% of RATED THERMAL POWER LF.1
~~2. APRM~~		
~~a. Flow Biased Simulated Thermal Power-Upscale~~		
~~1) Two Recirculation Loop Operation~~	~~≤ 0.58 W + 47%*~~	~~≤ 0.58 W + 50%*~~
~~2) Single Recirculation Loop Operation~~	~~≤ 0.58 W + 42.3%~~	~~≤ 0.58 W + 45.3%*~~
~~b. Inoperative~~	~~N.A.~~	~~N.A.~~
~~c. Downscale~~	~~≥ 5% of RATED THERMAL POWER~~	~~≥ 3% of RATED THERMAL POWER~~
~~d. Neutron Flux-High~~	~~≤ 12% of RATED THERMAL POWER~~	~~≤ 14% of RATED THERMAL POWER~~
~~3. SOURCE RANGE MONITORS~~		
~~a. Detector not full in~~	~~N.A.~~	~~N.A.~~
~~b. Upscale~~	~~< 2×10^5 cps~~	~~< 5×10^5 cps~~
~~c. Inoperative~~	~~N.A.~~	~~N.A.~~
~~d. Downscale~~	~~≥ 0.7 cps~~	~~≥ 0.5 cps~~
~~4. INTERMEDIATE RANGE MONITORS~~		
~~a. Detector not full in~~	~~N.A.~~	~~N.A.~~
~~b. Upscale~~	~~< 108/125 of full scale~~	~~< 110/125 of full scale~~
~~c. Inoperative~~	~~N.A.~~	~~N.A.~~
~~d. Downscale~~	~~≥ 5/125 of full scale~~	~~≥ 3/125 of full scale~~

A.1

R.1

R.1

TABLE 3.3.6-2 (Continued)

CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION SETPOINTS

TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
5. SCRAM DISCHARGE VOLUME		
a. Water Level-High	≤ 765' 5¼"	≤ 765' 5¼"
b. Scram Discharge Volume Switch in Bypass	N.A.	N.A.
6. REACTOR COOLANT SYSTEM RECIRCULATION FLOW		
a. Upscale	≤ 108/125 of full scale	≤ 111/125 of full scale
b. Inoperative	N.A.	N.A.
c. Comparator	≤ 10% flow deviation	≤ 11% flow deviation

A.1

*The Average Power Range Monitor rod block function is varied as a function of recirculation loop flow (W).

ITS 3.3.2.1

Table 3.3.2.1-1

TABLE 4.3.6-1

CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Function TRIP FUNCTION	CHANNEL CHECK	SR 3.3.2.1.1 CHANNEL FUNCTIONAL TEST	SR 3.3.2.1.4 CHANNEL CALIBRATION(a)	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
	L.1	LA.2	Note to SR 3.3.2.1.4	A.2
1. ROD BLOCK MONITOR				
1.a a. Upscale	NA	~~S/U(b)(c)~~, Q(c)	Q	1*
1.b b. Inoperative	NA	~~S/U(b)(c)~~, Q(c)	N.A.	1*
1.c c. Downscale	NA	~~S/U(b)(c)~~, Q(c)	Q	1* R.1
2. APRM				
a. Flow Biased Simulated Thermal Power-Upscale	NA	S/U(b), Q	SA	1
b. Inoperative	NA	S/U(b), Q	N.A.	1, 2, 5
c. Downscale	NA	S/U(b), Q	SA	1
d. Neutron Flux-High	NA	S/U(b), Q	SA	2***, 5
3. SOURCE RANGE MONITORS				
a. Detector not full in	NA	S/U(b), W	N.A.	2***, 5
b. Upscale	NA	S/U(b), W	Q	2***, 5
c. Inoperative	NA	S/U(b), W	N.A.	2***, 5
d. Downscale	NA	S/U(b), W	Q	2***, 5
4. INTERMEDIATE RANGE MONITORS				
a. Detector not full in	NA	S/U(b), W	N.A.	2***, 5
b. Upscale	NA	S/U(b), W	Q	2***, 5
c. Inoperative	NA	S/U(b), W	N.A.	2***, 5
d. Downscale	NA	S/U(b), W	Q	2***, 5
5. SCRAM DISCHARGE VOLUME				
a. Water Level-High	NA	Q	R	1, 2, 5**
b. Scram Discharge Volume Switch in Bypass	NA	Q	N.A.	5**
6. REACTOR COOLANT SYSTEM RECIRCULATION FLOW				
a. Upscale	NA	S/U(b), Q	Q	1
b. Inoperative	NA	S/U(b), Q	N.A.	1
c. Comparator	NA	S/U(b), Q	Q	1

A.1

Add proposed SR 3.3.2.1.5 — M.2

Add proposed SR 3.3.2.1.7 — M.5

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ITS 3.3.2.1

CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION SURVEILLANCE REQUIREMENTS

NOTES:

NOTE TO SR 3.3.2.1.4 a. Neutron detectors may be excluded from CHANNEL CALIBRATION. L.1 for RBM

~~b. Within 24 hours prior to startup, if not performed within the previous 7 days.~~ R.1 for Functions 2-6

LA.2 ~~c. Includes reactor manual control multiplexing system input.~~

Table 3.3.2.1-1 Note (a) * With THERMAL POWER ≥ 30% of RATED THERMAL POWER. and no peripheral control rod selected A.2

~~** With more than one control rod withdrawn. Not applicable to control rods removed per Specification 3.9.10.1 or 3.9.10.2.~~

~~*** The provisions of Specification 4.0.4 are not applicable for a period of 24 hours after entering OPERATIONAL CONDITION 2 or 3 when shutting down from OPERATIONAL CONDITION 1.~~

R.1

A.1

REACTIVITY CONTROL SYSTEM

3/4.1.4 CONTROL ROD PROGRAM CONTROLS

ROD WORTH MINIMIZER

LIMITING CONDITION FOR OPERATION

LCO 3.3.2.1 Table 3.3.2.1-1 FUNCTION 2 3.1.4.1 The rod worth minimizer (RWM) shall be OPERABLE. M.3

APPLICABILITY: OPERATIONAL CONDITIONS 1 and 2*, when THERMAL POWER is less than or equal to 10% of RATED THERMAL POWER, the minimum allowable low power setpoint.

ACTION: Add proposed Required Actions C.2.1.1 and C.2.1.2 L.2

CONDITIONS C+D a. With the RWM inoperable, verify control rod movement and compliance with the prescribed control rod pattern by a second licensed operator or other technically qualified member of the unit technical staff who is present at the reactor control console. Otherwise, control rod movement may be only by actuating the manual scram or placing the reactor mode switch in the Shutdown position.

Required Actions C.2.2 and D.1

Required Action C.1

SR 3.3.2.1.9 b. With an inoperable control rod(s), OPERABLE control rod movement may continue by bypassing the inoperable control rod(s) in the RWM provided that:

1. The position and bypassing of inoperable control rods is verified by a second licensed operator or other technically qualified member of the unit technical staff, and

2. ~~There are not more than 3 inoperable control rods in any RWM group.~~ L.3

c. ~~The provisions of Specification 3.0.4 are not applicable~~ with the ~~exception that control rod withdrawal for reactor startup shall not begin with the RWM inoperable.~~ A.3 L.2

SURVEILLANCE REQUIREMENTS

4.1.4.1 The RWM shall be demonstrated OPERABLE:

SR 3.3.2.1.2 AND NOTE, SR 3.3.2.1.3 AND NOTE a. In OPERATIONAL CONDITION 2 prior to withdrawal of control rods for the purpose of making the reactor critical, and in OPERATIONAL CONDITION 1 prior to reaching 10% of RATED THERMAL POWER when reducing THERMAL POWER, ~~by verifying proper annunciation of the selection error of at least one out-of-sequence control rod.~~ L.4 LA.2

NOTE TO SR 3.3.2.1.2 *Entry into OPERATIONAL CONDITION 2 and withdrawal of selected control rods is permitted for the purpose of determining the OPERABILITY of the RWM prior to withdrawal of control rods for the purpose of bringing the reactor to criticality. M.3

A.1

REACTIVITY CONTROL SYSTEM

3/4.1.4 CONTROL ROD PROGRAM CONTROLS

ROD WORTH MINIMIZER

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.3.2.1.2 AND NOTE b. In OPERATIONAL CONDITION 2 prior to withdrawal of control rods for the purpose of making the reactor critical, by verifying the rod block function ~~by demonstrating inability to withdraw an out-of-sequence control rod.~~ L.4 LA.2

SR 3.3.2.1.3 AND NOTE c. In OPERATIONAL CONDITION 1 within one hour after RWM automatic initiation when reducing THERMAL POWER, ~~by verifying the rod block function by demonstrating inability to withdraw an out-of-sequence control rod.~~ L.4 LA.2

SR 3.3.2.1.8 d. By verifying the control rod patterns and sequence input to the RWM computer is correctly loaded following any loading of the program into the computer.

Add proposed SR 3.3.2.1.6 M.4

REACTIVITY CONTROL SYSTEM

A.1

ROD BLOCK MONITOR

LIMITING CONDITION FOR OPERATION

LCO 3.3.2.1
Table 3.3.2.1-1
Function 1

3.1.4.3 Both rod block monitor (RBM) channels shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITION 1, when THERMAL POWER is greater than or equal to 30% of RATED THERMAL POWER, and no peripheral control rod is selected A.2

ACTION:

L.5

Action A
Action B

a. With one RBM channel inoperable, ~~verify that the reactor is not operating on a LIMITING CONTROL ROD PATTERN and~~ restore the inoperable RBM channel to OPERABLE status within 24 hours; otherwise, place the inoperable rod block monitor channel in the tripped condition within the next hour.

Action B

b. With both RBM channels inoperable, place at least one inoperable rod block monitor channel in the tripped condition within one hour.

SURVEILLANCE REQUIREMENTS

4.1.4.3 Each of the above required RBM channels shall be demonstrated OPERABLE by performance of a:

SR 3.3.2.1.1
SR 3.3.2.1.4

a. CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION at the frequencies and for the OPERATIONAL CONDITIONS specified in Table 4.3.6-1.

~~b. CHANNEL FUNCTIONAL TEST prior to control rod withdrawal when the reactor is operating on a LIMITING CONTROL ROD PATTERN.~~ L.5

3/4.3.6 CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION A.1

ITS 3.3.2.1

LIMITING CONDITION FOR OPERATION

LCO 3.3.2.1 3.3.6 The control rod withdrawal block instrumentation channels shown in Table 3.3.6-1 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.6-2. LA.3

APPLICABILITY: As shown in Table 3.3.6-1.

ACTION:

ACTIONS A AND B a. With a control rod withdrawal block instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.6-2, declare the channel inoperable until the channel is restored to OPERABLE status with its trip setpoint adjusted consistent with the Trip Setpoint value. LA.3

ACTIONS A AND B b. With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement, take the ACTION required by Table 3.3.6-1.

SURVEILLANCE REQUIREMENTS

Note 1 to Surveillances 4.3.6 Each of the above required control rod withdrawal block trip systems and instrumentation channels shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST* and CHANNEL CALIBRATION operations for the OPERATIONAL CONDITIONS and at the frequencies shown in Table 4.3.6-1.

M.1

Note 2 to Surveillances * A channel may be placed in an inoperable status for up to 6 hours for required surveillance or 12 hours for repair 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.

Table 3.3.2.1-1

TABLE 3.3.6-1

CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION

LA.1

A.2

R.1

M.5

Add proposed Function 3 of Table 3.3.2.1-1

Function TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION	APPLICABLE OPERATIONAL CONDITIONS	ACTION
1. ROD BLOCK MONITOR(a)			
1.a a. Upscale	2	1*	60
1.b b. Inoperative	2	1*	60
1.c c. Downscale	2	1*	60
2. APRM			
a. Flow Biased Simulated Thermal Power-Upscale	4	1	61
b. Inoperative	4	1, 2, 5	61
c. Downscale	4	1	61
d. Neutron Flux-High	4	2, 5	61
3. SOURCE RANGE MONITORS			
a. Detector not full in(b)	3	2	61
	2	5	61
b. Upscale(c)	3	2	61
	2	5	61
c. Inoperative(c)	3	2	61
	2	5	61
d. Downscale(d)	3	2	61
	2	5	61
4. INTERMEDIATE RANGE MONITORS			
a. Detector not full in	6	2, 5	61
b. Upscale	6	2, 5	61
c. Inoperative	6	2, 5	61
d. Downscale(e)	6	2, 5	61
5. SCRAM DISCHARGE VOLUME			
a. Water Level-High	2	1, 2, 5**	62
b. Scram Discharge Volume Switch in Bypass	1	5**	62
6. RECIRCULATION FLOW UNIT			
a. Upscale	2	1	62
b. Inoperative	2	1	62
c. Comparator	2	1	62

ACTIONS A and B

A.1

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ITS 3.3.2.1

TABLE 3.3.6-1 (Continued) A.1

CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION

ACTION

ACTIONS A and B

ACTION 60 - Declare the RBM inoperable and take the ACTION required by Specification 3.1.4.3.

R.1

~~ACTION 61 - With the number of OPERABLE channels:~~

~~a. One less than required by the Minimum OPERABLE Channels per Trip Function requirement, restore the inoperable channel to OPERABLE status within 7 days or place the inoperable channel in the tripped condition within the next hour.~~

~~b. Two or more less than required by the Minimum OPERABLE Channels per Trip Function requirement, place at least one inoperable channel in the tripped condition within one hour.~~

~~ACTION 62 - With the number of OPERABLE Channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, place the inoperable channel in the tripped condition within 12 hours.~~

NOTE

Table 3.3.2.1-1 Note (a) * With THERMAL POWER ≥ 30% of RATED THERMAL POWER and no peripheral control rod selected. A.2

~~** With more than one control rod withdrawn. Not applicable to control rods removed per Specification 3.9.10.1 or 3.9.10.2.~~ R.1

~~a. The RBM shall be automatically bypassed when a peripheral control rod is selected.~~ LA.1

~~b. This function shall be automatically bypassed if detector count rate is ≥ 100 cps or the IRM channels are on range 3 or higher.~~ R.1

~~c. This function shall be automatically bypassed when the associated IRM channels are on range 8 or higher.~~

~~d. This function shall be automatically bypassed when the IRM channels are on range 3 or higher.~~

~~e. This function shall be automatically bypassed when the IRM channels are on range 1.~~

Add proposed ACTION E — M.5

Table 3.3.2.1-1

TABLE 3.3.6-2

CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION SETPOINTS

LF.1

Function TRIP FUNCTION	TRIP SETPOINT LA3	ALLOWABLE VALUE
1. ROD BLOCK MONITOR		
1.a a. Upscale	The Rod Block Monitor Upscale Setpoints shall be established according to the relationships specified in the CORE OPERATING LIMITS REPORT.	
1.b b. Inoperative	N.A.	N.A.
1.c c. Downscale	≥ 5% of RATED THERMAL POWER LA3	≥ 3% of RATED THERMAL POWER LF.1
2. APRM		
a. Flow Biased Simulated Thermal Power-Upscale		
1) Two Recirculation Loop Operation	≤ 0.58 W + 47%*	≤ 0.58 W + 50%*
2) Single Recirculation Loop Operation	< 0.58 W + 42.3%	< 0.58 W + 45.3%*
b. Inoperative	N.A.	N.A.
c. Downscale	≥ 5% of RATED THERMAL POWER	≥ 3% of RATED THERMAL POWER
d. Neutron Flux-High	≤ 12% of RATED THERMAL POWER	≤ 14% of RATED THERMAL POWER
3. SOURCE RANGE MONITORS		
a. Detector not full in	N.A.	N.A.
b. Upscale	< 2 x 10^5 cps	< 5 x 10^5 cps
c. Inoperative	N.A.	N.A.
d. Downscale	≥ 0.7 cps	≥ 0.5 cps
4. INTERMEDIATE RANGE MONITORS		
a. Detector not full in	N.A.	N.A.
b. Upscale	< 108/125 of full scale	< 110/125 of full scale
c. Inoperative	N.A.	N.A.
d. Downscale	≥ 5/125 of full scale	≥ 3/125 of full scale

R.1

A.1

TABLE 3.3.6-2 (Continued)

CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION SETPOINTS

R.1

TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
5. SCRAM DISCHARGE VOLUME		
a. Water Level-High	≤ 765' 5¼"	≤ 765' 5¼"
b. Scram Discharge Volume Switch in Bypass	N.A.	N.A.
6. REACTOR COOLANT SYSTEM RECIRCULATION FLOW		
a. Upscale	≤ 108/125 of full scale	≤ 111/125 of full scale
b. Inoperative	N.A.	N.A.
c. Comparator	≤ 10% flow deviation	≤ 11% flow deviation

*The Average Power Range Monitor rod block function is varied as a function of recirculation loop flow (W).

A.1

ITS 3.3.2.1

Table 3.3.2.1-1

TABLE 4.3.6-1

CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Function TRIP FUNCTION	CHANNEL CHECK	SR 3.3.2.1.1 CHANNEL FUNCTIONAL TEST	SR 3.3.2.1.4 CHANNEL CALIBRATION(a)	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
1. ROD BLOCK MONITOR		L.1	LA.1 Note to SR 3.3.2.1.4	A.2
1.a a. Upscale	N.A.	~~S/U(b)(c)~~ Q(c)	Q	1*
1.b b. Inoperative	N.A.	~~S/U(b)(c)~~ Q(c)	N.A.	1*
1.c c. Downscale	N.A.	~~S/U(b)(c)~~ Q(c)	Q	1*
~~2. APRM~~				R.1
~~a. Flow Biased Simulated Thermal Power-Upscale~~	~~N.A.~~	~~S/U(b), Q~~	~~SA~~	~~1~~
~~b. Inoperative~~	~~N.A.~~	~~S/U(b), Q~~	~~N.A.~~	~~1, 2, 5~~
~~c. Downscale~~	~~N.A.~~	~~S/U(b), Q~~	~~SA~~	~~1~~
~~d. Neutron Flux-High~~	~~N.A.~~	~~S/U(b), Q~~	~~SA~~	~~2***, 5~~
~~3. SOURCE RANGE MONITORS~~				
~~a. Detector not full in~~	~~N.A.~~	~~S/U(b), W~~	~~N.A.~~	~~2***, 5~~
~~b. Upscale~~	~~N.A.~~	~~S/U(b), W~~	~~Q~~	~~2***, 5~~
~~c. Inoperative~~	~~N.A.~~	~~S/U(b), W~~	~~N.A.~~	~~2***, 5~~
~~d. Downscale~~	~~N.A.~~	~~S/U(b), W~~	~~Q~~	~~2***, 5~~
~~4. INTERMEDIATE RANGE MONITORS~~				
~~a. Detector not full in~~	~~N.A.~~	~~S/U(b), W~~	~~N.A.~~	~~2***, 5~~
~~b. Upscale~~	~~N.A.~~	~~S/U(b), W~~	~~Q~~	~~2***, 5~~
~~c. Inoperative~~	~~N.A.~~	~~S/U(b), W~~	~~N.A.~~	~~2***, 5~~
~~d. Downscale~~	~~N.A.~~	~~S/U(b), W~~	~~Q~~	~~2***, 5~~
~~5. SCRAM DISCHARGE VOLUME~~				
~~a. Water Level-High~~	~~N.A.~~	~~Q~~	~~R~~	~~1, 2, 5**~~
~~b. Scram Discharge Volume Switch in Bypass~~	~~N.A.~~	~~Q~~	~~N.A.~~	~~5**~~
~~6. REACTOR COOLANT SYSTEM RECIRCULATION FLOW~~				
~~a. Upscale~~	~~N.A.~~	~~S/U(b), Q~~	~~Q~~	~~1~~
~~b. Inoperative~~	~~N.A.~~	~~S/U(b), Q~~	~~N.A.~~	~~1~~
~~c. Comparator~~	~~N.A.~~	~~S/U(b), Q~~	~~Q~~	~~1~~

A.1

Add proposed SR 3.3.1.2.5 M.2

Add proposed SR 3.3.1.2.7 M.5

Page 16 of 20

ITS 3.3.2.1

CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TABLE NOTATIONS

Note to SR 3.3.2.1.4 (a) Neutron detectors may be excluded from CHANNEL CALIBRATION. L.1 for RBM

~~(b) Within 24 hours prior to startup, if not performed within the previous 7 days.~~ R.1 for Functions 2-6

LA.2 ~~(c) Includes reactor manual control multiplexing system input.~~

Table 3.3.2.1-1 Note(a) * With THERMAL POWER ≥ 30% of RATED THERMAL POWER. and no peripheral control rod selected A.2

~~** With more than one control rod withdrawn. Not applicable to control rods removed per Specification 3.9.10.1 or 3.9.10.2.~~

~~*** The provisions of Specification 4.0.4 are not applicable for a period of 24 hours after entering OPERATIONAL CONDITION 2 or 3 when shutting down from OPERATIONAL CONDITION 1.~~

R.1

A.1

ITS 3.3.2.1

3/4.1.4 CONTROL ROD PROGRAM CONTROLS

ROD WORTH MINIMIZER

LIMITING CONDITION FOR OPERATION

LCO 3.3.2.1
Table 3.3.2.1-1
Function 2

3.1.4.1 The rod worth minimizer (RWM) shall be OPERABLE. M.3

APPLICABILITY: OPERATIONAL CONDITIONS 1 and 2*, when THERMAL POWER is less than or equal to 10% of RATED THERMAL POWER, the minimum allowable low power setpoint.

Add proposed Required Actions C.2.1.1 and C.2.1.2 — L.2

ACTION:

Conditions C + D

a. With the RWM inoperable, verify control rod movement and compliance with the prescribed control rod pattern by a second licensed operator or other technically qualified member of the unit technical staff who is present at the reactor control console. Otherwise, control rod movement may be only by actuating the manual scram or placing the reactor mode switch in the Shutdown position.

Required Actions C.2.2 and D.1

Required Action C.1

SR 3.3.2.1.9

b. With an inoperable control rod(s), OPERABLE control rod movement may continue by bypassing the inoperable control rod(s) in the RWM provided that:

1. The position and bypassing of inoperable control rods is verified by a second licensed operator or other technically qualified member of the unit technical staff, and

2. ~~There are not more than 3 inoperable control rods in any RWM group.~~ L.3

c. ~~The provisions of Specification 3.0.4 are not applicable,~~ A.3 ~~with the exception that control rod withdrawal for reactor startup shall not begin with the RWM inoperable.~~ L.2

SURVEILLANCE REQUIREMENTS

4.1.4.1 The RWM shall be demonstrated OPERABLE: L.4

SR 3.3.2.1.2 AND NOTE
SR 3.3.2.1.3 AND NOTE

a. In OPERATIONAL CONDITION 2 prior to withdrawal of control rods for the purpose of making the reactor critical, and in OPERATIONAL CONDITION 1 prior to reaching 10% of RATED THERMAL POWER when reducing THERMAL POWER, ~~by verifying proper annunciation of the selection error of at least one out-of-sequence control rod.~~ LA.2

NOTE TO SR 3.3.2.1.2

*Entry into OPERATIONAL CONDITION 2 and withdrawal of selected control rods is permitted for the purpose of determining the OPERABILITY of the RWM prior to withdrawal of control rods for the purpose of bringing the reactor to criticality. M.3

3/4.1.4 CONTROL ROD PROGRAM CONTROLS A.1

ROD WORTH MINIMIZER

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.3.2.1.2 AND NOTE b. In OPERATIONAL CONDITION 2 prior to withdrawal of control rods for the purpose of making the reactor critical, by verifying the rod block function ~~by demonstrating inability to withdraw an out-of-sequence control rod.~~ L.4 LA.2

SR 3.3.2.1.3 AND NOTE c. In OPERATIONAL CONDITION 1 within one hour after RWM automatic initiation when reducing THERMAL POWER, ~~by verifying the rod block function by demonstrating inability to withdraw an out-of-sequence control rod.~~ L.4 LA.2

SR 3.3.2.1.8 d. By verifying the control rod patterns and sequence input to the RWM computer is correctly loaded following any loading of the program into the computer.

Add proposed SR 3.3.2.1.6 M.4

LIMITING CONDITION FOR OPERATION

LCO 3.3.2.1
TABLE 3.3.2.1-1
FUNCTION 1

3.1.4.3 Both rod block monitor (RBM) channels shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITION 1, when THERMAL POWER is greater than or equal to 30% of RATED THERMAL POWER. and no peripheral control rod is selected A.2

ACTION:

L.5

ACTION A / ACTION B

a. With one RBM channel inoperable, ~~verify that the reactor is not operating on a LIMITING CONTROL ROD PATTERN and~~ restore the inoperable RBM channel to OPERABLE status within 24 hours; otherwise, place the inoperable rod block monitor channel in the tripped condition within the next hour.

ACTION B

b. With both RBM channels inoperable, place at least one inoperable rod block monitor channel in the tripped condition within one hour.

SURVEILLANCE REQUIREMENTS

4.1.4.3 Each of the above required RBM channels shall be demonstrated OPERABLE by performance of a:

SR 3.3.2.1.1
SR 3.3.2.1.4

a. CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION at the frequencies and for the OPERATIONAL CONDITIONS specified in Table 4.3.6-1.

~~b. CHANNEL FUNCTIONAL TEST prior to control rod withdrawal when the reactor is operating on a LIMITING CONTROL ROD PATTERN.~~

L.5

ADMINISTRATIVE

A.1 In the conversion of the LaSalle 1 and 2 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1433, Rev. 1 (i.e., the Improved Standard Technical Specifications (ISTS)).

A.2 The Applicability for CTS Tables 3.3.6-1 and 4.3.6-1 Trip Functions 1.a, 1.b, and 1.c., including footnote *, and CTS 3.1.4.3 is "OPERATIONAL CONDITION 1, when THERMAL POWER is greater than or equal to 30% of RATED THERMAL POWER." With THERMAL POWER ≥ 30% RTP, the unit will always be in MODE 1. Therefore, it is unnecessary to state in the Applicability of CTS Tables 3.3.6-1 and 4.3.6-1, Trip Functions 1.a, 1.b, and 1.c, and CTS 3.1.4.3 (ITS Table 3.3.2.1-1, Functions 1.a, 1.b, and 1.c). In addition, CTS Tables 3.3.6-1 and 4.3.6-1 footnote * and LCO 3.1.4.3 (ITS Table 3.3.2.1-1 Note (a)) have been modified to not require the RBM to be Operable when a peripheral control rod is selected. The RBM design includes an automatic bypass when a peripheral rod is selected as described in CTS Table 3.3.6-1, Note (a). Therefore, since it is part of the design, this change is considered administrative.

A.3 The allowance in CTS 3.1.4.1 Action c, which states that the provisions of Specification 3.0.4 are not applicable has been deleted since proposed LCO 3.0.4 provides this allowance (i.e., the allowance has been moved to LCO 3.0.4). Therefore, deletion of this allowance is administrative.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 Footnote * to the CTS 4.3.6 requirement to perform a CHANNEL FUNCTIONAL TEST permits a channel to be placed in an inoperable status, without requiring actions to be taken, for up to 12 hours to repair the channel provided at least one other OPERABLE channel in the same trip system is monitoring that parameter. This allowance has not been retained in ITS 3.3.2.1. In the event a RBM channel is found to require repair (i.e., it is found to be inoperable), ITS 3.3.2.1 requires the RBM channel to be declared inoperable immediately and applicable Required Actions taken, even if one other OPERABLE channel is monitoring the parameter. This change represents an additional restriction upon plant operation necessary to achieve consistency with the ISTS.

TECHNICAL CHANGES - MORE RESTRICTIVE (continued)

M.2 A new RBM Surveillance has been added (proposed SR 3.3.2.1.5) to verify the automatic enabling points of the RBM. This SR ensures that the RBM Functions are not inadvertently bypassed with power level ≥ 30% RTP and with a peripheral control rod not selected. This is an additional restriction on plant operation to ensure the proper operation of the RBM.

M.3 The CTS 3.1.4.1 footnote * allows entry into MODE 2 for the purpose of determining RWM Operability before withdrawal of control rods for the purpose of bringing the reactor critical. Also, CTS 4.1.4.1.a and b only require the RWM to be tested prior to the withdrawal of control rods for the purpose of making the reactor critical. The Note to proposed SR 3.3.2.1.2 will require the RWM to be determined Operable (by performing a CHANNEL FUNCTIONAL TEST) within 1 hour after withdrawal of any control rod when RTP is ≤ 10%, not just when the withdrawal is for the purpose of making the reactor critical. This change is necessary to ensure the safety analysis assumptions concerning control rod worth are maintained by ensuring the RWM is Operable during any potential change in control rod worth. This is an additional restriction on plant operation.

M.4 A new RWM Surveillance has been added (proposed SR 3.3.2.1.6) to verify the automatic enabling point of the RWM. This SR ensures that the RWM is not inadvertently bypassed with power level ≤ 10% RTP. This is an additional restriction on plant operation to ensure proper operation of the RWM.

M.5 Proposed Technical Specification 3.3.2.1 contains requirements regarding the Reactor Mode Switch—Shutdown Position channels (i.e., Function 3 of Table 3.3.2.1-1, ACTION E, and SR 3.3.2.1.7). These requirements have been added to CTS 3/4.3.6. During MODES 3 and 4, and during MODE 5 when the reactor mode switch is required to be in the shutdown position, the core is assumed to be subcritical. The Reactor Mode Switch—Shutdown Position control rod withdrawal block ensures that the reactor remains subcritical by blocking control rod withdrawal, thereby preserving the assumptions of the safety analysis. This change imposes additional restrictions upon plant operation.

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

LA.1 CTS Table 3.3.6-1 Note (a) states that the RBM shall be automatically bypassed when a peripheral control rod is selected. This system design detail is proposed to be relocated to the UFSAR. This design detail is not necessary to be included in the Technical Specifications to ensure the OPERABILITY of the RBM instrumentation since OPERABILITY requirements are adequately addressed in ITS 3.3.2.1. In addition, when a peripheral control rod is selected, RBM is automatically bypassed and cannot generate a rod block. Therefore, the Applicabilities for the RBM Functions have been modified to be ≥ 30% RTP and no peripheral control rod selected, consistent with the design and CTS Table 3.3.6-1 Note (a) (See Discussion of Change A.2 above). As such, the relocated detail is not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the UFSAR will be controlled by the provisions of 10 CFR 50.59.

LA.2 Details in Table 4.3.6-1 Function 1, footnote (c), CTS 4.1.4.1.a, CTS 4.1.4.1.b, and CTS 4.1.4.1.c of the methods for performing Surveillances are proposed to be relocated to the Bases. The requirements proposed to be relocated are procedural details that are not necessary for assuring control rod block instrumentation OPERABILITY. The Surveillance Requirements of ITS 3.3.2.1 provide adequate assurance the control rod block instrumentation are maintained OPERABLE. As such, the relocated details are not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

LA.3 CTS 3.3.6 requires the Trip Setpoints to be set consistent with the values shown in the Trip Setpoint column of Table 3.3.6-2. CTS 3.3.6 Action a requires inoperable channels to be restored to OPERABLE status with trip setpoints adjusted consistent with the Trip Setpoint values. Trip Setpoints are operational details that are not directly related to the OPERABILITY of the instrumentation. These details are to be relocated to the Technical Requirements Manual (TRM) and the references to these setpoints in CTS 3.3.6 are deleted. The Allowable Values are the required limitation for the associated Functions and these values are retained in the Technical Specifications. These relocated trip setpoints are not required to be in the Technical Specifications to provide adequate protection of the public health and safety. The TRM will be incorporated by reference into the LaSalle 1 and 2 UFSAR at ITS implementation. Any changes to the relocated trip setpoints in the TRM will be controlled by the provisions of 10 CFR 50.59.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

LF.1 This change revises the Current Technical Specifications (CTS) Allowable Values to the Improved Technical Specifications (ITS) Allowable Values. ITS Section 3.3 reflects Allowable Values consistent with the philosophy of BWR ISTS, NUREG-1434, Rev. 1. These Allowable Values have been established consistent with the methods described in ComEd's Instrument Setpoint Methodology (Nuclear Engineering Standard NES-EIC-20.04, "Analysis of Instrument Channel Setpoint Error and Instrument Loop Accuracy"). For most cases, the Allowable Value determinations were calculated using plant specific operating and surveillance trend data or an allowance as provided for by the Instrument Setpoint Methodology. For all cases, vendor documented performance specifications for drift were used. The Allowable Value verification used actual plant operating and surveillance trend information to ensure the validity of the developed Allowable Value. All changes to safety analysis limits applied in the methodologies were evaluated and confirmed as ensuring safety analysis licensing acceptance limits are maintained. All design limits applied in the methodologies were confirmed as ensuring that applicable design requirements of the associated systems and equipment are maintained. The methodologies used have been compared with the guidance of ANSI/ISA S67.04-Part I-1994 and ANSI/ISA RP67.04-Part II-1994. Plant calibration procedures will ensure that the assumptions regarding calibration accuracy, measurement and test equipment accuracy, and setting tolerance are maintained. Setpoints for each design or safety analysis limit have been established by accounting for the applicable instrument accuracy, calibration and drift uncertainties, environmental effects, power supply fluctuations, as well as uncertainties related to process and primary element measurement accuracy using the Instrument Setpoint Methodology. The Allowable Values have been established from each design or safety analysis limit by combining the errors associated with channel/instrument calibration (e.g., device accuracy, setting tolerance, and drift) with the calculated Nominal Trip Setpoint also using the Instrument Setpoint Methodology.

Additionally, each applicable channel/instrument has been evaluated and analyzed to support a fuel cycle extension to a 24 month interval. These evaluations and analyses have been performed utilizing the guidance provided in EPRI TR-103335, "Guidelines for Instrument Calibration Extension/Reduction Programs, Revision 1. The EPRI guidance was used to demonstrate that the data collected by the operating plant (from surveillance testing) has remained acceptable and reasonable with regard to the manufacturers design specifications.

TECHNICAL CHANGES - LESS RESTRICTIVE

LF.1 (cont'd) Use of the previously discussed methodologies for determining Allowable Values, instrument setpoints, and analyzing channel/instrument performance ensure that the design basis and associated safety limits will not be exceeded during plant operation. These evaluations, determinations, and analyses now form a portion of the plants design bases.

"Specific"

L.1 CTS Table 4.3.6-1 requires a CHANNEL FUNCTIONAL TEST of the rod block monitor functions to be conducted within 24 hours prior to startup, if not performed within the previous 7 days. This Frequency has not been retained in proposed SR 3.3.2.1.1. The ability of the rod block monitors to perform their function is not impacted by performing a reactor startup. The Frequency defined in proposed SR 3.3.2.1.1 (i.e., 92 days) is sufficient to ensure that the rod block monitors are capable of performing their function. Additionally, the requirements of proposed SR 3.0.4 provide assurance the SR is met within its Frequency prior to entering the MODE or condition requiring OPERABILITY of the equipment.

L.2 With the RWM inoperable prior to a reactor startup, CTS 3.1.4.1 Action c does not allow a startup to commence. Proposed Required Action C.2.1.2 will allow one reactor startup to commence once per calendar year with the RWM inoperable. This change is consistent with the allowance provided by the NRC in their acceptance of NEDE-24011-P-A, Amendment 17.

This document provided the requirements for deleting the RSCS System and changing the RWM low power setpoint to 10% RTP. LaSalle 1 and 2 implemented these changes in Amendment 88 (Unit 1) and Amendment 73 (Unit 2); however, the allowance to startup with the RWM inoperable was not provided. In addition, LaSalle 1 and 2 are allowed to continue a startup if the RWM becomes inoperable after the first rod is pulled. Proposed Required Action C.2.1.1 will impose additional restrictions in that at least 12 rods must be withdrawn prior to allowing the startup to continue if the RWM becomes inoperable and not crediting this as the one startup with the RWM inoperable. These two changes are an acceptable method for ensuring that the reliability of the RWM is maintained and that reactor startup with the RWM inoperable is not routinely made. These changes are also consistent with the BWR ISTS, NUREG-1433, Rev. 1.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

L.3 Although CTS 3.1.4.1 Action b.2 prohibits continued operation if more than 3 rods in any RWM group are inoperable when the RWM is required to be OPERABLE, CTS 3.1.3.1 Actions a.1.a) and b.1.a.1) provide necessary constraints on multiple rod inoperability relying on separation of the rods by at least two control cells in all directions. This has been translated in ACTION D of ITS 3.1.3 when thermal power is ≤ 10% RTP. The elimination of the CTS 3.1.4.1 Action b.2 requirement to have no more than 3 inoperable control rods in any RWM group is considered to be acceptable based on the analyses in NEDO-21231, "Banked Position Withdrawal Sequence." Section 7 of NEDO-21231 describes the effects that operation with inoperable control rods has on a control rod drop accident (CRDA). Two cases were analyzed to determine the peak fuel enthalpy for various patterns of inoperable control rods. These cases were analyzed using GE fuel.

The first case (referred to here as Case 1) analyzed the effects on control rod worth using a control rod geometry with 6 control rods bypassed and fully inserted in the same BPWS group. As noted in NEDO-21231, this pattern violates the maximum of 3 inoperable control rods in a single control rod group criterion. However, Case 1 maintained the separation criterion required by ITS 3.1.3. Case 1 examined BPWS Rod Group 7 (Sequence A) since this group was determined to have the highest incremental control rod worth. In addition, only 6 bypassed and fully inserted inoperable control rods were analyzed in Case 1 because more than 6 control rods in this condition would have resulted in not meeting the separation criterion. The results of Case 1 showed that peak fuel enthalpy would reach approximately 162 cal/gm (NEDO-21231, Page 7-2).

Another case (referred to here as Case 2) analyzed the effects on control rod worth using a control rod geometry with 8 inoperable control rods bypassed and fully inserted (maximum number of inoperable control rods allowed by Technical Specifications) in the lower right portion of the core. As noted in NEDO-21231, this pattern maintained separation criteria and the maximum of 3 inoperable control rods in a single BPWS group criterion. Case 2 examined this control rod worth geometry (all inoperable rods in the same region of the core) to show the effects the reactivity shift would have on the highest incremental control rod worth. The results of Case 2 showed that peak fuel enthalpy would reach approximately 232 cal/gm (NEDO-21231, Page 7-3).

TECHNICAL CHANGES - LESS RESTRICTIVE

L.3 (cont'd) As stated in NEDO-21231, both cases showed that peak fuel enthalpy is "...well below the 280 cal/gm design basis." As a result, these analyses, which bound all other cases, indicate that CRDA design basis assumptions are maintained if more than 3 control rods are inoperable in the same BPWS group provided there are ≤ 8 inoperable control rods and that each inoperable control rod is separated by at least two OPERABLE control rods. Additionally, ComEd performs cycle-specific CRDA analyses that incorporate 8 control rods out of service with at least two cell separation, that confirm the fuel energy deposition is less than 280 calories per gram. Therefore, this change which deletes the restriction on continued operation if more than 3 control rods in any RWM group are inoperable is acceptable since the inoperable control rod criteria are maintained in the Technical Specifications; ≤ 8 inoperable control rods (ITS 3.1.3 Condition E) and each inoperable control rod is required to be separated by at least two OPERABLE control rods (ITS 3.1.3 Condition D). These criteria have been demonstrated to be adequate for ensuring CRDA design basis assumptions are maintained.

L.4 CTS 4.1.4.1.a and b require a RWM CHANNEL FUNCTIONAL TEST to be performed prior to withdrawal of control rods for the purpose of making the reactor critical and CTS 4.1.4.1.a and c require a RWM CHANNEL FUNCTIONAL TEST to be performed prior to reaching 10% RTP and 1 hour after the RWM is initiated during a plant shutdown. Proposed SRs 3.3.2.1.2 and 3.3.2.1.3 are similar to CTS 4.1.4.1.a, b, and c, except a test Frequency is specified (92 days). This change effectively extends the CHANNEL FUNCTIONAL TEST to 92 days, i.e., the CHANNEL FUNCTIONAL TEST is not required to be performed if a startup or shutdown occurs within 92 days of a previous startup or shutdown. The RWM is a reliable system, as shown by both a review of maintenance history and by successful completion of previous startup surveillances. As a result, the effect on safety due to the extended Surveillance is small. Also, the increased testing prior to each startup and shutdown increases the wear on the instruments, thereby reducing overall reliability. Therefore, an additional Surveillance other than the quarterly Surveillance is not needed to assure the instruments will perform their associated safety function. In addition, other similar rod block functions have a 92 day CHANNEL FUNCTIONAL TEST. Notes are also being added to CTS 4.1.4.1.a and b. The Note to proposed SR 3.3.2.1.2 exempts the CHANNEL FUNCTIONAL TEST requirement of the RWM until 1 hour after any control rod is withdrawn at ≤ 10% RTP in MODE 2. The Note to proposed SR 3.3.2.1.3 exempts the CHANNEL FUNCTIONAL TEST requirement of the RWM until 1 hour after THERMAL POWER is ≤ 10% RTP in MODE 1. These changes are acceptable since the only way the required Surveillances can be performed prior to entry in the specified condition is by utilizing jumpers or lifted leads. Use of these

TECHNICAL CHANGES - LESS RESTRICTIVE

L.4 (cont'd) devices is not recommended since minor errors in their use may significantly increase the probability of a reactor transient or event which is a precursor to a previously analyzed accident. Therefore, time is allowed to conduct the Surveillances after entering the specified condition.

L.5 CTS 3.1.4.3 Action a, which requires verification that the reactor is not operating on a LIMITING CONTROL ROD PATTERN when one RBM channel is inoperable, and Surveillance Requirement 4.1.4.3.b, which requires a CHANNEL FUNCTIONAL TEST prior to control rod withdrawal when the reactor is operating on a LIMITING CONTROL ROD PATTERN, have been deleted. The definition of the LIMITING CONTROL ROD PATTERN is also being deleted. Since a LIMITING CONTROL ROD PATTERN is in operation on a power distribution limit (such as APLHGR or MCPR), the condition is extremely unlikely. The status of power distribution limits does not affect the Operability of the RBM and therefore, no additional requirements on the RBM System are required (e.g., that it be tripped within one hour with a channel inoperable while on a LIMITING CONTROL ROD PATTERN). Adequate requirements on power distribution limits are specified in the LCOs in Section 3.2. Furthermore, due to the improbability of operating exactly on a thermal limit, the CTS Action and Surveillance Requirement would almost never be required. In addition, since the Surveillance Requirement is not specific as to when "prior to," and could be satisfied by the initial Surveillance that detected the LIMITING CONTROL ROD PATTERN has been achieved, its deletion is not safety significant.

RELOCATED SPECIFICATIONS

R.1 The APRM, SRM, IRM, Scram Discharge Volume, and Recirculation Flow Unit control rod blocks of CTS 3.3.6 function to prevent positive reactivity insertion under conditions approaching those where RPS actuation maybe expected. However, no design basis accident or transient takes credit for rod block signals initiated by this instrumentation. Further, the evaluation summarized in NEDO-31466 determined the loss of this instrumentation to be a non-significant risk contributor to core damage frequency and offsite release. Therefore, the requirements specified for these Functions in CTS 3.3.6 did not satisfy the NRC Policy Statement Technical Specification screening criteria as documented in the Application of Selection Criteria to the LaSalle 1 and 2 Technical Specifications and have been relocated to the Technical Requirements Manual (TRM). The TRM will be incorporated by reference into the LaSalle 1 and 2 UFSAR at ITS implementation. Changes to the TRM will be controlled in accordance with 10 CFR 50.59.

3/4.3.8 FEEDWATER/MAIN TURBINE TRIP SYSTEM ACTUATION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

LCO 3.3.2.2 3.3.8 The feedwater/main turbine trip system actuation instrumentation channels shown in Table 3.3.8-1 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.8-2. LA.1

APPLICABILITY: OPERATIONAL CONDITION 1 THERMAL POWER ≥ 25% RTP L.1

ACTION: add proposed ACTIONS Note A.2

ACTION A and B a. With a feedwater/main turbine trip system actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.8-2, declare the channel inoperable until the channel is restored to OPERABLE status with its trip setpoint adjusted consistent with the Trip Setpoint value. LA.1

b. With one or more channels required by Table 3.3.8-1 inoperable: L.2

ACTION B 1. Within 2 hours, verify sufficient channels remain OPERABLE or tripped* to maintain trip capability, and add proposed Required Action C.1

ACTION A 2. Within 7 days, either place the inoperable channel(s) in the trip system in the tripped* condition or restore the inoperable channel(s) to OPERABLE status. 4 L.1 A.3

ACTION C c. Otherwise, be in at least STARTUP within 6 hours. < 25% RTP L.1

SURVEILLANCE REQUIREMENTS

SR 3.3.2.2.1 through SR 3.3.2.2.3 4.3.8.1 Each feedwater/main turbine trip system actuation instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3.8.1-1. A.4

SR 3.3.2.2.4 4.3.8.2 LOGIC SYSTEM FUNCTIONAL TESTS and simulated automatic operation breaker and valve actuation of all channels shall be performed at least once per 18 24 months. LD.1

LA.2

*An inoperable channel need not be placed in the tripped condition where this would cause the Trip Function to occur.

ITS 3.3.2.2

A.1

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TABLE 3.3.8-1

FEEDWATER/MAIN TURBINE TRIP SYSTEM ACTUATION INSTRUMENTATION

TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM
LCO 3.3.2.2 a. Reactor Vessel Water Level-High, Level 8	4*

NOTE to Surveillance Requirements

*A channel may be placed in an inoperable status for up to 6 hours for required surveillance testing without placing the Trip System in the tripped condition.

TABLE 3.3.8-2

FEEDWATER/MAIN TURBINE TRIP SYSTEM ACTUATION INSTRUMENTATION SETPOINTS

SR 3.3.2.2.3 A.5

TRIP FUNCTION	~~TRIP SETPOINT~~	ALLOWABLE VALUE
a. Reactor Vessel Water Level-High, Level 8	~~< 55.5 inches*~~ LA.1	< 56.0 inches* LF.1

LCO 3.3.2.2

~~*See Bases Figure B 3/4 3-1.~~ A.5

A.1

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ITS 3.3.2.2

TABLE 4.3.8.1-1

FEEDWATER/MAIN TURBINE TRIP SYSTEM ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	SR 3.3.2.2.1 CHANNEL CHECK	SR 3.3.2.2.2 CHANNEL FUNCTIONAL TEST	SR 3.3.2.2.3 CHANNEL CALIBRATION
LCO 3.3.2.2 a. Reactor Vessel Water Level-High, Level 8	S	Q	R 24 months LE.1

A.1

ITS 3.3.2.2

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INSTRUMENTATION

3/4.3.8 FEEDWATER/MAIN TURBINE TRIP SYSTEM ACTUATION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

LCO 3.3.2.2 3.3.8 The feedwater/main turbine trip system actuation instrumentation channels shown in Table 3.3.8-1 shall be OPERABLE ~~with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.8-2.~~ LA.1

APPLICABILITY: ~~OPERATIONAL CONDITION 1.~~ THERMAL POWER ≥ 25% RTP L.1

ACTION: add proposed ACTIONS Note A.2

ACTIONS A and B a. With a feedwater/main turbine trip system actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.8-2, declare the channel inoperable until the channel is restored to OPERABLE status ~~with its trip setpoint adjusted consistent with the Trip Setpoint value.~~ LA.1

b. With one or more channels required by Table 3.3.8-1 inoperable: L.2

ACTION B 1. Within 2 hours, verify sufficient channels remain OPERABLE or tripped* to maintain trip capability, and add proposed Required Action C.1

ACTION A 2. Within 7 days, either place the inoperable channel(s) in the trip system in the tripped* condition ~~or restore the inoperable channel(s) to OPERABLE status.~~ A.3

ACTION C c. Otherwise, be in at least ~~STARTUP~~ < 25% RTP within ~~6~~ 4 hours. L.1

SURVEILLANCE REQUIREMENTS

SR 3.3.2.2.1 through SR 3.3.2.2.3 4.3.8.1 Each feedwater/main turbine trip system actuation instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3.8.1-1.

SR 3.3.2.2.4 4.3.8.2 LOGIC SYSTEM FUNCTIONAL TESTS and ~~simulated automatic operation~~ breaker and valve actuation of all channels shall be performed at least once per ~~18~~ 24 months. A.4 LD.1

LA.2

~~*An inoperable channel need not be placed in the tripped condition where this would cause the Trip Function to occur.~~

TABLE 3.3.8-1

FEEDWATER/MAIN TURBINE TRIP SYSTEM ACTUATION INSTRUMENTATION

TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM
LCO 3.3.2.2 a. Reactor Vessel Water Level-High, Level 8	4*

A.1

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(Note to Surveillance Requirements

*A channel may be placed in an inoperable status for up to 6 hours for required surveillance testing without placing the Trip System in the tripped condition.

ITS 3.3.2.2

TABLE 3.3.8-2

FEEDWATER/MAIN TURBINE TRIP SYSTEM ACTUATION INSTRUMENTATION SETPOINTS

SR 3.3.2.2.3

TRIP FUNCTION	TRIP SETPOINT		ALLOWABLE VALUE	
a. Reactor Vessel Water Level-High, Level 8	~~< 55.5 inches*~~	LA.1	< 56.0 inches*	A.5
LCO 3.3.2.2			LF.1	

A.1

~~*See Bases Figure B 3/4 3-1.~~ A.5

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ITS 3.3.2.2

TABL. 3.8.1-1

FEEDWATER/MAIN TURBINE TRIP SYSTEM ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	CHANNEL CHECK SR 3.3.2.2.1	CHANNEL FUNCTIONAL TEST SR 3.3.2.2.2	CHANNEL CALIBRATION SR 3.3.2.2.3
LCO 3.3.2.2 a. Reactor Vessel WAter Level-High, Level 8	S	Q	R 24 months LE.1

A.1

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ITS 3.3.2

DISCUSSION OF CHANGES
ITS: 3.3.2.2 - FEEDWATER SYSTEM AND MAIN TURBINE HIGH WATER LEVEL TRIP INSTRUMENTATION

ADMINISTRATIVE

A.1 In the conversion of the LaSalle 1 and 2 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1433, Rev. 1 (i.e., the Improved Standard Technical Specifications (ISTS)).

A.2 This proposed change to the CTS 3.3.8 Actions provides more explicit instructions for proper application of the Actions for Technical Specification compliance. In conjunction with the proposed Specification 1.3, "Completion Times," the ITS 3.3.2.2 ACTIONS Note ("Separate Condition entry is allowed for each...") provides direction consistent with the intent of the existing Actions for an inoperable feedwater system/main turbine high water level instrumentation channel. It is intended that each inoperable channel is allowed a certain time to complete the Required Actions. Since this change only provides more explicit direction of the current interpretation of the existing specifications, this change is considered administrative.

A.3 CTS 3.3.8 Action b.2 requires placing the inoperable channels in trip or restoring the channels to OPERABLE status within the required Completion Time. ITS 3.3.2.2 Required Action A.1 only provides an option to trip the channel. Since restoring the channel is always an option (as described in CTS 3.0.2 and ITS 3.0.2), the modification of this Required Action is administrative.

A.4 CTS 4.3.8.2 requires performance of "simulated automatic operation." Verification of the simulated automatic operation is normally conducted with the system functional test. However, for the Feedwater System and Main Turbine High Water Level Trip Instrumentation, the only automatic operations required are opening the motor-driven feedwater pump breaker or closing the feedwater turbine stop valves, and closing the main turbine stop valves. Since no separate system functional test is specified, the operation of the breaker and valves is specifically identified and included with the LOGIC SYSTEM FUNCTIONAL TEST of proposed SR 3.3.2.2.4. Since this is only a change in the presentation, this change is considered administrative.

A.5 CTS Table 3.3.8-2 Footnote * refers to Bases Figure B 3/4.3-1. This Figure is providing information as to what reactor vessel water level the various reactor water level instruments actuate, in comparison to one another. This information is already essentially contained in the Allowable Value column of this Table. Therefore, this reference is being deleted and is considered administrative.

TECHNICAL CHANGES - MORE RESTRICTIVE

None

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

LA.1 CTS 3.3.8 requires the Trip Setpoints to be set consistent with the values shown in the Trip Setpoint column of Table 3.3.8-2. CTS 3.3.8 Action a requires inoperable channels to be restored to OPERABLE status with trip setpoints adjusted consistent with the Trip Setpoint values. Trip setpoints are operational details that are not directly related to the OPERABILITY of the instrumentation. These details are to be relocated to the Technical Requirements Manual (TRM) and the references to these setpoints in CTS 3.3.8 are deleted. The Allowable Value is the required limitation for the associated Function and this value is retained in the LaSalle 1 and 2 ITS. Therefore, these relocated trip setpoints are not required to be in the ITS to provide adequate protection of the public health and safety. The TRM will be incorporated by reference into the LaSalle 1 and 2 UFSAR at ITS implementation. Changes to the relocated trip setpoints in the TRM will be controlled by the provisions of 10 CFR 50.59.

LA.2 The detail in CTS 3.3.8 Action footnote "*", relating to placing channels in trip, are proposed to be relocated to the Bases. The ACTIONS of ITS 3.3.2.2 ensure inoperable channels are placed in trip or the unit is placed in a non-applicable condition. As a result, this relocated detail is not necessary for ensuring the appropriate actions are taken in the event of inoperable feedwater system and main turbine high water level trip instrumentation channels. As such, these relocated details are not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

LD.1 The Frequency for performing the LOGIC SYSTEM FUNCTIONAL TEST of CTS 4.3.8.2 (proposed SR 3.3.2.2.4) has been extended from 18 months to 24 months. This surveillance ensures the Feedwater System/Main Turbine High Water Level Trip Function will operate properly during the corresponding transients of the UFSAR where this function is required, such as a Feedwater Controller Failure. The proposed change will allow this Surveillance to extend

TECHNICAL CHANGES - LESS RESTRICTIVE

LD.1 (cont'd) the Surveillance Frequency from the current 18 month Surveillance Frequency (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2) to a 24 month Surveillance Frequency (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2). This proposed change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical maintenance and surveillance data have shown that this test normally passes the Surveillance at the current Frequency. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. The Feedwater System/Main Turbine High Water Level trip function is tested on a more frequent basis during the operating cycle in accordance with a CHANNEL CHECK (proposed SR 3.3.2.2.1) and the CHANNEL FUNCTIONAL TEST (proposed SR 3.3.2.2.2). These surveillances will detect significant failures of the circuitry. In addition, since these water level channels provide indication to the control room (Panel H13-P603), deviations will be detected and repaired during plant operation.

Based on the Feedwater System/Main Turbine High Water Level trip circuit design, other surveillances performed during the operating cycle and the ability to detect deviations during operation, and the review of historical and surveillance data, it is shown that the impact, if any, on system availability is minimal as a result of this change. In addition, the proposed 24 month Surveillance Frequency, if performed at the maximum interval allowed by proposed SR 3.0.2 (30 months) does not invalidate any assumptions in the plant licensing basis.

Furthermore, as stated in the NRC Safety Evaluation Report (dated August 2, 1993) relating to extension of the Peach Bottom Atomic Power Station, Unit Numbers 2 and 3 surveillance intervals from 18 to 24 months:

"Industry reliability studies for boiling water reactors (BWRs), prepared by the BWR Owners Group (NEDC-30936P) show that the overall safety systems' reliabilities are not dominated by the reliabilities of the logic system, but by that of the mechanical components, (e.g., pumps and valves), which are consequently tested on a more frequent basis. Since the probability of a relay or contact failure is small relative to the probability of mechanical component failure, increasing the Logic System Functional Test interval represents no significant change in the overall safety system unavailability."

TECHNICAL CHANGES - LESS RESTRICTIVE

LD.1 (cont'd) Based on the above discussion, the impact, if any, of this change on system availability is minimal.

LE.1 The Frequency for performing the CHANNEL CALIBRATION Surveillance of CTS 4.3.8.1 and Table 4.3.8.1-1 Trip Function 1.a (proposed SR 3.3.2.2.3) has been extended from 18 months to 24 months. The proposed change will allow this Surveillance to extend the Surveillance Frequency from the current 18 month Surveillance Frequency (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2) to a 24 month Surveillance Frequency (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2). This proposed change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. The CHANNEL CALIBRATION Surveillance is performed to ensure that at a previously evaluated setpoint actuation takes place to provide the required safety function. Extending the SR Frequency is acceptable because the instrumentation purchased for these functions are highly reliable and meet the design criteria of safety related equipment. The instrumentation is designed with redundant and independent channels which provide means to verify proper instrumentation performance during operation, and adequate redundancy to ensure a high confidence of system performance even with the failure of a single component.

Furthermore, the impacted Feedwater System and Main Turbine High Water Level Trip Instrumentation have been evaluated based on manufacturer and model number to determine that the instrumentation's actual drift falls within the assumed design allowance in the associated setpoint calculation. This function is performed by Rosemount 1151DP4 differential pressure transmitters and Bailey 745 bistable switches. The Rosemount transmitters' and Bailey bistable switches' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Based on the design of the instrumentation and drift evaluations, it is concluded that the impact, if any, on system availability is minimal as a result of the change in the surveillance test interval.

TECHNICAL CHANGES - LESS RESTRICTIVE

LE.1 (cont'd) A review of the surveillance test history was performed to validate the above conclusion. This review of the surveillance test history demonstrates that there are no failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month surveillance frequency. In addition, the proposed 24-month Surveillance Frequencies, if performed at the maximum interval allowed by proposed SR 3.0.2 (30 months) do not invalidate any assumptions in the plant licensing basis.

LF.1 This change revises the Current Technical Specifications (CTS) Allowable Values to the Improved Technical Specifications (ITS) Allowable Values. ITS Section 3.3 reflects Allowable Values consistent with the philosophy of BWR ISTS, NUREG-1434, Rev. 1. These Allowable Values have been established consistent with the methods described in ComEd's Instrument Setpoint Methodology (Nuclear Engineering Standard NES-EIC-20.04, "Analysis of Instrument Channel Setpoint Error and Instrument Loop Accuracy"). For most cases, the Allowable Value determinations were calculated using plant specific operating and surveillance trend data or an allowance as provided for by the Instrument Setpoint Methodology. For all other cases, vendor documented performance specifications for drift were used. The Allowable Value verification used actual plant operating and surveillance trend information to ensure the validity of the developed Allowable Value. All changes to safety analysis limits applied in the methodologies were evaluated and confirmed as ensuring safety analysis licensing acceptance limits are maintained. All design limits applied in the methodologies were confirmed as ensuring that applicable design requirements of the associated systems and equipment are maintained. The methodologies used have been compared with the guidance of ANSI/ISA S67.04-Part I-1994 and ANSI/ISA RP67.04-Part II-1994. Plant calibration procedures will ensure that the assumptions regarding calibration accuracy, measurement and test equipment accuracy, and setting tolerance are maintained. Setpoints for each design or safety analysis limit have been established by accounting for the applicable instrument accuracy, calibration and drift uncertainties, environmental effects, power supply fluctuations, as well as uncertainties related to process and primary element measurement accuracy using the Instrument Setpoint Methodology. The Allowable Values have been established from each design or safety analysis limit by combining the errors associated with channel/instrument calibration (e.g., device accuracy, setting tolerance, and drift) with the calculated Nominal Trip Setpoint also using the Instrument Setpoint Methodology.

TECHNICAL CHANGES - LESS RESTRICTIVE

LF.1 (cont'd) Additionally, each applicable channel/instrument has been evaluated and analyzed to support a fuel cycle extension to a 24 month interval. These evaluations and analyses have been performed utilizing the guidance provided in EPRI TR-103335, "Guidelines for Instrument Calibration Extension/Reduction Programs, Revision 1. The EPRI guidance was used to demonstrate that the data collected by the operating plant (from surveillance testing) has remained acceptable and reasonable with regard to the manufacturers design specifications.

Use of the previously discussed methodologies for determining Allowable Values, instrument setpoints, and analyzing channel/instrument performance ensure that the design basis and associated safety limits will not be exceeded during plant operation. These evaluations, determinations, and analyses now form a portion of the plants design bases.

"Specific"

L.1 CTS 3.3.8 requires the Feedwater System and Main Turbine High Water Level Trip Instrumentation to be OPERABLE in MODE 1. The Feedwater System and Main Turbine High Water Level Trip Instrumentation indirectly supports maintaining MCPR above the Safety Limit; however, MCPR is not a concern below 25% RTP due to the inherent margin that ensures the MCPR Safety Limit is not exceeded, even if a limiting transient occurs. Therefore, the ITS 3.3.2.2 Applicability has been modified to require the instrumentation to be OPERABLE when THERMAL POWER is ≥ 25% RTP, and the current shutdown action specified in CTS 3.3.8 Action c has been changed to only require power to be reduced to < 25% RTP. In addition, the time to achieve this power level has been reduced from 6 hours to 4 hours, which is consistent with the time provided to exit the Applicability in CTS 3.2.3, MCPR, and BWR ISTS, NUREG-1434, Rev. 1, and is within the ability of the plant to achieve this condition in a safe manner.

L.2 CTS 3.3.8 Action c requires reduction in Thermal Power if the Feedwater System/Main Turbine High Water Level Trip Instrumentation is not restored to Operable status. The instrumentation indirectly supports maintaining MCPR above limits during a feedwater controller failure, maximum demand event. This is accomplished by tripping the main turbine, with the main turbine trip resulting in a subsequent reactor scram. When the instrumentation is inoperable

TECHNICAL CHANGES - LESS RESTRICTIVE

L.2 (cont'd) solely due to an inoperable feedwater pump breaker or feedwater turbine stop valve, the unit can continue to operate with the feedwater pump removed from service. Therefore, an additional Required Action is proposed, ITS 3.3.2.2, Required Action C.1, to allow removal of the associated feedwater pump(s) from service in lieu of reducing Thermal Power. This Required Action will only be used if the instrumentation is inoperable solely due to an inoperable feedwater pump breaker or feedwater turbine stop valve, as stated in the Note to ITS 3.3.2.2 Required Action C.1. Since this Required Action accomplishes the functional purpose of the Feedwater System/Main Turbine High Water Level Trip Instrumentation, enables continued operation in a previously approved condition, and still supports maintaining MCPR above limits (since the reactor scram is the result of a turbine trip signal, which is not impacted by this change), this change does not have a significant effect on safe operation.

RELOCATED SPECIFICATIONS

None

ACCIDENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

LCO 3.3.3.1 3.3.7.5 The accident monitoring instrumentation channels shown in Table 3.3.7.5-1 shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1 and 2. L.1

ACTIONS A-F

ACTION: Add proposed ACTIONS Note 1
Add Proposed ACTIONS Note 2 A.2

With one or more accident monitoring instrumentation channels inoperable, take the ACTION required by Table 3.3.7.5-1.

SURVEILLANCE REQUIREMENTS

Note 1 to Surveillance Requirements

4.3.7.5 Each of the above required accident monitoring instrumentation channels shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3.7.5-1.

Add proposed Note 2 to Surveillance Requirements L.2

Table 3.3.3.1-1

TABLE 3.3.7.5-1

ACCIDENT MONITORING INSTRUMENTATION

A.5

	FUNCTION	REQUIRED NUMBER OF CHANNELS	~~MINIMUM CHANNELS OPERABLE~~	ACTION
1.	1. Reactor Vessel Pressure	2	1	80 A,B,C,E
2.	2. Reactor Vessel Water Level a. Fuel Zone b. Wide Range M.3	2	1	80 A,B,C,E
3.	3. Suppression Chamber Water Level	2	1	80 A,B,C,E
9.	4. Suppression Chamber Water Temperature	M.2 2 ~~7~~, 1/well	~~7, 1/well~~	80 A,B,C,E
	~~5. Suppression Chamber Air Temperature~~	~~2~~	~~1~~	~~80~~ R.1
4.	6. Drywell Pressure a. Narrow Range b. Wide Range M.4	2	~~1~~ A.5	80 A,B,C,E
	~~7. Drywell Air Temperature~~	~~2~~	~~1~~	~~80~~ R.1
7.	8. Drywell Oxygen Concentration ~~*~~ LA.1	2	~~1~~ A.5	80 A,B,C,E
8.	9. Drywell Hydrogen Concentration Analyzer ~~*~~ and Monitor	2	~~1~~	82 A,B,C,E
5.	10. Primary Containment Gross Gamma Radiation	2	~~1~~	81 A,B,C,F
	~~11. Safety/Relief Valve Position Indicators~~	~~1/valve~~	~~1/valve~~	~~80~~ R.1
	~~12. Noble Gas Monitor, Main Stack~~	~~1~~	~~1~~	~~81~~
	~~13. Noble Gas Monitor, Standby Gas Treatment System Stack~~	~~1~~	~~1~~	~~81~~

Add proposed Function 6 M.1

~~*Actuated after LOCA.~~ LA.1

A.1

Table 3.3.7.5-1 (Continued)

ACCIDENT MONITORING INSTRUMENTATION
ACTION STATEMENTS

ACTION 80 -

ACTION A a. With the number of OPERABLE accident monitoring instrumentation channels less than the Required Number of Channels shown in Table 3.3.7.5-1, restore the inoperable channel(s) to OPERABLE status within ~~7~~ 30 days ~~or be in at least HOT SHUTDOWN within the next 12 hours.~~ L.3 L.4 Add proposed ACTION B L.4

ACTION C b. With the number of OPERABLE accident monitoring instrumentation channels less than the Minimum Channels OPERABLE requirements of Table 3.3.7.5-1, restore the inoperable channel(s) to OPERABLE status within ~~48 hours~~ 7 days L.3 or be in at least HOT SHUTDOWN within the next 12 hours.

ACTIONS D and E

ACTION 81 -

LA.2 L.5 ~~With the number of OPERABLE channels less than required by the minimum channels OPERABLE requirements, initiate the preplanned alternate method of monitoring the appropriate parameters within 72 hours, and:~~ Insert proposed ACTION A

ACTION C 1) With two required channels inoperable ~~either~~ restore the ~~inoperable~~ one required channel~~s~~ to OPERABLE status within 7 days of the event, or

ACTIONS B, D, and F 2) prepare and submit a Special Report to the Commission pursuant to Specification 6.6.C within 14 days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status. A.3 moved to ITS 5.6

ACTION 82 -

ACTION A a. With the number of OPERABLE channels one less than the required number of channels shown in Table 3.3.7.5-1, restore the inoperable channel to OPERABLE status within 30 days ~~or be in at least HOT SHUTDOWN within the next 12 hours.~~ L.4 Add proposed ACTION B

ACTION C b. With the number of OPERABLE channels less than the minimum channels OPERABLE requirements of Table 3.3.7.5-1, restore at least one channel to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours.

ACTIONS D and E

Table 3.3.3.1-1

TABLE 4.3.7.5-1

ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

	FUNCTION INSTRUMENT	SR 3.3.3.1.1 CHANNEL CHECK	SR 3.3.3.1.2, SR 3.3.3.1.3 CHANNEL CALIBRATION	
1.	1. Reactor Vessel Pressure	M	3-~~R~~	24 months LE.1 LD.1
2.	2. Reactor Vessel Water Level	M	3-~~R~~	24 months LE.1 LD.1
3.	3. Suppression Chamber Water Level	M	3-~~R~~	24 months LE.1 LD.1
9.	4. Suppression Chamber Water Temperature	M	3-~~R~~	24 months LE.1 LD.1
	~~5. Suppression Chamber Air Temperature~~	~~M~~	~~R~~	R.1
4.	6. Primary Containment Pressure	M	3-R	24 months LE.1 LD.1
	~~7. Drywell Air Temperature~~	~~M~~	~~R~~	R.1
7.	8. Drywell Oxygen Concentration	M	2-R	Q M.5
8.	9. Drywell Hydrogen Concentration Analyzer and Monitor	M	2-Q	
5.	10. Primary Containment Gross Gamma Radiation	M	3-R	24 months LE.1 LD.1
	~~11. Safety/Relief Valve Position Indicators~~	~~M~~	~~R~~	R.1
	~~12. Noble Gas Monitor, Main Stack~~	~~M~~	~~R~~	R.1
	~~13. Noble Gas Monitor, Standby Gas Treatment System Stack~~	~~M~~	~~R~~	R.1

A.1

Add proposed Function 6 M.1

REACTOR COOLANT SYSTEM

A.1

3/4.4.2 SAFETY/RELIEF VALVES

LIMITING CONDITION FOR OPERATION

3.4.2 The safety valve function of 17 of the below listed 18 reactor coolant system safety/relief valves shall be OPERABLE with the specified code safety valve function lift setting*#; all installed valves shall be closed ~~with OPERABLE position indication~~. R.1

a. 4 safety/relief valves @1205 psig ±3%
b. 4 safety/relief valves @1195 psig ±3%
c. 4 safety/relief valves @1185 psig ±3%
d. 4 safety/relief valves @1175 psig ±3%
e. 2 safety/relief valves @1150 psig ±3%

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

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

b. ~~With one or more of the above required safety/relief valve stem position indicators inoperable, restore the inoperable stem position indicators 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.~~

SURVEILLANCE REQUIREMENTS R.1

~~4.4.2.1 The safety/relief valve stem position indicators of each safety/relief valve shall be demonstrated OPERABLE by performance of a:~~

~~a. CHANNEL CHECK at least once per 31 days, and a~~
~~b. CHANNEL CALIBRATION at least once per 18 months.**~~

4.4.2.2 The low-low set function shall be demonstrated not to interfere with the OPERABILITY of the safety/relief valves or the ADS by performance of a CHANNEL CALIBRATION at least once per 18 months.

*The lift setting pressure shall correspond to ambient conditions of the valves at nominal operating temperatures and pressures. Following testing, lift settings shall be within ±1%.
#Up to two inoperable valves may be replaced with spare OPERABLE valves with lower setpoints until the next refueling outage.
~~**The provisions of Specification 4.0.4 are not applicable provided the surveillance is performed within 12 hours after reactor steam pressure is adequate to perform the test.~~ R.1

<See ITS 3.4.4>

INSTRUMENTATION

ACCIDENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

LCO 3.3.3.1

3.3.7.5 The accident monitoring instrumentation channels shown in Table 3.3.7.5-1 shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1 and 2.

ACTION:

Add proposed ACTIONS NOTE 1 L.1

Add proposed ACTIONS NOTE 2 A.2

ACTIONS A - F

a. With one or more accident monitoring instrumentation channels inoperable, take the ACTION required by Table 3.3.7.5-1.

SURVEILLANCE REQUIREMENTS

Note 1 to Surveillance Requirements

4.3.7.5 Each of the above required accident monitoring instrumentation channels shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3.7.5-1.

Add proposed Note 2 to Surveillance Requirements L.2

TABLE 3.3.3.1-1 **TABLE 3.3.7.5-1**

ACCIDENT MONITORING INSTRUMENTATION

A.5

FUNCTION		REQUIRED NUMBER OF CHANNELS	~~MINIMUM CHANNELS OPERABLE~~	ACTION	
1. 1. Reactor Vessel Pressure		2	~~1~~	80 A,B,C,E	A.1
2. 2. Reactor Vessel Water Level (a. Fuel Zone b. Wide Range)	M.3	2	~~1~~	80 A,B,C,E	
3. 3. Suppression Chamber Water Level		2	~~1~~	80 A,B,C,E	
9. 4. Suppression Chamber Water Temperature	M.2	2 ~~7, 1/well~~	~~7, 1/well~~	80 A,B,C,E	
~~5. Suppression Chamber Air Temperature~~		~~2~~	~~1~~	~~80~~	R.1
4. 6. Drywell Pressure (a. Narrow Range b. Wide Range)	M.4	2	~~1~~	80 A,B,C,E	A.5
~~7. Drywell Air Temperature~~		~~2~~	~~1~~	~~80~~	R.1
7. 8. Drywell Oxygen Concentration*	LA.1	2	~~1~~	80 A,B,C,E	A.5
8. 9. Drywell Hydrogen Concentration Analyzer* and Monitor		2	~~1~~	82 A,B,C,E	
5. 10. Primary Containment Gross Gamma Radiation		2	~~1~~	81 A,B,C,F	
~~11. Safety/Relief Valve Position Indicators~~		~~1/valve~~	~~1/valve~~	~~80~~	R.1
~~12. Noble Gas Monitor, Main Stack~~		~~1~~	~~1~~	~~81~~	
~~13. Noble Gas Monitor, Standby Gas Treatment System Stack~~		~~1~~	~~1~~	~~81~~	

~~*Actuated after LOCA.~~ LA.1

Add proposed Function 6 M.1

Table 3.3.7.5-1 (Continued)

ACCIDENT MONITORING INSTRUMENTATION
ACTION STATEMENTS

ACTION 80 -

ACTION A a. With the number of OPERABLE accident monitoring instrumentation channels less than the Required Number of Channels shown in Table 3.3.7.5-1, restore the inoperable channel(s) to OPERABLE status within ~~7~~ 30 days ~~or be in at least HOT SHUTDOWN within the next 12 hours.~~ L.3 L.4

add proposed ACTION B L.4

ACTION C b. With the number of OPERABLE accident monitoring instrumentation channels less than the Minimum Channels OPERABLE requirements of Table 3.3.7.5-1, restore the inoperable channel(s) to OPERABLE status within ~~48 hours~~ 7 days or be in at least HOT SHUTDOWN within the next 12 hours. L.3

ACTIONS D and E

ACTION 81 -

~~With the number of OPERABLE channels less than the required by the minimum channels OPERABLE requirements, initiate the preplanned alternate method of monitoring the appropriate parameter(s) within 72 hours~~, and: LA.2 L.5

(with two required channels inoperable)

ACTION C 1) ~~either~~ restore the ~~inoperable~~ one required channel~~(s)~~ to OPERABLE status within 7 days of the event, or

Insert proposed ACTION A

ACTIONS B, D, and F 2) prepare and submit a Special Report to the Commission pursuant to Specification 6.6.c within 14 days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.

A.3 moved to ITS 5.6

ACTION 82 -

ACTION A a. With the number of OPERABLE channels one less than the required number of channels shown in Table 3.3.7.5-1, restore the inoperable channel to OPERABLE status within 30 days ~~or be in at least HOT SHUTDOWN within the next 12 hours.~~ L.4

Add proposed ACTION B

ACTION C b. With the number of OPERABLE channels less then the minimum channels OPERABLE requirements of Table 3.3.7.5-1, restore at least one channel to OPERABLE status within 7 days ~~or be in at least HOT SHUTDOWN within the next 12 hours.~~

ACTIONS D and E

Table 3.3.3.1-1

TABLE 4.3.7.5-1

ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Function	INSTRUMENT	SR 3.3.3.1.1 CHANNEL CHECK	SR 3.3.3.1.2, SR 3.3.3.1.3 CHANNEL CALIBRATION	
1.	1. Reactor Vessel Pressure	M	3-~~R~~	24 months LE.1 LD.1
2.	2. Reactor Vessel Water Level	M	3-~~R~~	
3.	3. Suppression Chamber Water Level	M	3-~~R~~	
9.	4. Suppression Chamber Water Temperature	M	3-~~R~~	
	~~5. Suppression Chamber Air Temperature~~	~~M~~	~~R~~	R.1
4.	6. Primary Containment Pressure	M	3-R	
	~~7. Drywell Air Temperature~~	~~M~~	~~R~~	R.1
7.	8. Drywell Oxygen Concentration	M	2-~~R~~ Q	M.5
8.	9. Drywell Hydrogen Concentration Analyzer and Monitor	M	2-Q	
5.	10. Primary Containment Gross Gamma Radiation	M	3-~~R~~	24 months LE.1 LD.1
	~~11. Safety/Relief Valve Position Indicators~~	~~M~~	~~R~~	R.1
	~~12. Noble Gas Monitor, Main Stack~~	~~M~~	~~R~~	
	~~13. Noble Gas Monitor, Standby Gas Treatment System Stack~~	~~M~~	~~R~~	

A.1

Add proposed FUNCTION 6 M.1

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ITS 3.3.3.1

ITS 3.3.3.1

REACTOR COOLANT SYSTEM

A.1

3/4.4.2 SAFETY/RELIEF VALVES

LIMITING CONDITION FOR OPERATION

3.4.2 The safety valve function of 12 of the below listed 13 reactor coolant system safety/relief valves shall be OPERABLE with the specified code safety valve function lift setting*#; all installed valves shall be closed ~~with OPERABLE position indication~~.

R.1

a. 2 safety/relief valves @1205 psig ±3%
b. 3 safety/relief valves @1195 psig ±3%
c. 2 safety/relief valves @1185 psig ±3%
d. 4 safety/relief valves @1175 psig ±3%
e. 2 safety/relief valves @1150 psig ±3%

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

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

b. ~~With one or more of the above required safety/relief valve stem position indicators inoperable, restore the inoperable stem position indicators 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.~~

SURVEILLANCE REQUIREMENTS

R.1

~~4.4.2.1 The safety/relief valve stem position indicators of each safety/relief valve shall be demonstrated OPERABLE by performance of a:~~

~~a. CHANNEL CHECK at least once per 31 days, and a~~
~~b. CHANNEL CALIBRATION at least once per 18 months.**~~

4.4.2.2 The low low set function shall be demonstrated not to interfere with the OPERABILITY of the safety/relief valves or the ADS by performance of a CHANNEL CALIBRATION at least once per 18 months.

*The lift setting pressure shall correspond to ambient conditions of the valves at nominal operating temperatures and pressures. Following testing, lift settings shall be within ±1%.
#Up to two inoperable valves may be replaced with spare OPERABLE valves with lower setpoints until the next refueling outage.
~~**The provisions of Specification 4.0.4 are not applicable provided the surveillance is performed within 12 hours after reactor steam pressure is adequate to perform the test.~~

R.1

<See ITS 3.4.4>

ADMINISTRATIVE

A.1 In the conversion of the LaSalle 1 and 2 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1434, Rev. 1 (i.e., the Improved Standard Technical Specifications (ISTS)).

A.2 This proposed change to the CTS 3.3.7.5 Action provides more explicit instructions for proper application of the Actions for Technical Specification compliance. In conjunction with the proposed Specification 1.3, "Completion Times," the ITS 3.3.3.1 ACTIONS Note ("Separate Condition entry is allowed for each....") and the wording for ITS 3.3.3.1 ACTIONS A and C ("one or more Functions with...") provides direction consistent with the intent of the existing Action for an inoperable accident monitoring instrumentation channel. It is intended that each Function is allowed certain times to complete the Required Actions. Since this change only provides more explicit direction of the current interpretation of the existing specifications, this change is considered administrative.

A.3 The details concerning the technical content of the Special Report specified in CTS 3.3.7.5 Action 81.2) are being moved to ITS 5.6.6 in accordance with the format of the BWR ISTS, NUREG-1434, Rev. 1. Any technical changes to this requirement are addressed in the Discussion of Changes for ITS: 5.6.

A.4 Not used.

A.5 The MINIMUM CHANNELS OPERABLE column of CTS Table 3.3.7.5.-1 provides information to determine what part of CTS Table 3.3.7.5-1 Actions 80 and 82 to take. Not meeting the minimum channels OPERABLE of CTS Table 3.3.7.5-1 means two channels are inoperable. ITS 3.3.3.1 provides explicit Conditions for the number of inoperable channels and therefore, this column is not necessary. This change represents a presentation preference only and is, therefore, considered administrative.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 CTS 3/4.3.7.5 is revised to incorporate requirements for an additional PAM Instrumentation Function for Penetration Flow Path Primary Containment Isolation Valve (PCIV) Position (ITS Table 3.3.3.1-1, Function 6). This Function is included in accordance with NUREG-1434 guidelines to include all Regulatory Guide 1.97 Category 1 instruments. Penetration Flow Path PCIV Position is a Category 1 instrument for LaSalle 1 and 2. This change represents an additional restriction on plant operation.

M.2 In CTS Table 3.3.7.5-1, the required number of channels is stated as 7 (1 per well) for the Suppression Chamber Water Temperature Function. In proposed Function 9 of ITS Table 3.3.3.1-1, the required number of channels has been changed to "2." The Bases for ITS Table 3.3.3.1-1 Function 9, "Suppression Chamber Water Temperature," states there are 2 channels of suppression chamber water temperature measurement, each receiving input from 7 temperature sensors, for a total of 14 required temperature sensors. These sensors are distributed throughout the pool area so as to be able to redundantly detect a stuck open safety/relief valve continuous discharge to the pool. This ensures that if one channel is inoperable, another channel will be OPERABLE to provide an alternate means of monitoring the safety/relief valve discharge. This is an additional restriction on plant operation.

M.3 The Reactor Vessel Water Level instrumentation in CTS Table 3.3.7.5-1 consists of instruments with different ranges to satisfy Regulatory Guide 1.97 requirements. The different ranges are: “wide range” covering -150 inches to +60 inches; and “fuel zone” covering -311 inches to +111 inches. Currently, CTS Table 3.3.7.5-1 only specifies requirements for two channels but does not specify the required ranges. Using the ITS format, the instruments required to cover these ranges are delineated in ITS Table 3.3.3.1-1 as separate line items under Function 2, with each channel consisting of only one instrument. Therefore, ITS Table 3.3.3.1-1 Function 2.a (Reactor Vessel Water Level - Fuel Zone) and Function 2.b (Reactor Vessel Water Level - Wide Range) will each specify requirements for two channels (for a total of 4 channels). Therefore, this change represents an additional restriction on plant operation.

TECHNICAL CHANGES - MORE RESTRICTIVE (continued)

M.4 The Drywell Pressure instrumentation in CTS Table 3.3.7.5-1 specifies requirements for two channels but does not specify the required range. To actually achieve the Regulatory Guide 1.97 required range, two instruments are necessary in each channel - one "narrow range" covering -5 psig to +5 psig; and one "wide range" covering 0 psig to +200 psig. Using the ITS format, the instruments required to cover these ranges are specifically delineated in ITS Table 3.3.3.1-1 as separate line items under Function 4, with each channel consisting of one instrument. Therefore, ITS Table 3.3.3.1-1 Function 4.a (Drywell Pressure - Narrow Range) and Function 4.b (Drywell Pressure - Wide Range) will each specify requirements for two channels (for a total of 4 channels). Therefore, this change represents an additional restriction on plant operation.

M.5 CTS Surveillance Requirement 4.3.7.5 requires CHANNEL CALIBRATION of the Drywell Oxygen Concentration Analyzer and Monitor on a refueling basis (Table 4.3.7.5-1, Instrument 8), and CHANNEL CALIBRATION of the Drywell Hydrogen Concentration Analyzer and Monitor on a quarterly basis (Table 4.3.7.5-1, Instrument 9). Under proposed ITS SR 3.3.3.1.2, the CHANNEL CALIBRATION frequency for the Drywell Oxygen Concentration Analyzer and Monitor is revised from 18 months to 92 days. The purpose of this change is to maintain surveillance testing of the Drywell Oxygen Concentration Analyzer and Monitor and Drywell Hydrogen Concentration Analyzer and Monitor on the same testing schedule for operational convenience, as is the current practice. This change represents an additional restriction on plant operation.

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

LA.1 The CTS Table 3.3.7.5-1 footnote "*" details relating to operation of the drywell hydrogen and oxygen analyzers are to be relocated to the Bases. These details of operation are procedural details that are not necessary to be included in the Technical Specifications to ensure the OPERABILITY of the drywell hydrogen and oxygen analyzers. OPERABILITY requirements are adequately addressed in the requirements of ITS 3.3.3.1. As a result, the relocated details are not required to be included in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the Technical Specifications.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

LA.2 The use of alternate methods of monitoring in CTS Table 3.3.7.5-1 ACTION 81 are to be relocated to the Bases. These details are not necessary to be included in Technical Specifications to ensure actions are taken to initiate the preplanned alternate method of monitoring since ITS 3.3.3.1 Condition F requires action to be immediately initiated in accordance with ITS 5.6.6. ITS 5.6.6 requires a report to be submitted to the NRC within the following 14 days and that the report outline the preplanned alternate method of monitoring. As such, the relocated details are not required to be in Technical Specifications to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the Technical Specifications.

LD.1 The Frequency for performing the CHANNEL FUNCTIONAL TEST portion of the CHANNEL CALIBRATION Surveillance of CTS Table 4.3.7.5-1 (proposed SR 3.3.3.1.2) for all CTS Functions retained in the ITS, except for CTS Instruments 8 and 9, has been extended from 18 months to 24 months. The proposed change will allow this Surveillance to extend its Surveillance Frequency from the current 18 month Surveillance Frequency (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2) to a 24 month Surveillance Frequency (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2). This proposed change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical maintenance and surveillance data have shown that this test normally passes its Surveillance at the current Frequency. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. Extending the Surveillance Test interval is acceptable since the PAM Instrumentation Channels are designed to be single failure proof and because the PAM Instrumentation is verified to be operating properly throughout the operating cycle by the performance of CHANNEL CHECKS. This testing ensures that a significant portion of the PAM circuitry is operating properly and will detect significant failures of this circuitry. Based on the inherent system and component reliability and the testing performed during the operating cycle, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 24 month Surveillance Frequency, if performed at the maximum interval allowed by proposed SR 3.0.2 (30 months) does not invalidate any assumptions in the plant licensing basis.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

LE.1 The Frequency for performing the CHANNEL CALIBRATION Surveillances of CTS 4.3.7.5 (proposed SR 3.3.3.1.2) and Table 4.3.7.5-1 for all Post Accident Monitoring Instrumentation Functions retained in the ITS except for Instruments 8 and 9 (ITS Table 3.3.3.1-1 Functions 7 and 8) has been extended to 24 months. The proposed change will allow this Surveillance to extend the Surveillance Frequency to a 24 month Surveillance Frequency (i.e., a maximum of 30 months accounting for the allowable grace period specified in proposed SR 3.0.2). The CHANNEL CALIBRATION Surveillance is performed to ensure that the indication is accurate to provide the required safety function. Extending the SR Frequency is acceptable because the PAM instruments are designed to be single failure proof and highly reliable.

Furthermore, the impacted PAM instrumentation has been evaluated based on make, manufacturer and model number to determine that the instrumentation's actual drift falls within acceptable allowances as determined by quantitative or qualitative analysis. The following paragraphs, listed by CTS Instrument number, identify by make, manufacturer and model number the drift evaluations performed:

Instrument 1, Reactor Vessel Pressure (currently 18 months)

This function is performed by Rosemount 1153GB9 Transmitters and Yokogawa 4152-550-32 Recorders. The Yokogawa Recorders were evaluated utilizing a qualitative analysis (i.e., engineering judgment). Furthermore, the Rosemount transmitters will be evaluated (by qualitative analysis) to verify that drift for normal operating conditions is consistent with similar plant instruments used for protective functions. For operation in a harsh environment, drift is an insignificant contributor to overall loop accuracy and is not considered as an impact to proper operation. Changes will be made, as necessary, to equipment or procedures to ensure proper operation for a 24 month fuel cycle surveillance interval.

Instrument 2, Reactor Vessel Water Level (currently 18 months)

Narrow Range:
This function is performed by Rosemount 1153DB5 Transmitters, GE Type 180 Indicators, Yokogawa 4152-550-32 Recorders, Westinghouse VX-252 indicators and Rochester SC 1302-323-1 signal converter for computer input. The GE and Westinghouse Indicators, Yokogawa recorders and Rochester signal converter were evaluated utilizing a qualitative analysis (i.e., engineering judgment). Furthermore, the Rosemount transmitters will be evaluated (by qualitative

TECHNICAL CHANGES - LESS RESTRICTIVE

LE.1 (cont'd)

analysis) to verify that drift for normal operating conditions is consistent with similar plant instruments used for protective functions. For operation in a harsh environment, drift is an insignificant contributor to overall loop accuracy and is not considered as an impact to proper operation. Changes will be made, as necessary, to equipment or procedures to ensure proper operation for a 24 month fuel cycle surveillance interval.

Wide Range:
This function is performed by Rosemount 1153DB5 Transmitters, GE Type 180 Indicators, and Yokogawa 4152-550-32 Recorders. The GE indicators and Yokogawa recorders were evaluated utilizing a qualitative analysis (i.e., engineering judgment). Furthermore, the Rosemount transmitters will be evaluated (by qualitative analysis) to verify that drift for normal operating conditions is consistent with similar plant instruments used for protective functions. For operation in a harsh environment, drift is an insignificant contributor to overall loop accuracy and is not considered as an impact to proper operation. Changes will be made, as necessary, to equipment or procedures to ensure proper operation for a 24 month fuel cycle surveillance interval.

Instrument 3, Suppression Chamber Water Level (currently 18 months)

This function is performed by Rosemount 1153DB5, 1153DB3, 1152DP3 Transmitters, GE Type 180 Indicators, Westinghouse VX-252 indicators, Love Controls 56 alarm units and Yokogawa 4152-550-32 recorders. The GE and Westinghouse indicators, Yokogawa recorders and Love Controls alarm units were evaluated utilizing a qualitative analysis (i.e., engineering judgment). Furthermore, the Rosemount transmitters will be evaluated (by qualitative analysis) to verify that drift for normal operating conditions is consistent with similar plant instruments used for protective functions. For operation in a harsh environment, drift is an insignificant contributor to overall loop accuracy and is not considered as an impact to proper operation. Changes will be made, as necessary, to equipment or procedures to ensure proper operation for a 24 month fuel cycle surveillance interval.

Instrument 4, Suppression Chamber Water Temperature (currently 18 months)

This function is performed by Weed 611-1AD RTD temperature elements, GE NUMAC 304A3716G001 processors, and Yokogawa 4152-550-32 recorders. The Weed RTDs are non calibratable devices. The Weed RTDs, GE NUMAC processor and the Yokogawa recorders were evaluated utilizing a qualitative analysis (i.e., engineering judgment). The results of the evaluations support a 24 month fuel cycle surveillance interval extension.

TECHNICAL CHANGES - LESS RESTRICTIVE

LE.1 (cont'd)

Instrument 6, Drywell Pressure (currently 18 months)

Wide Range:
This function is performed by Rosemount 1153GB7, 1153GD7 Transmitters, Westinghouse VX-252 Indicators, and Yokogawa 4152-550-32 Recorders. The Westinghouse indicators and the Yokogawa recorders were evaluated utilizing a qualitative analysis (i.e., engineering judgment). Furthermore, the Rosemount transmitters will be evaluated (by qualitative analysis) to verify that drift for normal operating conditions is consistent with similar plant instruments used for protective functions. For operation in a harsh environment, drift is an insignificant contributor to overall loop accuracy and is not considered as an impact to proper operation. Changes will be made, as necessary, to equipment or procedures to ensure proper operation for a 24 month fuel cycle surveillance interval.

Narrow Range:
This function is performed by Rosemount 1153DB5, 1152GP5 Transmitters, General Electric 180 Indicators, and Yokogawa 4152-550-32 Recorders. The General Electric indicators and the Yokogawa recorders were evaluated utilizing a qualitative analysis (i.e., engineering judgment). Furthermore, the Rosemount transmitters will be evaluated (by qualitative analysis) to verify that drift for normal operating conditions is consistent with similar plant instruments used for protective functions. For operation in a harsh environment, drift is an insignificant contributor to overall loop accuracy and is not considered as an impact to proper operation. Changes will be made, as necessary, to equipment or procedures to ensure proper operation for a 24 month fuel cycle surveillance interval.

Instrument 10, Primary Containment Gross Gamma Radiation (currently 18 months)

This function is performed by scintillation detectors, General Atomic RP-2C radiation monitors, and Yokogawa 4152-550-32 recorders. The detectors, General Atomic radiation monitors and the Yokogawa recorders were evaluated utilizing a qualitative analysis (i.e., engineering judgment). The results of this analysis support a 24 month fuel cycle surveillance interval extension.

A review of the surveillance test history was performed to validate the above conclusions. This review of the surveillance test history demonstrates that there are no failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month surveillance

TECHNICAL CHANGES - LESS RESTRICTIVE

LE.1 (cont'd) frequency. In addition, the proposed 24-month Surveillance Frequencies, if performed at the maximum interval allowed by proposed SR 3.0.2 (30 months) do not invalidate any assumptions in the plant licensing basis.

"Specific"

L.1 CTS 3.0.4 currently precludes a change in MODE with an accident monitoring instrumentation channel inoperable. A statement that LCO 3.0.4 is not applicable has been added as a NOTE to the ITS 3.3.3.1 ACTIONS. This Note allows entry into the applicable MODE while relying on the ACTIONS even though the ACTION may require plant shutdown. Accident monitoring instrumentation does not impact normal operation of the plant and would not provide additional initiators for plant transients during MODE changes. This exception is acceptable due to the passive function of the instrumentation, operator ability to use alternative instrumentation and methods, and the low probability of an event occurring that would require the instruments.

L.2 A Note has been added to CTS 4.3.7.5 (ITS 3.3.3.1 Note 2 to the Surveillance Requirements) to allow a channel to be inoperable for up to 6 hours solely for performance of required Surveillances provided the other channel in the associated Function is OPERABLE. The 6 hour testing allowance has been granted by the NRC in TS amendments for Hatch Unit 1 (amendment 185) and Unit 2 (amendment 125), WNP-2 (amendment 149, the ITS amendment), and Nine Mile Point Unit 2 (amendment 91, the ITS amendment). The NRC has also granted this allowance in other topical reports for the Reactor Protection System, Emergency Core Cooling System, and isolation equipment. The 6 hour testing allowance does not significantly reduce the probability of properly monitoring post-accident parameters, when necessary, since the other channel must be OPERABLE for this allowance to be used.

L.3 In the event the number of OPERABLE channels is one less than the required number of channels shown in CTS Table 3.3.7.5-1, ACTION 80a requires the inoperable channels to be restored within 7 days. In the event the number of OPERABLE channels is less than the Minimum Channels OPERABLE requirement of CTS Table 3.3.7.5-1, ACTION 80b requires the inoperable channels to be restored within 48 hours. In ITS 3.3.3.1 ACTIONS A and C, these Completion Times have been changed to 30 days and 7 days, respectively. This is acceptable due to the passive function of the instrumentation, the operator's ability to respond to the accident utilizing alternative instrumentation and methods, and the low probability of an event occurring that would require

TECHNICAL CHANGES - LESS RESTRICTIVE

L.3 (cont'd) the instruments. Additionally, for most functions two channels are provided to monitor the function; thus, when only one channel is inoperable, the redundant channel remains capable of monitoring the function.

L.4 CTS Table 3.3.7.5-1 ACTIONS 80a and 82a, for one channel inoperable in one or more Functions for more than the allowed outage time is revised from requiring a shutdown to requiring a Special Report (ITS 3.3.3.1 Required Action B.1) in accordance with the Administrative Control section of the Technical Specifications. Due to the passive function of these instruments and the operator's ability to respond to an accident utilizing alternate instruments and methods for monitoring, it is not appropriate to impose stringent shutdown requirements for out of service instrumentation. The change is considered acceptable since another OPERABLE channel is monitoring the Function and the probability of an event, requiring the operator to utilize this instrumentation to respond to the event, is low. This change is consistent with the BWR ISTS, NUREG-1434, Rev. 1.

L.5 CTS Table 3.3.7.5-1 ACTION 81 is changed for one or two primary containment gross gamma radiation monitors inoperable. With one monitor inoperable, ITS 3.3.3.1 Required Action A.1 provides 30 days for the restoration of the monitor prior to initiating the alternate method of monitoring. With two monitors inoperable, ITS 3.3.3.1 Required Action C.1 provides 7 days for restoration of one monitor prior to initiating the alternate method of monitoring. With one or two monitors inoperable CTS Table 3.3.7.5-1 ACTION 81 requires initiation of the alternate method of monitoring within 72 hours and restoration of both channels to OPERABLE status within 7 days. The Completion Times (30 days when one monitor is inoperable or 7 days when two monitors are inoperable) for restoration of one channel or initiation of the alternate method of monitoring is considered acceptable based on the relatively low probability of an event requiring PAM instrumentation, the passive function of the instruments, the availability of the redundant monitor (for the condition of one monitor inoperable), and the availability of alternate means to obtain the information.

RELOCATED SPECIFICATIONS

R.1 Suppression Chamber Air Temperature, Drywell Air Temperature, Safety/Relief Valve Position Indicators, Noble Gas Monitor-Main Stack, and Noble Gas Monitor-Standby Gas Treatment System Stack (CTS Tables 3.3.7.5-1 and 4.3.7.5-1, Instruments 5, 7, 11, 12, and 13, and CTS 3/4.4.2) are not credited as Category 1 or Type A variables. Further, the loss of this instrumentation is a non-significant risk contributor to core damage frequency and offsite release. Therefore, the requirements specified for these Functions did not satisfy the NRC Policy Statement Technical Specification screening criteria as documented in the Application of Selection Criteria to the LaSalle 1 and 2 Technical Specifications and have been relocated to the Technical Requirements Manual (TRM). The TRM will be incorporated by reference into the LaSalle 1 and 2 UFSAR at ITS implementation. Changes to the TRM will be controlled in accordance with 10 CFR 50.59.

INSTRUMENTATION A.1

REMOTE SHUTDOWN MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

LCO 3.3.3.2 3.3.7.4 The remote shutdown monitoring instrumentation channels ~~shown in Table 3.3.7.4-1~~ shall be OPERABLE ~~with readouts displayed in the remote shutdown panel external to the control room.~~ LA.1

APPLICABILITY: OPERATIONAL CONDITIONS 1 and 2.

ACTION: Add proposed ACTIONS Note 2 A.2

ACTION A a. With the number of OPERABLE remote shutdown monitoring instrumentation channels less than required ~~by Table 3.3.7.4-1~~, LA.1 restore the inoperable

ACTION B channel(s) to OPERABLE status within ~~7~~ 30 L.1 days or be in at least HOT SHUTDOWN within the next 12 hours.

NOTE 1 to ACTIONS b. The provisions of Specification 3.0.4 are not applicable.

L.2 Add proposed Note to Surveillance Requirements

L.3 for each required instrumentation channel that is normally energized

SURVEILLANCE REQUIREMENTS

SR 3.3.3.2.1 4.3.7.4 Each of the above required remote shutdown monitoring instrumentation channels shall be demonstrated OPERABLE by performance of the CHANNEL CHECK

SR 3.3.3.2.2 and CHANNEL CALIBRATION operations at the frequencies ~~shown in Table 4.3.7.4-1~~. LA.1

TABLE 3.3.7.4-1

REMOTE SHUTDOWN MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM INSTRUMENTS OPERABLE
1. Reactor Vessel Pressure	1
2. Reactor Vessel Water Level	1
3. RHR Flow	1
4. RHR Service Water Flow	1
5. RHR Service Water Temperature	1
6. RCIC Flow	1
7. RCIC Turbine Speed	1
8. Suppression Pool Water Level	1
9. Suppression Pool Water Temperature	1

LA.1

A.1

TABLE 4.3.7.4-1

REMOTE SHUTDOWN MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

LA.1

INSTRUMENT	SR 3.3.3.2.1 CHANNEL CHECK	SR 3.3.3.2.2 CHANNEL CALIBRATION
1. Reactor Vessel Pressure	M	R
2. Reactor Vessel Water Level	M	R
3. RHR Flow	M	R
4. RHR Service Water Flow	M	R
5. RHR Service Water Temperature	M	R
6. RCIC Flow	M	R
7. RCIC Turbine Speed	M	R
8. Suppression Pool Water Level	M	R
9. Suppression Pool Water Temperature	M	R

L.3

24 months

LD.1

LE.1

A.1

ITS 3.3.3.2

INSTRUMENTATION

REMOTE SHUTDOWN MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

LCO 3.3.3.2 3.3.7.4 The remote shutdown monitoring instrumentation channels ~~shown in Table 3.3.7.4-1~~ shall be OPERABLE ~~with readouts displayed in the remote shutdown panel external to the control room.~~ LA.1

APPLICABILITY: OPERATIONAL CONDITIONS 1 and 2.

ACTION: Add proposed ACTIONS Note 2 A.2

LA.1

Action A a. With the number of OPERABLE ~~remote shutdown~~ monitoring instrumentation channels less than required ~~by Table 3.3.7.4-1~~, restore the inoperable channel(s) to OPERABLE status within ~~7~~ 30 days or be in at least HOT
Action B SHUTDOWN within the next 12 hours. L.1

Note 1 to Actions b. The provisions of Specification 3.0.4 are not applicable. L.3

L.2

Add Proposed Note to Surveillance Requirements

for each required instrumentation channel that is normally energized

SURVEILLANCE REQUIREMENTS

SR 3.3.3.2.1 4.3.7.4 Each of the above required remote shutdown monitoring instrumentation channels shall be demonstrated OPERABLE by performance of the CHANNEL CHECK
SR 3.3.3.2.2 and CHANNEL CALIBRATION operations at the frequencies ~~shown in Table 4.3.7.4-1~~.

LA.1

TABLE 3.3.7.4-1

REMOTE SHUTDOWN MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM INSTRUMENTS OPERABLE
1. Reactor Vessel Pressure	1
2. Reactor Vessel Water Level	1
3. RHR Flow	1
4. RHR Service Water Flow	1
5. RHR Service Water Temperature	1
6. RCIC Flow	1
7. RCIC Turbine Speed	1
8. Suppression Pool Water Level	1
9. Suppression Pool Water Temperature	1

LA.1

LA.1

A.1

TABLE 4.3.7.4-1

REMOTE SHUTDOWN MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	SR 3.3.3.2.1 CHANNEL CHECK	SR 3.3.3.2.2 CHANNEL CALIBRATION
1. Reactor Vessel Pressure	M	R
2. Reactor Vessel Water Level	M	R
3. RHR Flow	M	R
4. RHR Service Water Flow	M	R
5. RHR Service Water Temperature	M	R
6. RCIC Flow	M	R
7. RCIC Turbine Speed	M	R
8. Suppression Pool Water Level	M	R
9. Suppression Pool Water Temperature	M	R

L.3

24 months

LE.1

LD.1

ADMINISTRATIVE

A.1 In the conversion of the LaSalle 1 and 2 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1434, Rev. 1 (i.e., the Improved Standard Technical Specifications (ISTS)).

A.2 This proposed change to the CTS 3.3.7.4 Actions provides more explicit instructions for proper application of the Actions for Technical Specification compliance. In conjunction with the proposed Specification 1.3, "Completion Times," the ITS 3.3.3.2 ACTIONS Note ("Separate Condition entry is allowed for each....") and the wording for ITS 3.3.3.2 ACTION A ("one or more required Functions") provides direction consistent with the intent of the existing Actions for an inoperable remote shutdown instrumentation channel. It is intended that each function is allowed a certain time to complete the Required Actions. Since this change only provides more explicit direction of the current interpretation of the existing specifications, this change is considered administrative.

TECHNICAL CHANGES - MORE RESTRICTIVE

None

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

LA.1 The CTS 3.3.7.4, CTS 3.3.7.4 Action a, CTS 4.3.7.4, CTS Table 3.3.7.4-1, and CTS Table 4.3.7.4-1 details relating to system design and operation (i.e., the specific instrument listings) are unnecessary in the LCO and are proposed to be relocated to the Technical Requirements Manual (TRM). ITS 3.3.3.2 requires the Remote Shutdown Monitoring System Functions to be OPERABLE. In addition, the proposed Surveillance Requirements ensure the required instruments are properly tested. These requirements are adequate for ensuring each required Remote Shutdown Monitoring System Function is maintained OPERABLE. The Bases also identifies that the instruments are required for OPERABILITY of the Remote Shutdown Monitoring System and are listed in

TECHNICAL CHANGES - LESS RESTRICTIVE

LA.1 (cont'd) the TRM. As such, the relocated details are not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS. The TRM will be incorporated by reference into the LaSalle 1 and 2 UFSAR at ITS implementation. Changes to the relocated requirements in the TRM will be controlled by the provisions of 10 CFR 50.59.

LD.1 The Frequency for performing the CHANNEL FUNCTIONAL TEST portion of the CHANNEL CALIBRATION Surveillance of CTS Table 4.3.7.4-1 (proposed SR 3.3.3.2.2) has been extended from 18 months to 24 months. The proposed change will allow this Surveillance to extend its Surveillance Frequency from the current 18 month Surveillance Frequency (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2) to a 24 month Surveillance Frequency (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2). This proposed change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical maintenance and surveillance data have shown that this test normally passes its Surveillance at the current Frequency. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. Based on the inherent system and component reliability and the testing performed during the operating cycle, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 24 month Surveillance Frequency, if performed at the maximum interval allowed by proposed SR 3.0.2 (30 months) does not invalidate any assumptions in the plant licensing basis.

LE.1 The Frequency for performing the CHANNEL CALIBRATION Surveillances of CTS 4.3.7.4 (proposed SR 3.3.3.2.2) for CTS Table 4.3.7.4-1 Instruments 1 through 9 has been extended from 18 months to 24 months. The SR ensures that the Remote Shutdown Monitoring System Instrumentation channels indicate correctly. The proposed change will allow these Surveillances to extend their Surveillance Frequency from the current 18 month Surveillance Frequency (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2) to a 24 month Surveillance Frequency (i.e., a maximum of 30 months accounting for the allowable grace period

TECHNICAL CHANGES - LESS RESTRICTIVE

LE.1 (cont'd) specified in CTS 4.0.2 and proposed SR 3.0.2). This proposed change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991.

Extending the SR Frequency is acceptable because the instrumentation is designed to be highly reliable. Furthermore, the impacted Remote Shutdown Monitoring System Instrumentation has been evaluated based on make, manufacturer, and model number to determine that the instrumentation's actual drift falls within acceptable allowances as determined by quantitative or qualitative analysis. The following paragraphs listed by current Remote Shutdown System Instrument Number (CTS Table 4.3.7.4-1), identify by make, manufacturer, and model number and the drift evaluations performed:

Instrument 1, Reactor Vessel Pressure

This function is performed by a Rosemount 1151GP9 transmitter (Unit 1), a Rosemount 1152GP9 transmitter (Unit 2) and GE Type 180 indicators. The GE Type 180 indicators were evaluated utilizing a qualitative analysis (i.e., engineering judgment). A sufficient quantity of As Found and As Left calibration data was not available for the Rosemount 1151GP9 and 1152GP9 transmitters to perform a rigorous drift analysis. As Found and As Left calibration data for the Rosemount 1151GP9 and 1152GP9 transmitters was qualitatively evaluated (i.e., engineering judgment) and found to be consistent with other Rosemount instrumentation used for protective functions. The results of this analysis support a 24 month fuel cycle surveillance interval extension.

Instrument 2, Reactor Vessel Water Level

This function is performed by Rosemount 1153DB5 transmitters and GE Type 180 indicators. The GE indicators were evaluated utilizing a qualitative analysis (i.e., engineering judgement). Drift for the Rosemount transmitters was quantitatively determined, and qualitatively evaluated (i.e., engineering judgment) based on make, manufacturer and model number, verifying that drift for normal operating conditions is consistent with similar plant instrumentation used for protective functions. The results of both evaluations support a 24 month fuel cycle surveillance interval extension.

TECHNICAL CHANGES - LESS RESTRICTIVE

LE.1 (cont'd)

Instrument 3, RHR Flow

This function is performed by Rosemount 1151DP5 transmitters, and GE Type 180 indicators. The GE Type 180 indicators were evaluated utilizing a qualitative analysis (i.e., engineering judgment). Drift for the Rosemount transmitters was quantitatively determined, and qualitatively evaluated (i.e., engineering judgment) based on make, manufacturer and model number, verifying that drift for normal operating conditions is consistent with similar plant instrumentation used for protective functions. The results of both evaluations support a 24 month fuel cycle surveillance interval extension.

Instrument 4, RHR Service Water Flow

This function is performed by Rosemount 1153DB5 transmitters and GE Type 180 Indicators. The GE Type 180 indicators were evaluated utilizing a qualitative analysis (i.e., engineering judgment). Drift for the Rosemount transmitters was quantitatively determined, and qualitatively evaluated (i.e., engineering judgment) based on make, manufacturer and model number, verifying that drift for normal operating conditions is consistent with similar plant instrumentation used for protective functions. The results of both evaluations support a 24 month fuel cycle surveillance interval extension.

Instrument 5, RHR Service Water Temperature

This function is performed by thermocouples, Bailey type 740 signal converters and GE Type 180 indicators. The thermocouples, Bailey instruments and GE indicators were evaluated utilizing a qualitative analysis (i.e., engineering judgment). The results of these evaluations support a 24 month fuel cycle surveillance interval extension.

Instrument 6, RCIC Flow

This function is performed by Rosemount 1153DB5 transmitters, Bailey G282-FQC83, 7500 square root extractors, Bailey 740 signal converters, Bailey 701 flow controllers, and GE Type 180 indicators. The Bailey instruments and GE indicators were evaluated utilizing a qualitative analysis (i.e., engineering judgment). Drift for the Rosemount transmitters was quantitatively determined, and qualitatively evaluated (i.e., engineering judgment) based on make, manufacturer and model number, verifying that drift for normal operating conditions is consistent with similar plant instrumentation used for protective functions. The results of these evaluations support a 24 month fuel cycle surveillance interval extension.

TECHNICAL CHANGES - LESS RESTRICTIVE

LE.1 (cont'd)

Instrument 7, RCIC Turbine Speed

This function is performed by a Woodward 8270-849 EGM control box, Woodward 8270-848 I/E signal converter, and a GE Type 180 indicator. The Woodward instruments and GE Type 180 indicator were evaluated utilizing a qualitative analysis (i.e., engineering judgment). The results of this analysis support a 24 month fuel cycle surveillance interval extension.

Instrument 8, Suppression Pool Water Level

This function is performed by Rosemount 1153DB3 transmitters and GE Type 180 indicators. The GE indicators and Rosemount 1153DB3 transmitters were evaluated utilizing a qualitative analysis (i.e., engineering judgment). The results of these evaluations support a 24 month fuel cycle surveillance interval extension.

Instrument 9, Suppression Pool Water Temperature

This function is performed by thermocouples, Bailey 740 instruments, and GE Type 180 indicators. The Bailey instruments and the GE indicators were evaluated utilizing a qualitative analysis (i.e, engineering judgment). The results of the evaluations support a 24 month fuel cycle surveillance interval extension.

Based on the design of the instrumentation and the drift evaluations, it is concluded that the impact, if any, on system availability is minimal as a result of the change in the surveillance test interval.

A review of the surveillance test history was performed to validate the above conclusion. This review of the surveillance test history, demonstrates that there are no failures that would invalidate the conclusion that the impact, if any on system availability is minimal from a change to a 24-month surveillance frequency. In addition, the proposed 24-month Surveillance Frequencies, if performed at the maximum interval allowed by proposed SR 3.0.2 (30 months) do not invalidate any assumptions in the plant licensing basis.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

"Specific"

L.1 The allowed outage time in CTS 3.3.7.4 Action a for inoperable Remote Shutdown Monitoring System instrumentation is extended from 7 days to 30 days in ITS 3.3.3.2 ACTION A. The Remote Shutdown Monitoring System is not required to respond to any mechanistic design basis accident evaluated in the safety analysis, but is provided to comply with GDC-19 design criteria. The Specification is retained only as a significant contributor to risk reduction, and extending the allowed outage time when a Remote Shutdown Monitoring System instrument channel is inoperable does not have a significant impact on that contribution.

L.2 A Note has been added to CTS 4.3.7.4 (ITS 3.3.3.2 Surveillance Requirements Note) to allow a channel to be inoperable for up to 6 hours solely for performance of required Surveillances. The 6 hour testing allowance has been granted by the NRC in TS amendments for Hatch Unit 1 (amendment 185) and Unit 2 (amendment 125), WNP-2 (amendment 149, the ITS amendment), and Nine Mile Point Unit 2 (amendment 91, the ITS amendment). The NRC has also granted this allowance in other topical reports for the Reactor Protection System, Emergency Core Cooling System, and isolation equipment. The 6 hour testing allowance does not significantly reduce the probability of properly monitoring Remote Shutdown Monitoring System parameters, when necessary.

L.3 CTS 4.3.7.4 requires a Channel Check to be performed for the instruments in CTS Table 4.3.7.4-1. Some instrumentation channels (CTS Table 4.3.7.4-1, Instruments 1 (Reactor Vessel Pressure), 2 (Reactor Vessel Water Level), 3 (RHR Flow), 4 (RHR Service Water Flow), 6 (RCIC Flow), and 7 (RCIC Turbine Speed) are deenergized (do not provide proper indication) during normal operation. No specific acceptance criteria would apply to the Channel Check (since the instruments would not be indicating properly). Therefore, this Surveillance Requirement in proposed SR 3.3.3.2.1 is modified to exclude the Channel Check requirement on these deenergized channels. This change is considered acceptable (since the channels are normally deenergized and any Channel Check requirement would be essentially equivalent to no requirement). In addition, energizing these instrument channels requires operation of a transfer switch, which takes control of certain Remote Shutdown Monitoring System instruments (and any associated controls) from the control room and shifts it to the remote shutdown panel.

RELOCATED SPECIFICATIONS

None

A.1

INSTRUMENTATION

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION

add proposed LCO 3.3.4.1.b A.2

LIMITING CONDITION FOR OPERATION

LCO 3.3.4.1.a

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

SR 3.3.4.1.5

APPLICABILITY: OPERATIONAL CONDITION 1, when THERMAL POWER is greater than or equal to 25% of RATED THERMAL POWER. with any recirculation pump in fast speed A.3 L.2

ACTION: add proposed ACTIONS Note A.4

Actions A and B

a. With an end-of-cycle recirculation pump trip system instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.4.2-2, declare the channel inoperable until the channel is restored to OPERABLE status with the channel setpoint adjusted consistent with the Trip Setpoint value. LA.3

add proposed Required Action A.1 and Required Action A.2 Note M.1

Action A

b. With the number of OPERABLE channels one less than required by the Minimum OPERABLE Channels per Trip System requirement for one or both trip systems, place the inoperable channel(s) in the tripped condition within 12 hours. 72 LB.1

Condition A

c. With the number of OPERABLE channels two or more less than required by the Minimum OPERABLE Channels per Trip System requirement(s) for one trip system and:

Required Action A.2

1. If the inoperable channels consist of one turbine control valve channel and one turbine stop valve channel, place both inoperable channels in the tripped condition within 12 hours. 72 LB.1

Required Action A.1

2. If the inoperable channels include two turbine control valve channels or two turbine stop valve channels, declare the trip system inoperable. L.3

Actions A and B

d. With one trip system function inoperable, restore the inoperable trip system to OPERABLE status within 72 hours. Otherwise, either: L.4

Required Action B.2

1. Increase the MINIMUM CRITICAL POWER RATIO (MCPR) Limiting Condition for Operation (LCO) to the EOC-RPT inoperable value per Specification 3.2.3 within the next 1 hour or, 2 L.1

Required Action C.2

2. Reduce THERMAL POWER to less than 25% of RATED THERMAL POWER within the next 6 hours. 4 M.2 L.4

Actions A and B

e. With both trip systems function inoperable, restore at least one trip system to OPERABLE status within 1 hours. Otherwise, either: 2 L.1

Add Required Action C.1 L.2

INSTRUMENTATION

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

Required Action B.2 1. Increase the MINIMUM CRITICAL POWER RATIO (MCPR) Limiting Condition for Operation (LCO) to the EOC-RPT inoperable value per Specification 3.2.3 within the next ~~1~~ 2 hour or, L.1

Required Action C.2 2. reduce THERMAL POWER to less than 25% of RATED THERMAL POWER within the next ~~6~~ 4 hours. M.2

SURVEILLANCE REQUIREMENTS

SR 3.3.4.1.1 SR 3.3.4.1.2 4.3.4.2.1 Each end-of-cycle recirculation pump trip system instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3.4.2.1-1. A.5

SR 3.3.4.1.3 4.3.4.2.2 LOGIC SYSTEM FUNCTIONAL TESTS ~~and simulated automatic operation~~ of all channels shall be performed at least once per ~~18~~ 24 months. LD.1

SR 3.3.4.1.5 4.3.4.2.3 The END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM RESPONSE TIME of each trip function ~~shown in Table 3.3.4.2-3~~ shall be demonstrated to be within its limit at least once per ~~18~~ months. ~~Each test shall include at least the logic of one type of channel input, turbine control valve fast closure or turbine stop valve closure, such that both types of channel inputs are tested at least once per~~ ~~36~~ ~~months.~~ LA.3

SR 3.3.4.1.6 The time allotted for breaker arc suppression shall be verified by test at least once per 60 months. LA.4

48 LD.1

Add Note 1 to SR 3.3.4.1.5 A.6

Add Note 2 to SR 3.3.4.1.5 A.7

A.1

TABLE 3.3.4.2-1

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION

Note to Surveillance Requirements

LA.1

TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM[a]
1. Turbine Stop Valve Closure	2[b]
2. Turbine Control Valve - Fast Closure	2[b]

LCO 3.3.4.1.a

Note to Surveillance Requirements

(a) A trip system may be placed in an inoperable status for up to 6 hours for required surveillance provided that the other trip system is OPERABLE.

(b) This function shall not be automatically bypassed when THERMAL POWER is greater than or equal to 25% of RATED THERMAL POWER.

LA.1

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Specification 3.3.4.1

A.1

TABLE 3.3.4.2-2

SR 3.3.4.1.2

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM SETPOINTS

LF.1

LCO 3.3.4.1.a

TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
1. Turbine Stop Valve-Closure	~~≤ 5% closed~~	≤ 7% closed
2. Turbine Control Valve - Fast Closure	~~≥ 500 psig~~	≥ 414 psig

LA.3

A.1

TABLE 3.3.4.2-3

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM RESPONSE TIME

TRIP FUNCTION	RESPONSE TIME (Milliseconds)
1. Turbine Stop Valve-Closure	≤ 97
2. Turbine Control Valve - Fast Closure	≤ 97

LA.2

A.1

TABLE 4.3.4.2.1-1

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM SURVEILLANCE REQUIREMENTS

LCO 3.3.4.1.a

TRIP FUNCTION	SR 3.3.4.1.1 CHANNEL FUNCTIONAL TEST	SR 3.3.4.1.2 CHANNEL CALIBRATION
1. Turbine Stop Valve-Closure[a]	Q	~~R~~
2. Turbine Control Valve-Fast Closure[a]	Q	~~R~~

24 months LE.1

24 LD.1

SR 3.3.4.1.4 (a) At least once per ~~18~~ 24 months, verify Turbine Stop Valve - Closure and Turbine Control Valve - Fast Closure Trip Functions are not bypassed when THERMAL POWER is ≥25% of RATED THERMAL POWER. Specification 4.0.2 applies to this ~~18 month~~ interval. LD.1

SR 3.0.2

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Specification 3.3.4.1

Specification 3.3.4.1

A.1

POWER DISTRIBUTION LIMITS

3/4.2.3 MINIMUM CRITICAL POWER RATIO

LIMITING CONDITION FOR OPERATION

LCO 3.3.4.1.b

3.2.3 The MINIMUM CRITICAL POWER RATIO (MCPR) shall be equal to or greater than the MCPR limit specified in the CORE OPERATING LIMITS REPORT.

APPLICABILITY: A.3

~~OPERATIONAL CONDITION 1, when~~ THERMAL POWER is greater than or equal to 25% of RATED THERMAL POWER.

ACTION

a. With MCPR less than the applicable MCPR limit as determined for one of the conditions specified in the CORE OPERATING LIMITS REPORT.

1. Initiate corrective action within 15 minutes, and

2. Restore MCPR to within the required limit within 2 hours.

3. Otherwise, reduce THERMAL POWER to less than 25% of RATED THERMAL POWER within the next 4 hours.

SEE ITS 3.2.2

Required ACTION C.2

b. When operating in a condition not specified in the CORE OPERATING LIMITS REPORT, reduce THERMAL POWER to less than 25% of RATED THERMAL POWER within 4 hours.

Add Required Action C.1 L.2

A.1 Specification 3.3.4.1

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION add proposed LCO 3.3.4.1.b A.2

LCO 3.3.4.1.a 3.3.4.2 The end-of-cycle recirculation pump trip (EOC-RPT) system instrumentation channels shown in Table 3.3.4.2-1 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.4.2-2 and with the END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM LA.3 LA.2
SR 3.3.4.1.5 RESPONSE TIME as shown in Table 3.3.4.2-3.

A.3

APPLICABILITY: OPERATIONAL CONDITION 1, when THERMAL POWER is greater than or equal to 25% of RATED THERMAL POWER. with any recirculation pump in fast speed L.2

ACTION: add proposed ACTIONS Note A.4

ACTIONS A and B a. With an end-of-cycle recirculation pump trip system instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.4.2-2, declare the channel inoperable until the channel is restored to OPERABLE status with the channel setpoint adjusted consistent with the Trip Setpoint value. LA.3

ACTION A b. With the number of OPERABLE channels one less than required by the Minimum OPERABLE Channels per Trip System requirement for one or both trip systems, place the inoperable channel(s) in the tripped condition within 12 72 hours. LB.1

CONDITION A c. With the number of OPERABLE channels two or more less than required by the Minimum OPERABLE Channels per Trip System requirement(s) for one trip system and: M.1

add proposed Required Action A.1 and Required Action A.2 Note

Required Action A.2 1. If the inoperable channels consist of one turbine control valve channel and one turbine stop valve channel, place both inoperable channels in the tripped condition within 12 72 hours. LB.1

Required Action A.1 2. If the inoperable channels include two turbine control valve channels or two turbine stop valve channels, declare the trip system inoperable. L.3

ACTIONS A and B d. With one trip system function inoperable, restore the inoperable trip system function to OPERABLE status within 72 hours, otherwise, either: L.4 L.1

Required Action B.2 1. Increase the MINIMUM CRITICAL POWER (MCPR) Limiting Condition for Operation (LCO) to the EOC-RPT inoperable value per Specification 3.2.3 within the next 1 2 hour, or M.2

Required Action C.2 2. Reduce THERMAL POWER to less than 25% of RATED THERMAL POWER within the next 6 4 hours.

ACTIONS A and B e. With both trip systems function inoperable, restore at least one trip system to OPERABLE status within 1 2 hours otherwise, either: L.4 L.1

Required Action B.2 1. Increase the MINIMUM CRITICAL POWER (MCPR) Limiting Condition for Operation (LCO) to the EOC-RPT inoperable value per Specification 3.2.3 within the next 1 2 hour, or L.1

Required Action C.2 2. Reduce THERMAL POWER to less than 25% RATED THERMAL POWER within the next 6 4 hours. M.2

Add Required Action C.1 L.2

INSTRUMENTATION

A.1

SURVEILLANCE REQUIREMENTS

SR 3.3.4.1.1 SR 3.3.4.1.2 4.3.4.2.1 Each end-of-cycle recirculation pump trip system instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3.4.2.1-1.

SR 3.3.4.1.3 4.3.4.2.2 LOGIC SYSTEM FUNCTIONAL TESTS ~~and simulated automatic operation~~ of all channels shall be performed at least once per 18 months. A.5 24 LD.1

SR 3.3.4.1.5 4.3.4.2.3 The END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM RESPONSE TIME of each trip function ~~shown in Table 3.3.4.2-3~~ shall be demonstrated to be within its limit at least once per 18 months. Each test shall include at least the logic of one type of channel input, turbine control valve fast closure or turbine stop valve closure, such that both types of channel inputs are tested at least once per 36 months. The time allotted for breaker arc suppression
SR 3.3.4.1.6 shall be verified by test at least once per 60 months. LA.3 LA.4 48 LD.1

Add Note 1 to SR 3.3.4.1.5 A.6

Add Note 2 to SR 3.3.4.1.5 A.7

A.1 TABLE 3.3.4.2-1

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION

LCO 3.3.4.1.a

TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM(a)
1. Turbine Stop Valve Closure	2(b)
2. Turbine Control Valve - Fast Closure	2(b)

Note to Surveillance Requirement

LA.1

Note to Surveillance Requirements

(a) A trip system may be placed in an inoperable status for up to 6 hours for required surveillance provided that the other trip system is OPERABLE.

~~(b) This function shall not be automatically bypassed when THERMAL POWER is greater than or equal to 25% of RATED THERMAL POWER.~~

LA.1

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Specification 3.3.4.1

A.1 TABLE 3.3.4.2-2

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM SETPOINTS

SR 3.3.4.1.2

LCO 3.3.4.1.a

TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
1. Turbine Stop Valve-Closure	~~≤ 5% closed~~	≤ 7% closed
2. Turbine Control Valve - Fast Closure	~~≥ 500 psig~~	≥ 414 psig

LA3

LF.1

Specification 3.3.4.1

A.1 TABLE 3.3.4.2-3

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM RESPONSE TIME

TRIP FUNCTION	RESPONSE TIME (Milliseconds)
1. Turbine Stop Valve-Closure	≤ 97
2. Turbine Control Valve - Fast Closure	≤ 97

LA.2

Specification 3.3.4.1

A.1 TABLE 4.3.4.2.1-1

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM SURVEILLANCE REQUIREMENTS

LCO 3.3.4.1.a TRIP FUNCTION	SR 3.3.4.1.1 CHANNEL FUNCTIONAL TEST	SR 3.3.4.1.2 CHANNEL CALIBRATION
1. Turbine Stop Valve Closure(a)	Q	~~R~~ 24 months LE.1
2. Turbine Control Valve-Fast Closure(a)	Q	~~R~~

SR 3.3.4.1.4 (a) At least once per 18 24 LD.1 months, verify Turbine Stop Valve - Closure and Turbine Control Valve - Fast Closure Trip Functions are not bypassed when THERMAL POWER is ≥ 25% of RATED THERMAL POWER. SR 3.0.2 Specification 4.0.2 applies to this ~~18 month~~ LD.1 interval.

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Specification 3.3.4.1

A.1

POWER DISTRIBUTION LIMITS

3/4.2.3 MINIMUM CRITICAL POWER RATIO

LIMITING CONDITION FOR OPERATION

LCO 3.3.4.1.b

3.2.3 The MINIMUM CRITICAL POWER RATIO (MCPR) shall be equal to or greater than the MCPR limit specified in the CORE OPERATING LIMITS REPORT.

APPLICABILITY:

OPERATIONAL CONDITION 1, when THERMAL POWER is greater than or equal to 25% of RATED THERMAL POWER. A.3

ACTION

a. With MCPR less than the applicable MCPR limit as determined for one of the conditions specified in the CORE OPERATING LIMITS REPORT:

1. Initiate corrective action within 15 minutes, and
2. Restore MCPR to within the required limit within 2 hours.
3. Otherwise, reduce THERMAL POWER to less than 25% of RATED THERMAL POWER within the next 4 hours.

SEE ITS 3.2.2

Required Action C.2

b. When operating in a condition not specified in the CORE OPERATING LIMITS REPORT, reduce THERMAL POWER to less than 25% of RATED THERMAL POWER within 4 hours.

Add Required Action C.1 L.2

ADMINISTRATIVE

A.1 In the conversion of the LaSalle 1 and 2 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1434, Rev. 1 (i.e., the Improved Standard Technical Specifications (ISTS)).

A.2 CTS 3.3.4.2 requires the EOC-RPT Instrumentation to be Operable. The purpose of the EOC-RPT Instrumentation is to help ensure a MCPR Safety Limit violation will not occur late in core life due to a turbine trip or generator load rejection. Therefore, an additional LCO option has been added to ITS 3.3.4.1 to permit a MCPR penalty to be applied in lieu of maintaining the EOC-RPT Instrumentation Operable. This is consistent with the current licensing basis as indicated in CTS 3.3.4.2 Actions d and e, and CTS 3.2.3, "MCPR," Action a. The MCPR penalty is specified in the COLR, similar to other MCPR penalties (e.g., Main Turbine Bypass System inoperable). This change in format is consistent with the BWR ISTS, NUREG-1434, Rev. 1.

A.3 The Applicabilities of CTS 3.3.4.2 and CTS 3.2.3 are "OPERATIONAL CONDITION 1, when THERMAL POWER is greater than or equal to 25% of RATED THERMAL POWER." With THERMAL POWER ≥ 25% RTP, the unit will always be in MODE 1. Therefore, it is unnecessary to state in the CTS 3.3.4.2 and CTS 3.2.3 Applicabilities and have been deleted.

A.4 This proposed change to the CTS 3.3.4.2 Actions provides more explicit instructions for proper application of the Actions for Technical Specification compliance. In conjunction with the proposed Specification 1.3, "Completion Times," the ITS 3.3.4.1 ACTIONS Note ("Separate Condition entry is allowed for each....") provides direction consistent with the intent of the existing Actions for an inoperable EOC-RPT instrumentation channel. It is intended that each inoperable Channel is allowed a certain time to complete the Required Actions. Since this change only provides more explicit direction of the current interpretation of the existing specifications, this change is considered administrative.

ADMINISTRATIVE (continued)

A.5 CTS 4.3.4.2.2 requires performance of "simulated automatic operation." Verification of simulated automatic operation is normally conducted with the system functional test. However, for the EOC-RPT System the only automatic operation required is opening of the recirculation pump trip breakers. Since no separate system functional test is specified, the opening of these breakers is specifically identified and included with the LOGIC SYSTEM FUNCTIONAL TEST of proposed SR 3.3.4.1.3. Since this is only a change in the presentation, this change is considered administrative.

A.6 CTS 4.3.4.2.3 provides Surveillance Requirements (SRs) for the EOC-RPT SYSTEM RESPONSE TIME TEST and to determine the time allotted for breaker arc suppression. In ITS 3.3.4.1, these requirements are addressed as separate SRs (i.e., SRs 3.3.4.1.5 and 3.3.4.1.6). ITS SR 3.3.4.1.5 contains a Note that states: "Breaker arc suppression time may be assumed from the most recent performance of SR 3.3.4.1.6." This Note was added to CTS 4.3.4.2.3 as a clarification that is consistent with current plant practice. Therefore, the addition of Note 1 to SR 3.3.4.1.5 is considered to be an administrative change.

A.7 For the Turbine Stop Valve—Closure Function of EOC—RPT, the response time of the limit switch is not measured since it is not practicable. A test switch in parallel with the limit switch is used to simulate the limit switch function, and the response time downstream of the test switch is measured. The response time of the limit switch is conservatively assumed to be 10 ms, which is added to the measured response time to obtain the total EOC—RPT Response Time. This method has been previously accepted by the NRC, as documented in a letter from W.G. Guldemond (NRC) to C. Reed (ComEd), dated January 26, 1987. Therefore, Note 2 has been added to ITS SR 3.3.4.1.5 to provide this allowance (the limit switch response time is conservatively assumed) and this addition is considered administrative. For clarity, the Bases will also provide the value for the assumed limit switch response time (10 ms).

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 If the channels are inoperable due to a trip breaker that will not open, placing the channels in the tripped condition, as required by CTS 3.3.4.2, Actions b and c.1, will not accomplish the intended restoration of the functional capability. Therefore, a Note is added to ITS 3.3.4.1 Required Action A.2 to prevent this

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 (cont'd) Required Action from being used in these conditions. With the addition of the Note, Required Action A.1 has also been added to restore the channel in lieu of tripping the channel. This new Note and Required Action will ensure the functional capability of the EOC-RPT System is restored (by restoring the inoperable channel) within the allowed Completion Time when a trip breaker is inoperable and is more restrictive on plant operation.

M.2 CTS 3.3.4.2 Actions d.2 and e.2 require THERMAL POWER to be reduced to less than 25% of RATED THERMAL POWER within 6 hours when one or both trip systems are not returned to OPERABLE status within the allowed Completion Times and the MCPR limit is not adjusted as required by Actions d.1 and e.1. ITS 3.3.4.1 Required Action C.2 provides a similar requirement. However, the time period to reduce THERMAL POWER is decreased to 4 hours. This additional restriction on plant operations is consistent with similar Specifications that require a power reduction to 25% RTP (e.g., MCPR).

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

LA.1 CTS Table 3.3.4.2-1 footnote (b), states that Turbine Stop Valve—Closure and the Turbine Control Valve—Fast Closure, shall not be automatically bypassed when THERMAL POWER is greater than or equal to 25% of RATED THERMAL POWER. This system design detail is proposed to be relocated to the Bases. This is a design detail that is not necessary to be included in the Technical Specifications to ensure the OPERABILITY of the EOC-RPT Instrumentation, since OPERABILITY requirements are adequately addressed in ITS 3.3.4.1 and proposed SR 3.3.4.1.4. Therefore, the relocated detail is not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

LA.2 CTS Table 3.3.4.2-3, End of Cycle Recirculation Pump Trip System Response Times, and references to the Table in CTS 3/4.3.4.2 are proposed to be relocated to the Technical Requirements Manual (TRM). The response times included in CTS Table 3.3.4.2-3 are details of End of Cycle Recirculation Pump Trip (EOC-RPT) System Instrumentation OPERABILITY. The relocation of the EOC-RPT System Response Time Table to the TRM will not alter the requirement for EOC-RPT System response times to be maintained within limits and is consistent with NRC Generic Letter 93-08, "Relocation of Technical Specification Tables of Instrument Response Time Limits." ITS LCO 3.3.4.1

TECHNICAL CHANGES - LESS RESTRICTIVE

LA.2 (cont'd) requires the EOC-RPT System Instrumentation to be OPERABLE and SR 3.3.4.1.5 and SR 3.3.4.1.6 require that EOC-RPT System Instrumentation response times be periodically verified to be within limits. Therefore, the requirements of ITS 3.3.4.1 and the associated Surveillance Requirements are adequate to ensure the EOC-RPT System Instrumentation is maintained OPERABLE. As such, these relocated details are not necessary to be in the ITS to provide adequate protection of the public health and safety. The TRM will be incorporated by reference into the LaSalle 1 and 2 UFSAR at ITS implementation. Changes to the TRM will be controlled by the provisions of 10 CFR 50.59.

LA.3 CTS 3.3.4.2 requires the Trip Setpoints to be set consistent with the values shown in the Trip Setpoint column of Table 3.3.4.2-3. CTS 3.3.4.2 Action a requires inoperable channels to be restored to OPERABLE status with trip setpoints adjusted consistent with the Trip Setpoint values. Trip setpoints are operational details that are not directly related to the OPERABILITY of the instrumentation. These details are to be relocated to the Technical Requirements Manual (TRM) and the references to these setpoints in CTS 3.3.4.2 are deleted. The Allowable Value is the required limitation for the associated Function and this value is retained in the Technical Specifications. These relocated trip setpoints are not required to be in the ITS to provide adequate protection of the public health and safety. The TRM will be incorporated by reference into the LaSalle 1 and 2 UFSAR at ITS implementation. Any changes to the relocated trip setpoints in the TRM will be controlled by the provisions of 10 CFR 50.59.

LA.4 CTS 4.3.4.2.3 requires EOC—RPT System Response Time testing and includes a description of the Frequency application that is consistent with the ITS definition of STAGGERED TEST BASIS when applied to the two input Functions. ITS SR 3.3.4.1.5 is proposed with a Frequency that includes the STAGGERED TEST BASIS. The application by Function information is relocated to the Bases to maintain the current application clarity. This is a detail that is not necessary to be included in the Technical Specifications to ensure the OPERABILITY of the EOC—RPT Instrumentation. Therefore, the relocated detail is not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

LB.1 The allowed out of service time of CTS 3.3.4.2 Actions b and c.1 are extended from 12 hours to 72 hours in ITS 3.3.4.1 ACTION A. This allowed out of service time has been shown to maintain an acceptable risk in accordance with previously conducted reliability analysis (GENE-770-06-1-A, December 1992). The logic design of the instrumentation is bounded by that analyzed in the reliability analysis and the conclusions of the analysis are applicable to the LaSalle 1 and 2 design. The results of the NRC review of this generic reliability analysis as it relates to LaSalle 1 and 2 is documented in the NRC Safety Evaluation Report (SER) dated August 2, 1995. The SER concluded that the generic reliability analysis is applicable to LaSalle 1 and 2, and that LaSalle 1 and 2 meets all requirements of the NRC SER accepting the generic reliability analysis.

LD.1 The Frequencies for performing the LOGIC SYSTEM FUNCTIONAL TEST, verification that the Turbine Stop Valve—Closure and Turbine Control Valve—Fast Closure Functions are not bypassed when THERMAL POWER is ≥ 25% RTP, and EOC-RPT RESPONSE TIME TEST (except the breaker arc suppression time) requirements of CTS 4.3.4.2.2, Table 4.3.4.2.1-1 footnote (a), and 4.3.4.2.3 (proposed SRs 3.3.4.1.3, 3.3.4.1.4, and 3.3.4.1.5) have been extended from 18 months to 24 months. These SRs ensure that EOC-RPT trip logic will function as designed to ensure proper response during an analyzed event. The proposed change will allow these Surveillances to extend their Surveillance Frequency from the current 18 month Surveillance Frequency (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2) to a 24 month Surveillance Frequency (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2). This proposed change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991.

Extending the SR interval for this function is acceptable because the EOC-RPT logic is tested every 92 days by the CHANNEL FUNCTIONAL TEST (proposed SR 3.3.4.1.1). This testing of the EOC-RPT logic system ensures that a significant portion of the circuitry is operating properly and will detect significant failures of this circuitry. The EOC-RPT logic including the actuating logic is designed to be single failure proof and therefore, is highly reliable.

TECHNICAL CHANGES - LESS RESTRICTIVE

LD.1 (cont'd) Based on the above discussion, the impact, if any, of this change on system availability is minimal. A review of the surveillance test history was performed to validate the above conclusion. This historical review of the surveillance test history demonstrates that there are no failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24 month operating cycle. In addition, the proposed 24 month Surveillance Frequencies, if performed at the maximum interval allowed by proposed SR 3.0.2 (30 months) do not invalidate any assumptions in the plant licensing basis.

Furthermore, as stated in the NRC Safety Evaluation Report (dated August 2, 1993) relating to extension of the Peach Bottom Atomic Power Station, Unit Numbers 2 and 3 surveillance intervals from 18 to 24 months:

"Industry reliability studies for boiling water reactors (BWRs), prepared by the BWR Owners Group (NEDC-30936P) show that the overall safety systems' reliabilities are not dominated by the reliabilities of the logic system, but by that of the mechanical components, (e.g., pumps and valves), which are consequently tested on a more frequent basis. Since the probability of a relay or contact failure is small relative to the probability of mechanical component failure, increasing the Logic System Functional Test interval represents no significant change in the overall safety system unavailability."

Based on the above discussion, the impact, if any, of this change on system availability is minimal.

LE.1 The Frequency for performing the CHANNEL CALIBRATION Surveillance of CTS 4.3.4.2.1 and Table 4.3.4.2.1-1 Trip Functions 1 and 2 (proposed SR 3.3.4.1.2) has been extended from 18 months to 24 months. The proposed change will allow these Surveillances to extend their Surveillance Frequency from the current 18 month Surveillance Frequency (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2) to a 24 month Surveillance Frequency (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2). The proposed change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991.

TECHNICAL CHANGES - LESS RESTRICTIVE

LE.1 (cont'd)

Extending the surveillance interval is acceptable since the CHANNEL FUNCTIONAL TESTS are performed during the operating cycle more frequently than the CHANNEL CALIBRATION Surveillance. These CHANNEL FUNCTIONAL TESTS detect failures of the instrumentation channels. Gross instrumentation failures are detected by alarms or by a comparison with redundant and independent indications. Instrumentation purchased for these functions are highly reliable and meet the design criteria of safety related equipment. The instrumentation is designed with redundant and independent channels which provide means to verify proper instrumentation performance during operation and adequate redundancy to ensure a high confidence of system performance even with the failure of a single component.

Furthermore, the impacted EOC-RPT instrumentation has been evaluated based on make, manufacturer and model number to determine that the instrumentation's actual drift falls within the design allowance in the associated setpoint calculation. The following paragraphs listed by CTS Trip Function, identify by make, manufacturer and model number the drift evaluation performed.

Trip Function 1, Turbine Stop Valve—Closure

This function is performed by NAMCO EA170, EA180, EA740 limit switches. Limit switches are mechanical devices that require mechanical adjustment only; drift is not applicable to these devices. Therefore, an increase in surveillance interval to accommodate a 24 month fuel cycle does not affect limit switches with respect to drift.

Trip Function 2, Turbine Control Valve—Fast Closure

This function is performed by Static-O-Ring Pressure Switches 9N6-B45-NX-C1A-JJTTX8. The Static-O-Ring switches' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Based on the design of the instrumentation and the drift evaluations, it is concluded that the impact, if any, on system availability is minimal as a result of the change in the surveillance test interval.

TECHNICAL CHANGES - LESS RESTRICTIVE

LE.1 (cont'd) A review of the surveillance test history was performed to validate the above conclusion. This review of the surveillance test history, demonstrates that there are no failures that would invalidate the conclusion that the impact, if any on system availability is minimal from a change to a 24-month surveillance frequency. In addition, the proposed 24-month Surveillance Frequencies, if performed at the maximum interval allowed by proposed SR 3.0.2 (30 months) do not invalidate any assumptions in the plant licensing basis.

LF.1 This change revises the Current Technical Specifications (CTS) Allowable Values to the Improved Technical Specifications (ITS) Allowable Values. ITS Section 3.3 reflects Allowable Values consistent with the philosophy of BWR ISTS, NUREG-1434, Rev. 1. These Allowable Values have been established consistent with the methods described in ComEd's Instrument Setpoint Methodology (Nuclear Engineering Standard NES-EIC-20.04, "Analysis of Instrument Channel Setpoint Error and Instrument Loop Accuracy"). For most cases, the Allowable Value determinations were calculated using plant specific operating and surveillance trend data or an allowance as provided for by the Instrument Setpoint Methodology. For all other cases, vendor documented performance specifications for drift were used. The Allowable Value verification used actual plant operating and surveillance trend information to ensure the validity of the developed Allowable Value. All changes to safety analysis limits applied in the methodologies were evaluated and confirmed as ensuring safety analysis licensing acceptance limits are maintained. All design limits applied in the methodologies were confirmed as ensuring that applicable design requirements of the associated systems and equipment are maintained. The methodologies used have been compared with the guidance of ANSI/ISA S67.04-Part I-1994 and ANSI/ISA RP67.04-Part II-1994. Plant calibration procedures will ensure that the assumptions regarding calibration accuracy, measurement and test equipment accuracy, and setting tolerance are maintained. Setpoints for each design or safety analysis limit have been established by accounting for the applicable instrument accuracy, calibration and drift uncertainties, environmental effects, power supply fluctuations, as well as uncertainties related to process and primary element measurement accuracy using the Instrument Setpoint Methodology. The Allowable Values have been established from each design or safety analysis limit by combining the errors associated with channel/instrument calibration (e.g., device accuracy, setting tolerance, and drift) with the calculated Nominal Trip Setpoint also using the Instrument Setpoint Methodology.

TECHNICAL CHANGES - LESS RESTRICTIVE

LF.1 (cont'd)

Additionally, each applicable channel/instrument has been evaluated and analyzed to support a fuel cycle extension to a 24 month interval. These evaluations and analyses have been performed utilizing the guidance provided in EPRI TR-103335, "Guidelines for Instrument Calibration Extension/Reduction Programs, Revision 1. The EPRI guidance was used to demonstrate that the data collected by the operating plant (from surveillance testing) has remained acceptable and reasonable with regard to the manufacturers design specifications.

Use of the previously discussed methodologies for determining Allowable Values, instrument setpoints, and analyzing channel/instrument performance ensure that the design basis and associated safety limits will not be exceeded during plant operation. These evaluations, determinations, and analyses now form a portion of the plants design bases.

"Specific"

L.1

CTS 3.3.4.2 Action d requires restoration of one Trip System in 72 hours when one Trip System is inoperable and CTS 3.3.4.2 Action e requires restoration of one Trip System in 1 hour when one Trip System is inoperable (Trip System changed to trip Function as described in Discussion of Change L.4 below). In the event CTS 3.3.4.2 Action d or e requirements for trip system restoration are not met, the MCPR EOC-RPT inoperable limit must be applied within 1 hour. CTS 3.2.3 Action a requires the MCPR to be restored within its limit within 2 hours. The purpose of this instrumentation is to ensure a MCPR Safety Limit violation will not occur late in core life due to a turbine trip or generator load rejection. The time in CTS 3.3.4.2 Action e provided to restore channels to Operable status if both Trip Systems are affected, or the time to apply the MCPR EOC-RPT inoperable limit, has been extended from 1 hour to 2 hours in ITS 3.3.4.1 ACTION B, consistent with the time provided in ITS 3.2.2 ACTION A to restore a MCPR limit. The proposed 2 hour Completion Time for restoration allows appropriate actions to be evaluated by the operator and completed in a timely manner (either restore the EOC-RPT trip capability or make the MCPR limits for an inoperable EOC-RPT instrumentation applicable). The new time is consistent with the current actions for CTS 3.2.1, APLHGR, and CTS 3.2.4, LHGR, the other thermal limits required by the CTS.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

L.2 CTS 3.3.4.2 Actions d and e require a reduction in Thermal Power to < 25% RTP if the EOC-RPT instrumentation is not restored or if the MCPR penalty is not applied. The purpose of the EOC-RPT instrumentation is to ensure a MCPR Safety Limit violation will not occur late in core life due to a turbine trip or generator load rejection. This is accomplished by tripping the normal supply breakers to the recirculation pumps, which remove the pumps from fast speed operation. Slow speed operation (energized from the low frequency motor generator) is not affected, since it is not necessary to trip the slow speed breakers to protect from a MCPR Safety Limit violation. Therefore, an additional Required Action is proposed, ITS 3.3.4.1 Required Action C.1, to allow removal of the associated recirculation pump fast speed breaker from service in lieu of reducing Thermal Power to < 25% RTP. Since this action accomplishes the functional purpose of the EOC-RPT instrumentation and enables continued operation in a previously approved condition, this change does not have a significant effect on safe operation. In addition, for clarity, the CTS Applicability, which requires the EOC-RPT Instrumentation to be Operable when Thermal Power is ≥ 25% RTP, has been changed in the ITS 3.3.4.1 Applicability to only be required when Thermal Power is ≥ 25% RTP with any recirculation pump in fast speed.

L.3 CTS 3.3.4.2 Action c.2 requires the associated Trip System to be declared inoperable when two turbine control valve channels or two turbine stop valve channels in the same Trip System are inoperable. CTS 3.3.4.2 Action d then requires restoration of the Trip System within 72 hours. ITS 3.3.4.1 Required Action A.1 addresses only channels and will also require the inoperable channels be restored to operable status. ITS also provides an option to place inoperable channels in the tripped condition, however this would result in a trip of both pumps and is not a practical option when both channels of a function are inoperable in the same trip system. ITS also allows for restoration of a single channel (rather than the entire trip system) and allows for continued operation with one restored and one in trip. This is a less restrictive change but acceptable since the actions conservatively compensate for the inoperable status, restores the single failure capability and provides the required initiation capability of the instrumentation. Therefore, providing this option does not impact safety.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

L.4 CTS 3.3.4.2 Action d requires that when one Trip System is inoperable, 72 hours are provided to restore the Trip System. CTS 3.3.4.2 Action e requires that when both Trip Systems are inoperable, 1 hour is provided to restore one Trip System. As described in CTS 3.3.4.2 Action c.2, a Trip System is inoperable when two channels of the same Function (i.e., turbine stop valve or turbine control valve) are inoperable in the Trip System. ITS 3.3.4.1 ACTION B addresses trip Function capability, not Trip System capability. A trip Function is maintained when sufficient channels are Operable or in trip, such that the EOC-RPT System will generate a trip signal from the given Function on a valid signal and both recirculation pumps can be tripped. This requires two channels of the Function, in the same trip system, to each be Operable or in trip. The following is a description of the manner in which the ITS is applied, relative to the CTS:

a) When a single Trip System is inoperable under the CTS requirements, either due to two inoperable turbine stop valve channels or two inoperable turbine control valve channels, or both, the ITS will not have an inoperable Function. Therefore, ITS ACTION A would apply, which allows 72 hours to restore channels. This is consistent with the CTS Action d time.

b) When both Trip Systems are inoperable under the CTS requirements due to two channels of the same Function being inoperable in both Trip Systems or all channels of both Functions being inoperable in both Trip Systems, the ITS will have inoperable Function(s). Therefore, ITS ACTION B would apply, which allows 2 hours to restore channels. This is consistent with the CTS Action e time, after the change described in Discussion of Change L.1 above.

c) When both Trip Systems are inoperable under the CTS requirements due to two channels of one Function being inoperable in one Trip System and two channels of the other Function being inoperable in the other Trip System, the ITS will not have an inoperable Function. Therefore, ITS ACTION A would apply, which allows 72 hours to restore channels. The CTS requires the channels in one Trip System to be restored within 1 hour (changed to 2 hours as described in Discussion of Change L.1 above). The purpose of this instrumentation is to ensure a MCPR Safety Limit violation will not occur late in core life due to a turbine trip or generator load rejection. It is acceptable since during this additional 71 hours, both Functions (turbine stop valve and turbine control valve) maintain the capability to initiate an EOC-RPT trip, provided no additional single failure occurs.

RELOCATED SPECIFICATIONS

None

Specification 3.3.4.2

A.1

3/4.3.4 RECIRCULATION PUMP TRIP ACTUATION INSTRUMENTATION

ATWS RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

LCO 3.3.4.2

3.3.4.1 The anticipated transient without scram recirculation pump trip (ATWS-RPT) system instrumentation channels shown in Table 3.3.4.1-1 shall be OPERABLE ~~with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.4.1-2.~~ LA.1

APPLICABILITY: OPERATIONAL CONDITION 1.

ACTION: Add proposed ACTIONS Note A.2

ACTIONS A, B and C

a. With an ATWS recirculation pump trip system instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.4.1-2, declare the channel inoperable ~~until the channel is restored to OPERABLE status with its trip setpoint adjusted consistent with the Trip Setpoint value.~~ LA.1

Add proposed Required Action A.1 A.3

ACTION A

b. With the number of OPERABLE channels one less than required by the Minimum OPERABLE Channels per Trip System requirement for one or both trip systems, place the inoperable channel(s) in the tripped condition within ~~24 hours~~ 14 days Add proposed Note to Required Action A.2 M.1 LB.1

Condition A

c. With the number of OPERABLE channels two or more less than required by the Minimum OPERABLE Channels per Trip System requirement for one trip system and: Add proposed Note to Required Action A.2 M.1

Required Action A.2

1. If the inoperable channels consist of one reactor vessel water level channel and one reactor vessel pressure channel, place both inoperable channels in the tripped condition within ~~24 hours~~ 14 days LB.1, or, if this action will initiate a pump trip, declare the trip system inoperable.

Required Action A.1

2. If the inoperable channels include two reactor vessel water level channels or two reactor vessel pressure channels, declare the trip system inoperable. L.1

L.2

ACTION B, ACTION D

d. With one trip ~~system~~ function inoperable, restore the inoperable trip ~~system~~ to OPERABLE status within 72 hours or be in at least STARTUP within the next 6 hours. Add proposed Required Action D.1 L.3

ACTION C, ACTION D

e. With both trip ~~systems~~ function inoperable, restore at least one trip ~~system~~ to OPERABLE status within 1 hour or be in at least STARTUP within the next 6 hours. L.2 Add proposed Required Action D.1

SURVEILLANCE REQUIREMENTS

SRs 3.3.4.2.1, 3.3.4.2.2, 3.3.4.2.3

4.3.4.1.1 Each ATWS recirculation pump trip system instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3.4.1-1.

SR 3.3.4.2.4

4.3.4.1.2 LOGIC SYSTEM FUNCTIONAL TESTS and simulated automatic operation of all channels shall be performed at least once per ~~18~~ 24 months. A.4 LD.1

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A.1

TABLE 3.3.4.1-1

ATWS RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION

	TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM[a]
LCO 3.3.4.2.a	1. Reactor Vessel Water Level - Low Low, Level 2	2
LCO 3.3.4.2.b	2. Reactor Vessel Pressure - High	2

Note to Surveillance Requirements

(a) One channel in one trip system may be placed in an inoperable status for up to 6 hours for required surveillance provided that all other channels are OPERABLE.

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Specification 3.3.4.2

A.1

TABLE 3.3.4.1-2

ATWS RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION SETPOINTS

TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
LCO 3.3.4.2.a 1. Reactor Vessel, Water Level - Low Low, Level 2	~~≥ -50 inches*~~	SR 3.3.4.2.3 ≥ -57 inches*
LCO 3.3.4.2.b 2. Reactor Vessel Pressure-High	~~≤ 1135 psig~~	SR 3.3.4.2.3 ≤ 1150 psig

~~* See Bases Figure B3/4 3-1.~~ A.5

A.5 LA.1 LF.1 A.6

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Specification 3.3.4.2

A.1 TABLE 4.3.4.1-1

ATWS RECIRCULATION PUMP TRIP ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

	TRIP FUNCTION	SR 3.3.4.2.1 CHANNEL CHECK	SR 3.3.4.2.2 CHANNEL FUNCTIONAL TEST	SR 3.3.4.2.3 CHANNEL CALIBRATION
LCO 3.3.4.2.a	1. Reactor Vessel Water Level - Low Low, Level 2	S	Q	R 24 months
LCO 3.3.4.2.b	2. Reactor Vessel Pressure - High	S	Q	R

LE.1

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Specification 3.3.4.2

A.1 Specification 3.3.4.2

3/4.3.4 RECIRCULATION PUMP TRIP ACTUATION INSTRUMENTATION

ATWS RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

LCO 3.3.4.2 3.3.4.1 The anticipated transient without scram recirculation pump trip (ATWS-RPT) system instrumentation channels shown in Table 3.3.4.1-1 shall be OPERABLE ~~with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.4.1-2.~~ LA.1

APPLICABILITY: OPERATIONAL CONDITION 1.

ACTION: Add proposed ACTIONS Note A.2

ACTIONS A, B, and C a. With an ATWS recirculation pump trip system instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.4.1-2, declare the channel inoperable until the channel is restored to OPERABLE status ~~with its trip setpoint adjusted consistent with the Trip Setpoint value.~~ LA.1

ACTION A b. With the number of OPERABLE ~~channels one less than required by the Minimum OPERABLE~~ Channels per Trip System requirement for one or both trip systems, Add proposed Required Action A.1 A.3 place the inoperable channel(s) in the tripped condition within ~~24 hours~~ 14 days. Add proposed Note to Required Action A.2 LB.1

Condition A c. With the number of OPERABLE channels two or more less than required by the Minimum OPERABLE Channels per Trip System requirement for one trip system and: Add proposed Note to Required Action A.2 M.1

Required Action A.2 1. If the inoperable channels consist of one reactor vessel water level channel and one reactor vessel pressure channel, place both inoperable channels in the tripped condition within ~~24 hours~~ 14 days LB.1, ~~or, if this action will initiate a pump trip, declare the trip system inoperable.~~

Required Action A.1 2. If the inoperable channels include two reactor vessel water level channels or two reactor vessel pressure channels, ~~declare the trip system inoperable.~~ L.1

ACTION B d. With one trip ~~system~~ function inoperable, restore the inoperable trip ~~system~~ to OPERABLE status within 72 hours ~~or~~, L.2

ACTION D be in at least STARTUP within the next 6 hours. Add proposed Required Action D.1 L.3

ACTION C e. With both trip ~~systems~~ function L.2 inoperable, restore at least one trip ~~system~~ to OPERABLE status within 1 hour ~~or~~,

ACTION D be in at least STARTUP within the next 6 hours. Add proposed Required Action D.1 L.3

SURVEILLANCE REQUIREMENTS

SRs 3.3.4.2.1, 3.3.4.2.2, 3.3.4.2.3 4.3.4.1.1 Each ATWS recirculation pump trip system instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3.4.1-1.

SR 3.3.4.2.4 4.3.4.1.2 LOGIC SYSTEM FUNCTIONAL TESTS and ~~simulated automatic operation~~ A.4 of all channels shall be performed at least once per ~~18~~ 24 months. LD.1

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A1

TABLE 3.3.4.1-1

ATWS RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION

	TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM [(a)]
LCO 3.3.4.2.a	1. Reactor Vessel Water Level - Low Low, Level 2	2
LCO 3.3.4.2.b	2. Reactor Vessel Pressure-High	2

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Specification 3.3.4.2

Note to Surveillance Requirements

(a) One channel in one trip system may be placed in an inoperable status for up to 6 hours for required surveillance provided that all other channels are OPERABLE.

A.1

TABLE 3.3.4.1-2

ATWS RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION SETPOINTS

TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
LCO 3.3.4.2.a 1. Reactor Vessel, Water Level - Low Low, Level 2	~~≥- 50 inches*~~	SR 3.3.4.2.3 ≥- 57 inches*
LCO 3.3.4.2.b 2. Reactor Vessel Pressure-High	~~≤ 1135 psig~~	SR 3.3.4.2.3 ≤ 1150 psig

A.5 LF.1 A.5 LA.1

~~* See Bases Figure B3/4 3-1.~~ A.5

A.1

TABLE 4.3.4.1-1

ATWS RECIRCULATION PUMP TRIP ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

	TRIP FUNCTION	SR 3.3.4.2.1 CHANNEL CHECK	SR 3.3.4.2.2 CHANNEL FUNCTIONAL TEST	SR 3.3.4.2.3 CHANNEL CALIBRATION
LCO 3.3.4.2.a	1. Reactor Vessel Water Level - Low Low, Level 2	S	Q	~~R~~ 24 months LE.1
LCO 3.3.4.2.b	2. Reactor Vessel Pressure - High	S	Q	~~R~~

Specification 3.3.4.2

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ADMINISTRATIVE

A.1 In the conversion of the LaSalle 1 and 2 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1434, Rev. 1 (i.e., the Improved Standard Technical Specifications (ISTS)).

A.2 This proposed change to the CTS 3.3.4.1 Actions provides more explicit instructions for proper application of the Actions for Technical Specification compliance. In conjunction with the proposed Specification 1.3, "Completion Times," the ITS 3.3.4.2 ACTIONS Note ("Separate Condition entry is allowed for each....") provides direction consistent with the intent of the existing Actions for an inoperable ATWS-RPT instrumentation channel. It is intended that each inoperable channel is allowed a certain time to complete the Required Actions. Since this change only provides more explicit direction of the current interpretation of the existing specifications, this change is considered administrative.

A.3 CTS 3.3.4.1 Action b requires placing the inoperable channels in trip within the required Completion Time. ITS 3.3.4.2 Required Action A.1 has been added to provide an option to restore the channel to Operable status in lieu of tripping the channel. Since restoring the channel is always an option (as described in CTS 3.0.2 and ITS 3.0.2), the addition of this Required Action is administrative.

A.4 CTS 4.3.4.1.2 requires performance of "simulated automatic operation." Verification of the simulated automatic operation is normally conducted with the system functional test. However, for the ATWS-RPT System the only automatic operation required is opening of the recirculation pump trip breakers. Since no separate system functional test is specified, the opening of these breakers is specifically identified and included with the LOGIC SYSTEM FUNCTIONAL TEST of proposed SR 3.3.4.2.4. Since this is only a change in the presentation, this change is considered administrative.

A.5 CTS Table 3.3.4.1-2 footnote * refers to Bases Figure B 3/4.3-1. This Figure is providing information as to what reactor vessel water level the various reactor water level instruments actuate, in comparison to one another. This information is already essentially contained in the Allowable Value column of this Table. Therefore, this reference is being deleted and is considered administrative.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 If the channels are inoperable due to a trip breaker that will not open, placing the channels in the tripped condition, as required by CTS 3.3.4.1 Actions b and c.1, will not accomplish the intended restoration of the functional capability. Therefore, a Note is added to ITS 3.3.4.2 Required Action A.2 to prevent proposed Required Action A.2 from being used in these conditions. This new Note will ensure the functional capability of the ATWS-RPT is restored (by restoring the inoperable channel) within the allowed Completion Time when a trip breaker is inoperable and is more restrictive on plant operation.

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

LA.1 CTS 3.3.4.1 requires the Trip Setpoints to be set consistent with the values shown in the Trip Setpoint column of Table 3.3.4.1-2. CTS 3.3.4.1 Action a requires inoperable channels to be restored to OPERABLE status with trip setpoints adjusted consistent with the Trip Setpoint values. Trip Setpoints are operational details that are not directly related to the OPERABILITY of the instrumentation. These details are to be relocated to the Technical Requirements Manual (TRM) and the references to these setpoints in CTS 3.3.4.1 are deleted. The Allowable Value is the required limitation for the associated Function and this value is retained in the Technical Specifications. These relocated Trip Setpoints are not required to be in the Technical Specifications to provide adequate protection of the public health and safety. The TRM will be incorporated into the LaSalle 1 and 2 UFSAR at ITS implementation. Any changes to the relocated Trip Setpoints in the TRM will be controlled by the provisions of 10 CFR 50.59.

LB.1 The allowed out of service time for CTS 3.3.4.1 Actions b and c.1 is extended from 24 hours to 14 days in ITS 3.3.4.2 Required Action A.2. Both ATWS trip functions are still capable of tripping both recirculation pumps while in this condition. This allowed out of service time has been shown to maintain an acceptable risk in accordance with previously conducted reliability analysis (GENE-770-06-1-A, December 1992). The logic design of ATWS-RPT instrumentation is bounded by this reliability analysis and the conclusions of the analysis are applicable to the LaSalle 1 and 2 design. The results of the NRC review of this generic analysis as it relates to LaSalle 1 and 2 is documented in the NRC Safety Evaluation Report (SER) dated August 2, 1995. The SER concluded that the generic reliability analysis is applicable to LaSalle 1 and 2, and that LaSalle 1 and 2 meets all requirements of the NRC SER accepting the generic reliability analysis.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

LD.1 The Frequency for performing the LOGIC SYSTEM FUNCTIONAL TEST of CTS 4.3.4.1.2 (proposed SR 3.3.4.2.4) has been extended from 18 months to 24 months. This SR ensures that ATWS-RPT System will function as designed to ensure proper response during an analyzed event. The proposed change will allow this Surveillance to extend the Surveillance Frequency from the current 18 month Surveillance Frequency (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2) to a 24 month Surveillance Frequency (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2). This proposed change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical maintenance and surveillance data have shown that this test normally passes the Surveillance at the current Frequency. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. Extending the SR interval for this function is acceptable because the ATWS-RPT logic is tested every 92 days by the Channel Functional Test in CTS 4.3.4.1.1 (proposed SR 3.3.4.2.2). This testing of the ATWS-RPT System ensures that a significant portion of the circuitry is operating properly and will detect significant failures of this circuitry. The ATWS-RPT System including the actuating logic is designed to be single failure proof and therefore, is highly reliable.

Based on the above discussion, the impact, if any, of this change on system availability is minimal. This historical review of the surveillance test history demonstrates that there are no failures that would invalidate the conclusion that the impact, if any, on system availability is small from a change to a 24 month operating cycle. In addition, the proposed 24 month Surveillance Frequency, if performed at the maximum interval allowed by proposed SR 3.0.2 (30 months) does not invalidate any assumptions in the plant licensing basis.

Furthermore, as stated in the NRC Safety Evaluation Report (dated August 2, 1993) relating to extension of the Peach Bottom Atomic Power Station, Unit Numbers 2 and 3 surveillance intervals from 18 to 24 months:

TECHNICAL CHANGES - LESS RESTRICTIVE

LD.1 (cont'd) "Industry reliability studies for boiling water reactors (BWRs), prepared by the BWR Owners Group (NEDC-30936P) show that the overall safety systems' reliabilities are not dominated by the reliabilities of the logic system, but by that of the mechanical components, (e.g., pumps and valves), which are consequently tested on a more frequent basis. Since the probability of a relay or contact failure is small relative to the probability of mechanical component failure, increasing the Logic System Functional Test interval represents no significant change in the overall safety system unavailability."

Based on the above discussion, the impact, if any, of this change on system availability is minimal.

LE.1 The Frequency for performing the CHANNEL CALIBRATION Surveillance of CTS 4.3.4.1.1 and Table 4.3.4.1-1 Trip Functions 1 and 2 (proposed SR 3.3.4.2.3) has been extended to 24 months. The proposed change will allow this Surveillance to extend its Surveillance Frequency to a 24 month Surveillance Frequency (i.e., a maximum of 30 months accounting for the allowable grace period specified in proposed SR 3.0.2). This proposed change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. The CHANNEL CALIBRATION Surveillance is performed to ensure that a previously evaluated setpoint actuation takes place to provide the required safety function. Extending the SR Frequency is acceptable because the ATWS-RPT initiation logic is designed to be single failure proof, and therefore, is highly reliable. Furthermore, the impacted ATWS-RPT instrumentation has been evaluated based on make, manufacturer and model number to determine that the instrumentation's actual drift falls within the design allowance in the associated setpoint calculation. The following paragraph, listed by CTS Trip Function, identifies by make, manufacturer and model number the drift evaluation performed:

Trip Function 1, Reactor Vessel Water Level - Low Low, Level 2 (currently 18 months)

This function is performed by Rosemount 1153DB5 Transmitters and GE 184C5988G132 Trip Units. The Rosemount Transmitters' and GE trip units' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

TECHNICAL CHANGES - LESS RESTRICTIVE

LE.1 (cont'd) Based on the design of the instrumentation and the drift evaluations, it is concluded that the impact, if any, on system availability is minimal as a result of the change in the surveillance test interval.

Trip Function 2, Reactor Vessel Pressure - High (currently 92 days)

This function is performed by Rosemount 1153GB9 Transmitters and Rosemount 710DU Trip Units. The Rosemount Transmitters' and trip units' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Based on the design of the instrumentation and the drift evaluations, it is concluded that the impact, if any, on system availability is minimal as a result of the change in the surveillance test interval.

A review of the surveillance test history was performed to validate the above conclusion. This review of the surveillance test history, demonstrates that there are no failures that would invalidate the conclusion that the impact, if any on system availability is minimal from a change to a 24-month surveillance frequency. In addition, the proposed 24-month Surveillance Frequency, if performed at the maximum interval allowed by proposed SR 3.0.2 (30 months) does not invalidate any assumptions in the plant licensing basis.

LF.1 This change revises the Current Technical Specifications (CTS) Allowable Values to the Improved Technical Specifications (ITS) Allowable Values. ITS Section 3.3 reflects Allowable Values consistent with the philosophy of BWR ISTS, NUREG-1434, Rev. 1. These Allowable Values have been established consistent with the methods described in ComEd's Instrument Setpoint Methodology (Nuclear Engineering Standard NES-EIC-20.04, "Analysis of Instrument Channel Setpoint Error and Instrument Loop Accuracy"). For most cases, the Allowable Value determinations were calculated using plant specific operating and surveillance trend data or an allowance as provided for by the Instrument Setpoint Methodology. For all other cases, vendor documented performance specifications for drift were used. The Allowable Value verification used actual plant operating and surveillance trend information to ensure the validity of the developed Allowable Value. All changes to safety

TECHNICAL CHANGES - LESS RESTRICTIVE

LF.1 (cont'd) analysis limits applied in the methodologies were evaluated and confirmed as ensuring safety analysis licensing acceptance limits are maintained. All design limits applied in the methodologies were confirmed as ensuring that applicable design requirements of the associated systems and equipment are maintained. The methodologies used have been compared with the guidance of ANSI/ISA S67.04-Part I-1994 and ANSI/ISA RP67.04-Part II-1994. Plant calibration procedures will ensure that the assumptions regarding calibration accuracy, measurement and test equipment accuracy, and setting tolerance are maintained. Setpoints for each design or safety analysis limit have been established by accounting for the applicable instrument accuracy, calibration and drift uncertainties, environmental effects, power supply fluctuations, as well as uncertainties related to process and primary element measurement accuracy using the Instrument Setpoint Methodology. The Allowable Values have been established from each design or safety analysis limit by combining the errors associated with channel/instrument calibration (e.g., device accuracy, setting tolerance, and drift) with the calculated Nominal Trip Setpoint also using the Instrument Setpoint Methodology.

Additionally, each applicable channel/instrument has been evaluated and analyzed to support a fuel cycle extension to a 24 month interval. These evaluations and analyses have been performed utilizing the guidance provided in EPRI TR-103335, "Guidelines for Instrument Calibration Extension/Reduction Programs, Revision 1. The EPRI guidance was used to demonstrate that the data collected by the operating plant (from surveillance testing) has remained acceptable and reasonable with regard to the manufacturers design specifications.

Use of the previously discussed methodologies for determining AllowableValues, instrument setpoints, and analyzing channel/instrument performance ensure that the design basis and associated safety limits will not be exceeded during plant operation. These evaluations, determinations, and analyses now form a portion of the plants design bases.

"Specific"

L.1 CTS 3.3.4.1 Action c.1 requires the associated Trip System to be declared inoperable when one reactor vessel water level channel and one reactor vessel pressure channel in the same Trip System are inoperable and when placing them in the tripped condition would result in a recirculation pump trip. CTS 3.3.4.1 Action c.2 requires the associated Trip System to be declared inoperable when

TECHNICAL CHANGES - LESS RESTRICTIVE

L.1 (cont'd) two reactor vessel water level channels or two reactor vessel pressure channels in the same Trip System are inoperable. CTS 3.3.4.1 Action d then requires restoration of the Trip System within 72 hours. ITS 3.3.4.2 Required Action A.1 addresses only channels and will require the inoperable channels be restored to operable status. ITS also provides an option to place inoperable channels in the tripped condition, however this would result in a trip of both pumps and is not a practical option when both channels of a function are inoperable in the same trip system. ITS also allows for restoration of a single channel (rather than the entire trip system) and allows for continued operation with one restored and one in trip. This is less restrictive change but acceptable since the actions conservatively compensate for the inoperable status, restores the single failure capability and provides the required initiation capability of the instrumentation. Therefore, providing this option does not impact safety.

L.2 CTS 3.3.4.1 Action d requires that when one Trip System is inoperable, 72 hours are provided to restore the Trip System. CTS 3.3.4.1 Action e requires that when both Trip Systems are inoperable, 1 hour is provided to restore one Trip System. As described in CTS 3.3.4.1 Action c.2, a Trip System is inoperable when two channels of the same Function (i.e., reactor vessel water level or reactor vessel pressure) are inoperable in the Trip System. ITS 3.3.4.2 ACTIONS B and C address trip Function capability, not Trip System capability. A trip Function is maintained when sufficient channels are Operable or in trip, such that the ATWS-RPT System will generate a trip signal from the given Function on a valid signal and both recirculation pumps can be tripped. This requires two channels of the Function, in the same trip system, to each be Operable or in trip. The following is a description of the manner in which the ITS is applied, relative to the CTS.

a) When a single Trip System is inoperable under the CTS requirements, either due to two inoperable reactor vessel water level channels or two inoperable reactor vessel pressure channels, or both, the ITS will not have an inoperable Function. Therefore, ITS ACTION A would apply, which allows 14 days to restore channels. This is consistent with the CTS Action b and Action c.1 time, after the change described in Discussion of Change LB.1 above. While in this condition, the ATWS-RPT System is still capable of tripping both recirculation pumps on either Function. In addition, two similar channels inoperable is functionally equivalent to one channel inoperable (which the CTS allows in Action b); the Trip System will not provide a trip signal from (cont'd) the given Function.

TECHNICAL CHANGES - LESS RESTRICTIVE

L.2 (cont'd)

b) When both Trip Systems are inoperable under the CTS requirements due to two channels of the same Function being inoperable in both Trip Systems, 1 hour is allowed by CTS 3.3.4.1 Action e to restore one of the Trip Systems (by restoring the channels in the Trip System). In the ITS, when two channels of the same Function are inoperable in both trip systems, one Function will be inoperable. Therefore, ITS ACTION B would apply, which allows 72 hours to restore the inoperable channels. This is acceptable since while in this condition, the ATWS-RPT System is still capable of tripping both recirculation pumps on the other Function and operator action can still be taken to trip the recirculation pumps during this beyond design basis event.

c) When both Trip Systems are inoperable under the CTS requirements due to two channels of one Function being inoperable in one Trip System and two channels of the other Function being inoperable in the other Trip System, the ITS will not have an inoperable Function. Therefore, ITS ACTION A would apply, which allows 14 days to restore channels. The CTS requires the channels in one Trip System to be restored within 1 hour. This is acceptable since while in this condition, the ATWS-RPT System is still capable of tripping both recirculation pumps on either Function. In addition, when one channel is inoperable, the associated Function (either Reactor Vessel Pressure-High or Reactor Vessel Water Level-Low Low, Level 2) cannot actuate the Trip System from that function, since both channels of a Function must trip to actuate the Trip System (i.e., each Trip System is a two-out-of-two logic for each Function). This condition is covered by CTS 3.3.4.1 Action b. When two channels of the same Function are inoperable in a Trip System, this condition is functionally equivalent to that covered by CTS 3.3.4.1 Action b (i.e., one channel inoperable). That is, with both channels of the same Function inoperable in a Trip System, the associated Function cannot actuate the Trip System, identical to the results when one channel is inoperable in a Trip System.

d) When both Trip Systems are inoperable under the CTS requirements due to all channels of both Functions inoperable in both Trip Systems, the ITS will have two inoperable Functions. Therefore, ITS ACTION C would apply, which allows 1 hour to restore channels. This is consistent with the CTS Action e time.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

L.3 CTS 3.3.4.1 Actions d and e require the unit to be placed in Startup (Mode 2) within 6 hours if the ATWS-RPT instrumentation is not restored within the allowed out-of-service times. The purpose of the ATWS-RPT instrumentation is to trip the recirculation pumps. Therefore, an additional Required Action is proposed, ITS 3.3.4.2 Required Action D.1, to allow removal of the associated recirculation pump from service in lieu of being in MODE 2 within 6 hours. Since this action accomplishes the functional purpose of the ATWS-RPT instrumentation and enables continued operation in a previously approved condition, this change does not have a significant effect on safe operation.

RELOCATED SPECIFICATIONS

None

A.11

3/4.3.3 EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

ITS 3.3.5.1

LIMITING CONDITION FOR OPERATION

LCO 3.3.5.1

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

LA.1

A.2 moved to ITS 3.5.1 and 3.5.2

APPLICABILITY: As shown in Table 3.3.3-1.

A.3 add proposed ACTIONS Note

ACTION:

ACTION A

a. With an ECCS actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.3-2, declare the channel inoperable until the channel is restored to OPERABLE status ~~with its trip setpoint adjusted consistent with the Trip Setpoint value~~. LA.1

ACTION A

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

ACTIONS E and F

c. With either ADS trip system "A" or "B" inoperable, restore the inoperable trip system to OPERABLE status within: place channel in trip or L.1

1. 7 days, provided that the HPCS and RCIC systems are OPERABLE.

2. 72 hours.

ACTION G

Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and reduce reactor steam dome pressure to less than or equal to 122 psig within the following 24 hours. A.4

150 L.2

SURVEILLANCE REQUIREMENTS

Note 1 to Surveillance Requirements

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

LA.2

SR 3.3.5.1.5

4.3.3.2 LOGIC SYSTEM FUNCTIONAL TESTS ~~and simulated automatic operation~~ of all channels shall be performed at least once per ~~18~~ 24 months. LD.1

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

A.2 moved to ITS 3.5.1 and 3.5.2

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Table 3.3.5.1-1

TABLE 3.3.3-1

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

FUNCTION TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION[a]	APPLICABLE OPERATIONAL CONDITIONS	ACTION
A. DIVISION I TRIP SYSTEM LA.3			
1. 1. RHR-A (LPCI MODE) & LPCS SYSTEM			
a. a. Reactor Vessel Water Level - Low Low Low, Level 1	2[b]	1, 2, 3, 4*, 5*	30 B
b. b. Drywell Pressure - High	2[b]	1, 2, 3	30 B
e. c. LPCS Pump Discharge Flow-Low (Bypass)	1	1, 2, 3, 4*, 5*	31 D
g. d. LPCS and LPCI A Injection Valve Injection Line Pressure-Low (Permissive)	1/valve	1, 2, 3 4*, 5*	32 C 33 B
d. e. LPCS and LPCI A Injection Valve Reactor Pressure-Low (Permissive)	2	1, 2, 3 4*, 5*	38 D 33 B A.1
c f. LPCI Pump A Start Time Delay Relay	1	1, 2, 3, 4*, 5*	32 C
f g. LPCI Pump A Discharge Flow-Low (Bypass)	1	1, 2, 3, 4*, 5*	31 D
h h. Manual Initiation	1/division LA.3	1, 2, 3, 4*, 5*	34 C
4 2. AUTOMATIC DEPRESSURIZATION SYSTEM TRIP SYSTEM "A"[#] Note (c) to Table 3.3.5.1-1			
a. a. Reactor Vessel Water Level - Low Low Low, Level 1 coincident with LA.3	2[b]	1, 2, 3	30 E
b. b. Drywell Pressure - High	2[b]	1, 2, 3	30 E
c. c. Initiation Timer	1	1, 2, 3	32 F
d. d. Reactor Vessel Water Level - Low, Level 3 (Permissive)	1	1, 2, 3	32 E
e. e. LPCS Pump Discharge Pressure-High (Permissive)	2	1, 2, 3	32 F
f. f. LPCI Pump A Discharge Pressure-High (Permissive)	2	1, 2, 3	32 F
h. g. Manual Initiation	M.6 2 ~~1/division~~ LA.3	1, 2, 3	34 F
g. h. Drywell Pressure Bypass Timer	M.1 2 ~~1~~	1, 2, 3	32 F
~~i. Manual Inhibit~~	~~1/division~~	~~1, 2, 3~~	~~34~~ R.1

Table 3.3.5.1-1

TABLE 3.3.3-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

FUNCTION TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION[(a)]	APPLICABLE OPERATIONAL CONDITION	ACTION
B. ~~DIVISION 2 TRIP SYSTEM~~ LA.3			
2 1. RHR B & C (LPCI MODE)			
a, a. Reactor Vessel Water Level - Low, Low Low, Level 1	2[(b)]	1, 2, 3, 4*, 5*	30 B
b, b. Drywell Pressure - High	2[(b)]	1, 2, 3	30 B
f. c. LPCI B and C Injection Valve Injection Line Pressure-Low (Permissive)	1/valve	1, 2, 3 4*, 5*	32 D 33 B
c, d. LPCI Pump B Start Time Delay Relay	1	1, 2, 3, 4*, 5*	32 C
e, e. LPCI Pump Discharge Flow - Low (Bypass)	1/pump	1, 2, 3, 4*, 5*	31 D
g, f. Manual Initiation	1/~~division~~ LA.3	1, 2, 3, 4*, 5*	34 C
d, g. LPCI B and C Injection Valve Reactor Pressure-Low (Permissive)	2	1, 2, 3 4*, 5*	38 D 33 B
5 2. AUTOMATIC DEPRESSURIZATION SYSTEM TRIP SYSTEM "B" (1) — Note (c) to Table 3.3.5.1-1			A.1
a, a. Reactor Vessel Water Level - Low Low Low, Level 1 coincident with	2[(b)]	1, 2, 3	30 E
b, b. Drywell Pressure - High	2[(b)]	1, 2, 3	30 E
c, c. Initiation Timer	1	1, 2, 3	32 F
d, d. Reactor Vessel Water Level - Low, Level 3 (Permissive)	1	1, 2, 3	32 E
e, e. LPCI Pump B and C Discharge Pressure - High (Permissive)	(2) M.6 2/pump	1, 2, 3	32 F
g, f. Manual Initiation	M.1 (2) ~~1~~ 2 ~~/division~~ LA.3	1, 2, 3	34 F
f, g. Drywell Pressure Bypass Timer	~~1~~ 2	1, 2, 3	32 F
~~h. Manual Inhibit~~	~~1/division~~	~~1, 2, 3~~	~~34~~ R.1

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Table 3.3.5.1-1

TABLE 3.3.3-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

Function

TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION[a]	APPLICABLE OPERATIONAL CONDITION	ACTION
C. ~~DIVISION 3 TRIP SYSTEM~~ LA.3			
3 1. HPCS SYSTEM			
a. a. Reactor Vessel Water Level - Low, Low, Level 2	4[b]	1, 2, 3, 4*, 5*	35 B
b. b. Drywell Pressure - High	4[b]	1, 2, 3	35 B
c. c. Reactor Vessel Water Level-High, Level 8	2(f) LA.3	1, 2, 3, 4*, 5*	32 C
~~d. Deleted~~			
~~e. Deleted~~			
d f. Pump Discharge Pressure-High (Bypass)	1 LA.3	1, 2, 3, 4*, 5*	31 D
e g. HPCS System Flow Rate-Low (Permissive)	1	1, 2, 3, 4*, 5*	31 D
f h. Manual Initiation	1/~~division~~	1, 2, 3, 4*, 5*	34 C

D. LOSS OF POWER	TOTAL NO. OF INSTRUMENTS	INSTRUMENTS TO TRIP	MINIMUM OPERABLE INSTRUMENTS[d]	APPLICABLE OPERATIONAL CONDITIONS	ACTION
1. 4.16 kv Emergency Bus Undervoltage (Loss of Voltage)	2/bus	2/bus	2/bus	1, 2, 3, 4**, 5**	37
2. 4.16 kv Emergency Bus Undervoltage (Degraded Voltage)	2/bus	2/bus	2/bus	1, 2, 3, 4**, 5**	37

A.6 moved to ITS 3.3.8.1

Note 2 to Surveillance Requirements
(a) A channel instrument may be placed in an inoperable status for up to 6 hours during periods of required surveillance without placing the trip system/channel/instrument in the tripped condition provided at least one other OPERABLE channel/instrument in the same trip system is monitoring that parameter. LB.1

Note (b) to Table 3.3.5.1-1
(b) Also actuates the associated division diesel generator.

(c) ~~Provides signal to close HPCS pump discharge valve only on 2-out-of-2 logic.~~ LA.3

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

Note (a) to Table 3.3.5.1-1
* Applicable when the system is required to be OPERABLE per Specification 3.5.2 or 3.5.3.

** ~~Required when ESF equipment is required to be OPERABLE.~~

Note (c) to Table 3.3.5.1-1
\# Not required to be OPERABLE when reactor steam dome pressure is ≤ ~~122~~ 150 psig. L.2

A.6 moved to ITS 3.3.8.1

A.1

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EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION
ACTION

ACTION 30 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement:

ACTIONS B and E

a. With one channel inoperable, place the inoperable channel in the tripped condition within 24 hours or declare the associated system inoperable. A.7

ACTION G

add proposed Required Action B.1, B.3, E.1 and E.2

b. With more than one channel inoperable, declare the associated system inoperable. A.7 L.3

add proposed Required Action D.1 M.2

ACTION 31 - With the number of OPERABLE channels less than required by the Minimum OPERABLE channels per Trip Function requirement, ~~place the inoperable channel in the tripped condition within 24 hours,~~ restore the inoperable channel to OPERABLE status within 7 days or declare the associated system inoperable. L.6

ACTION D

ACTION G

M.2 add proposed Required Action C.1, E.1, F.1

ACTION 32 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, declare the associated ADS trip system or ECCS inoperable within 24 hours. A.7 L.1 for ADS Level 3 permissive

ACTIONS C, E, and F

ACTION 33 - With the number of OPERABLE channels less than the Minimum OPERABLE Channels per Trip Function requirement, place the inoperable channel in the tripped condition within 24 hours.

ACTION B

ACTION 34 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, restore the inoperable channel to OPERABLE status within 24 hours or declare the associated ADS trip system or ECCS inoperable. A.7

ACTIONS C and F

ACTION 35 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement A.8

ACTION B

add proposed Required Action B.2

channel

a. For ~~one trip system~~ place ~~that trip system~~ in the tripped condition within 24 hours or declare the HPCS system inoperable.

add proposed Required Action B.2 and B.3

b. ~~For both trip systems, declare the HPCS system inoperable.~~ L.3

~~ACTION 36 - Deleted~~

ACTION 37 - With the number of OPERABLE instruments less than the Minimum Operable Instruments, place the inoperable instrument(s) in the tripped condition within 1 hour or declare the associated emergency diesel generator inoperable and take the ACTION required by Specification 3.8.1.1 or 3.8.1.2 as appropriate.

A.6 moved to ITS 3.3.8.1

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

ITS 3.3.5.1

ACTION

add proposed Required Action D.1

M.2

ACTION 38 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per trip function requirements:

ACTION D

a. With one channel inoperable, ~~remove the inoperable channel within 24 hours,~~ restore the inoperable channel to OPERABLE status within 7 days ~~or declare the associated ECCS systems inoperable~~.

L.4

b. With both channels inoperable, restore at least one channel to OPERABLE status within ~~one hour~~ ~~or declare the associated ECCS systems inoperable~~.

ACTION G

24 hours

LB.2

Table 3.3.5.1-1

TABLE 3.3.3-2

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION SETPOINTS

LF.1

M.4 add upper limit

LA.1

LA.3

FUNCTION TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
A. DIVISION 1 TRIP SYSTEM		
1. RHR-A (LPCI MODE) AND LPCS SYSTEM		
a. a. Reactor Vessel Water Level - Low Low Low, Level 1	≥- 129 inches*	≥- 136 inches*
b. b. Drywell Pressure - High	≤ 1.69 psig	≤ 1.89 psig
e. c. LPCS Pump Discharge Flow-Low	≥ 750 gpm	≥ 640 gpm
g. d. LPCS and LPCI A Injection Valve Injection Line-Low Pressure Interlock	500 psig	500 ± 20 psig
d. e. LPCS and LPCI A Injection Valve Reactor Pressure-Low Pressure Interlock	500 psig	500 ± 20 psig
c. f. LPCI Pump A Start Time Delay Relay	≤ 5 seconds	≤ 6 seconds
f. g. LPCI Pump A Discharge Flow-Low	≥ 1000 gpm	≥ 550 gpm
h. h. Manual Initiation	NA	NA
2. AUTOMATIC DEPRESSURIZATION SYSTEM TRIP SYSTEM "A"		
a. a. Reactor Vessel Water Level - Low Low Low, Level 1	≥- 129 inches*	≥- 136 inches*
b. b. Drywell Pressure - High	≤ 1.69 psig	≤ 1.89 psig
c. c. Initiation Timer	≤ 105 seconds	≤ 117 seconds
d. d. Reactor Vessel Water Level-Low, Level 3	≥ 12.5 inches*	≥ 11 inches*
e. e. LPCS Pump Discharge Pressure-High	≥ 146 psig, increasing	≥ 136 psig, increasing
f. f. LPCI Pump A Discharge Pressure-High	≥ 119 psig, increasing	≥ 106 psig, increasing
h. g. Manual Initiation	NA	NA
g. h. Drywell Pressure Bypass Timer	≤ 9.0 minutes	Footnote (a)
i. Manual Inhibit	NA	NA

M.4 add lower limit

add upper limit M.4

add upper limit M.4

R.1

(a) The sum of the time delays associated with the ADS initiation timer and the drywell pressure bypass time shall be less than or equal to 687 seconds.

M.5 add explicit limit

LA SALLE - UNIT 1

3/4 3-28 4

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ITS 3.3.5.1

Table 3.3.5.1-1

TABLE 3.3.3-2 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION SETPOINTS

FUNCTION TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
B. DIVISION 2 TRIP SYSTEM LA.3	LA.1	LF.1
2 1. RHR B AND C (LPCI MODE)		
a. a. Reactor Vessel Water Level - Low Low Low, Level 1	≥- 129 inches*	≥- 136 inches*
b. b. Drywell Pressure - High	≤ 1.69 psig	≤ 1.89 psig
f. c. LPCI B and C Injection Valve Injection Line-Low Pressure Interlock	500 psig	500 psig ±20 psig
c. d. LPCI Pump B Start Time Delay Relay	≤ 5 seconds	≤ 6 seconds
e. e. LPCI Pump Discharge Flow-Low	≥ 1000 gpm	≥ 550 gpm
g. f. Manual Initiation	NA	NA
d. g. LPCI B and C Injection Valve Reactor Pressure Low Pressure Interlock	500 psig	500 ± 20 psig
5 2. AUTOMATIC DEPRESSURIZATION SYSTEM TRIP SYSTEM "B"		
a. a. Reactor Vessel Water Level - Low Low Low, Level 1	≥- 129 inches*	≥- 136 inches*
b. b. Drywell Pressure - High	≤ 1.69 psig	≤ 1.89 psig
c. c. Initiation Timer	≤ 105 seconds	≤ 117 seconds
d. d. Reactor Vessel Water Level-Low, Level 3	≥ 12.5 inches*	≥ 11 inches*
e. e. LPCI Pump B and C Discharge Pressure-High	≥ 119 psig, increasing	≥ 106 psig, ~~increasing~~
g. f. Manual Initiation	NA	NA
f. g. Drywell Pressure Bypass Timer	≤ 9.0 minutes	~~Footnote (a)~~
~~h. Manual Inhibit~~	~~NA~~	~~NA~~

M.4 add lower limit

add upper limit M 4

M.4 add upper limit

add explicit limit

R.1

~~(a) The sum of the time delays associated with the ADS initiation timer and the drywell pressure bypass time shall be less than or equal to 687 seconds.~~ M.5

Table 3.3.5.1-1

TABLE 3.3.3-2 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION SETPOINTS

LA SALLE - UNIT 1 3

LF.1

Function TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
C. DIVISION 3 TRIP SYSTEM [LA.3]	[LA.1]	
3 1. HPCS SYSTEM		
a. a. Reactor Vessel Water Level - Low Low, Level 2	≥- 50 inches*	≥- 57 inches*
b. b. Drywell Pressure - High	≤ 1.69 psig	≤ 1.89 psig
c. c. Reactor Vessel Water Level - High, Level 8	≤ 55.5 inches*	≤ 56 inches*
~~d. Deleted~~		
~~e. Deleted~~		
d. f. Pump Discharge Pressure - High	≥ 120 psig	≥ 110 psig
e. g. HPCS System Flow Rate - Low	≥ 1000 gpm	≥ 900 gpm (add upper limit) [M.4]
f. h. Manual Intiation	NA	NA
D. LOSS OF POWER		
1. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage)#		
a. 4.16 kV Buses	[A.6] moved to ITS 3.3.8.1	
1) Divisions 1 and 2	2625 ± 131 volts with ≤ 10 seconds time delay	2625 ± 262 volts with ≤ 11 seconds time delay
	2496 ± 125 volts with ≥ 4 seconds time delay	2496 ± 250 volts with ≥ 3 seconds time delay
2) Division 3	2870 ± 143 volts with ≤ 10 seconds time delay	2870 ± 287 volts with ≤ 11 seconds time delay

*See Bases Figure B 3/4 3-1. [A.10]

#These are inverse time delay voltage relays or instantaneous voltage relays with a time delay. The voltages shown are the maximum that will not result in a trip. Lower voltage conditions will result in decreased trip times.

[A.6] moved to ITS 3.3.8.1

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TABLE 3.3.3-2 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION SETPOINTS

TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
2. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)		
a. 4.16 kV Buses		
1) Divisions 1, 2 and 3	≥3863 and ≤3877 volts with 10 ± 1 seconds time delay with LOCA signal or 5 ± 0.5 minutes time delay without LOCA signal	≥3814 and ≤3900 volts with 10 ± 1 seconds time delay with LOCA signal or 5 ± 0.5 minutes time delay without LOCA signal

A6 Moved to ITS 3.3.8.1

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ITS 3.3.5.1

TABLE 3.3.3-3

EMERGENCY CORE COOLING SYSTEM RESPONSE TIMES

ECCS	RESPONSE TIME (Seconds)
1. LOW PRESSURE CORE SPRAY SYSTEM	$\leq 60^{*,\#}$
2. LOW PRESSURE COOLANT INJECTION MODE OF RHR SYSTEM (Pumps A, B, and C)	$\leq 60^{*,\#}$
3. AUTOMATIC DEPRESSURIZATION SYSTEM	NA
4. HIGH PRESSURE CORE SPRAY SYSTEM	$\leq 41^{\#}$
5. LOSS OF POWER	NA

*Injection valves shall be fully OPEN within 40 seconds after receipt of the reactor vessel pressure and ECCS Injection Line Pressure Interlock signal concurrently with power source availability and receipt of an accident initiation signal.

#ECCS actuation instrumentation is eliminated from response time testing.

A.2 moved to ITS 3.5.1 and 3.5.2

Table 3.3.5.1-1

TABLE 4.3.3.1-1

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTION TRIP FUNCTION	SR 3.3.5.1.1 CHANNEL CHECK	SR 3.3.5.1.2 CHANNEL FUNCTIONAL TEST	SR 3.3.5.1.3 SR 3.3.5.1.4 CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
A. DIVISION I TRIP SYSTEM LA.3			24 months LE.1	
1 1. RHR-A (LPCI MODE) AND LPCS SYSTEM				
a. a. Reactor Vessel Water Level - Low Low Low, Level 1	S	Q	4-R	1, 2, 3, 4*, 5*
b b. Drywell Pressure - High	NA	Q	4-Q	1, 2, 3
e. c. LPCS Pump Discharge Flow-Low	NA	Q	Q-3	1, 2, 3, 4*, 5*
g. d. LPCS and LPCI A Injection Valve Injection Line Pressure Low Interlock	NA	Q	4-R	1, 2, 3, 4*, 5*
d. e. LPCS and LPCI A Injection Valve Reactor Pressure Low Interlock	NA	Q	4-R	1, 2, 3, 4*, 5*
c. f. LPCI Pump A Start Time Delay Relay	NA	Q	Q-3	1, 2, 3, 4*, 5*
f. g. LPCI Pump A Flow-Low	NA	Q	Q-3	1, 2, 3, 4*, 5*
h. h. Manual Initiation	NA	LD.1 R A.9	NA	1, 2, 3, 4*, 5*
4 2. AUTOMATIC DEPRESSURIZATION SYSTEM TRIP SYSTEM "A"#				
a. a. Reactor Vessel Water Level - Low Low Low, Level 1	S	Q	4-R	1, 2, 3
b. b. Drywell Pressure-High	NA	Q	4-Q	1, 2, 3
c. c. Initiation Timer	NA	Q	Q-3	1, 2, 3
d. d. Reactor Vessel Water Level - Low, Level 3	S	Q	4-R	1, 2, 3
e. e. LPCS Pump Discharge Pressure-High	NA	Q	4-Q	1, 2, 3
f. f. LPCI Pump A Discharge Pressure-High	NA	Q	4-Q	1, 2, 3
h. g. Manual Initiation	NA	LD.1 R A.9	NA	1, 2, 3
g. h. Drywell Pressure Bypass Timer	NA	Q	Q-3	1, 2, 3
~~i. Manual Inhibit~~	~~NA~~	~~R~~	~~NA~~	~~1, 2, 3~~ R.1

A.1

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Table 3.3.5.1-1

TABLE 4.3.3.1-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

	FUNCTION TRIP FUNCTION LA.3	SR 3.3.5.1.1 CHANNEL CHECK	SR 3.3.5.1.2 CHANNEL FUNCTIONAL TEST	SR 3.3.5.1.3 SR 3.3.5.1.4 CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
	B. DIVISION 2 TRIP SYSTEM			24 months LE.1	
2	1. RHR B AND C (LPCI MODE)				
a.	a. Reactor Vessel Water Level - Low Low Low, Level 1	S	Q	4-R	1, 2, 3, 4*, 5*
b.	b. Drywell Pressure - High	NA	Q	4-R	1, 2, 3
f.	c. LPCI B and C Injection Valve Injection Line Pressure Low Interlock	NA	Q	4-R	1, 2, 3, 4*, 5*
c.	d. LPCI Pump B Start Time Delay Relay	NA	Q	Q-3	1, 2, 3, 4*, 5*
e.	e. LPCI Pump Discharge Flow-Low	NA	Q	Q-3	1, 2, 3, 4*, 5*
g.	f. Manual Initiation	NA	LD.1 R A.9	NA	1, 2, 3, 4*, 5*
d	g. LPCI B and C Injection Valve Reactor Pressure Low Interlock	NA	Q	4-R	1, 2, 3, 4*, 5*
5	2. AUTOMATIC DEPRESSURIZATION SYSTEM TRIP SYSTEM "B"#				
a.	a. Reactor Vessel Water Level - Low Low Low, Level 1	S	Q	4-R	1, 2, 3
b.	b. Drywell Pressure-High	NA	Q	4-R	1, 2, 3
c.	c. Initiation Timer	NA	Q	Q-3	1, 2, 3
d.	d. Reactor Vessel Water Level - Low, Level 3	S	Q	4-R	1, 2, 3
e.	e. LPCI Pump B and C Discharge Pressure-High	NA	Q	4-R	1, 2, 3
g.	f. Manual Initiation	NA	LD.1 R A.9	NA	1, 2, 3
f.	h. Drywell Pressure Bypass Timer	NA	Q	Q-3	1, 2, 3
	i. Manual Inhibit	NA	R	NA	1, 2, 3 R.1

A.1

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Table 3.3.5.1-1

TABLE 4.3.3.1-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

LA.3 24 months LE.1

FUNCTION TRIP FUNCTION	SR 3.3.5.1.1 CHANNEL CHECK	SR 3.3.5.1.2 CHANNEL FUNCTIONAL TEST	SR 3.3.5.1.3 SR 3.3.5.1.4 CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
C. DIVISION 3 TRIP SYSTEM				
3 1. HPCS SYSTEM				
a. a. Reactor Vessel Water Level - Low Low, Level 2	S	Q	4 - R	1, 2, 3, 4*, 5*
b. b. Drywell Pressure-High	NA	Q	4 - Q	1, 2, 3
c. c. Reactor Vessel Water Level-High Level 8	S	Q	4 - R	1, 2, 3, 4*, 5*
~~d. Deleted~~				
~~e. Deleted~~				
d. f. Pump Discharge Pressure-High	NA	Q	4 - Q	1, 2, 3, 4*, 5*
e. g. HPCS System Flow Rate-Low	NA	Q	3 - Q	1, 2, 3, 4*, 5*
f. h. Manual Initiation	NA	LD.1 R A.9	NA	1, 2, 3, 4*, 5*
D. LOSS OF POWER				
1. 4.16 kV Emergency Bus Under-voltage (Loss of Voltage)	NA	NA	R	1, 2, 3, 4**, 5**
2. 4.16 kV Emergency Bus Under-voltage (Degraded Voltage)	NA	NA	R	1, 2, 3, 4**, 5**

A.1

A.6 moved to ITS 3.3.8.1

Note (a) to Table 3.3.5.1-1

Note (c) to Table 3.3.5.1-1

150 L.2

Not required to be OPERABLE when reactor steam dome pressure is less than or equal to 122 psig.

* When the system is required to be OPERABLE after being manually realigned, as applicable, per Specification 3.5.2.

** Required when ESF equipment is required to be OPERABLE.

A.6 moved to ITS 3.3.8.1

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ITS 3.3.5.1

REACTOR COOLANT SYSTEM

3/4.4.2 SAFETY/RELIEF VALVES

LIMITING CONDITION FOR OPERATION

3.4.2 The safety valve function of 17 of the below listed 18 reactor coolant system safety/relief valves shall be OPERABLE with the specified code safety valve function lift setting*#; all installed valves shall be closed with OPERABLE position indication.

a. 4 safety/relief valves @1205 psig ±3%
b. 4 safety/relief valves @1195 psig ±3%
c. 4 safety/relief valves @1185 psig ±3%
d. 4 safety/relief valves @1175 psig ±3%
e. 2 safety/relief valves @1150 psig ±3%

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

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

b. With one or more of the above required safety/relief valve stem position indicators inoperable, restore the inoperable stem position indicators 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.

SURVEILLANCE REQUIREMENTS

4.4.2.1 The safety/relief valve stem position indicators of each safety/relief valve shall be demonstrated OPERABLE by performance of a:

a. CHANNEL CHECK at least once per 31 days, and a
b. CHANNEL CALIBRATION at least once per 18 months.**

~~4.4.2.2 The low-low set function shall be demonstrated not to interfere with the OPERABILITY of the safety/relief valves or the ADS by performance of a CHANNEL CALIBRATION at least once per 18 months.~~ L.5

*The lift setting pressure shall correspond to ambient conditions of the valves at nominal operating temperatures and pressures. Following testing, lift settings shall be within ±1%.
#Up to two inoperable valves may be replaced with spare OPERABLE valves with lower setpoints until the next refueling outage.
**The provisions of Specification 4.0.4 are not applicable provided the surveillance is performed within 12 hours after reactor steam pressure is adequate to perform the test.

<See ITS 3.4.4>

A.1

INSTRUMENTATION

3/4.3.3 EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

LA.1

LCO 3.5.1 3.3.3 The emergency core cooling system (ECCS) actuation instrumentation channels shown in Table 3.3.3-1 shall be OPERABLE ~~with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.3-2~~ ~~and with EMERGENCY CORE COOLING SYSTEM RESPONSE TIME as shown in Table 3.3.3-3.~~

A.2 moved to ITS 3.5.1 and 3.5.2

APPLICABILITY: As shown in Table 3.3.3-1. add proposed ACTIONS Note A.3

ACTION:

ACTION A a. With an ECCS actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.3-2, declare the channel inoperable until the channel is restored to OPERABLE status ~~with its trip setpoint adjusted consistent with the Trip Setpoint value.~~ LA.1

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

ACTIONS E and F c. With either ADS trip system "A" or "B" inoperable, place channel in trip or restore the inoperable trip system to OPERABLE status within:

1. 7 days, provided that the HPCS and RCIC systems are OPERABLE.

2. 72 hours.

ACTION G Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and reduce reactor steam dome pressure to less than or equal to 122 150 psig within the following 24 hours. A.4 L.2

SURVEILLANCE REQUIREMENTS

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

LA.2

SR 3.3.5.1.5 4.3.3.2 LOGIC SYSTEM FUNCTIONAL TESTS ~~and simulated automatic operation~~ of all channels shall be performed at least once per ~~18~~ 24 months. LD.1

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

A.2 moved to ITS 3.5.1 and 3.5.2

Table 3.3.5.1-1

TABLE 3.3.3-1

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

Function TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION[a]	APPLICABLE OPERATIONAL CONDITIONS	ACTION
A. DIVISION I TRIP SYSTEM LA.3			
1, 1. RHR-A (LPCI MODE) & LPCS SYSTEM			
a. a. Reactor Vessel Water Level - Low Low Low, Level 1	2[b]	1, 2, 3, 4*, 5*	30 B
b. b. Drywell Pressure - High	2[b]	1, 2, 3	30 B
e. c. LPCS Pump Discharge Flow-Low (Bypass)	1	1, 2, 3, 4*, 5*	31 D
g. d. LPCS and LPCI A Injection Valve Injection Line Pressure-Low (Permissive)	1/Valve	1, 2, 3 4*, 5*	32 C 33 B
d. e. LPCS and LPCI A Injection Valve Reactor Pressure-Low (Permissive)	2	1, 2, 3 4*, 5*	38 D 33 B
c. f. LPCI Pump A Start Time Delay Relay	1	1, 2, 3, 4*, 5*	32 C
f. g. LPCI Pump A Discharge Flow-Low (Bypass)	1	1, 2, 3, 4*, 5*	31 D
h h. Manual Initiation	1/division LA.3	1, 2, 3, 4*, 5*	34 C
4 2. AUTOMATIC DEPRESSURIZATION SYSTEM TRIP SYSTEM "A"# ① Note (c) to Table 3.3.5.1-1			
a. a. Reactor Vessel Water Level - Low Low Low, Level 1 coincident with LA.3	2[b]	1, 2, 3	30 E
b. b. Drywell Pressure - High	2[b]	1, 2, 3	30 E
c. c. Initiation Timer	1	1, 2, 3	32 F
d. d. Reactor Vessel Water Level - Low, Level 3 (Permissive)	1	1, 2, 3	32 E
e. e. LPCS Pump Discharge Pressure-High (Permissive)	2	1, 2, 3	32 F
f. f. LPCI Pump A Discharge Pressure-High (Permissive)	2	1, 2, 3	32 F
h. g. Manual Initiation	M.6 ② ~~1~~/division LA.3	1, 2, 3	34 F
g. h. Drywell Pressure Bypass Timer	M.1 ② ~~1~~	1, 2, 3	32 F
~~i. Manual Inhibit~~	~~1/division~~	~~1, 2, 3~~	~~34~~ R.1

A.1

ITS 3.3.5.1

LA SALLE - UNIT 2

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Table 3.3.5.1-1

TABLE 3.3.3-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

Function TRIP FUNCTION		MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION(a)	APPLICABLE OPERATIONAL CONDITIONS	ACTION
B. DIVISION 2 TRIP SYSTEM	LA.3			
2. 1. RHR B & C (LPCI MODE)				
a. a. Reactor Vessel Water Level - Low, Low Low, Level 1		2(b)	1, 2, 3, 4*, 5*	30 B
b. b. Drywell Pressure - High		2(b)	1, 2, 3	30 B
f. c. LPCI B and C Injection Valve Injection Line Pressure-Low (Permissive)		1/valve	1, 2, 3 4*, 5*	32 C 33 B
c. d. LPCI Pump B Start Time Delay Relay		1	1, 2, 3, 4*, 5*	32 C
e. e. LPCI Pump Discharge Flow - Low (Bypass)		1/pump	1, 2, 3, 4*, 5*	31 D
g. f. Manual Initiation	LA.3	1/division	1, 2, 3, 4*, 5*	34 C
d. g. LPCI B and C Injection Valve Reactor Pressure-Low (Permissive)		2	1, 2, 3, 4*, 5*	38 D 33 B
5 2. AUTOMATIC DEPRESSURIZATION SYSTEM TRIP SYSTEM "B"#	Note (c) to Table 3.3.5.1-1			
a. a. Reactor Vessel Water Level - Low Low Low, Level 1 coincident with		2(b)	1, 2, 3	30 E
b. b. Drywell Pressure - High		2(b)	1, 2, 3	30 E
c. c. Initiation Timer		1	1, 2, 3	32 F
d. d. Reactor Vessel Water Level - Low, Level 3 (Permissive)		1	1, 2, 3	32 E
e. e. LPCI Pump B and C Discharge Pressure - High (Permissive)		2/pump	1, 2, 3	32 F
g. f. Manual Initiation	M.6 2; LA.3	2 1/division	1, 2, 3	34 F
f. g. Drywell Pressure Bypass Timer	M.1 2	1	1, 2, 3	32 F
h. ~~Manual Inhibit~~		~~1/division~~	~~1, 2, 3~~	~~34~~

R.1

A.1

ITS 3.3.5.1

Table 3.3.5.1-1

TABLE 3.3.3-1 (Continued)
EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

Function TRIP FUNCTION		MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION[(a)]	APPLICABLE OPERATIONAL CONDITIONS	ACTION
~~C. DIVISION 3 TRIP SYSTEM~~ LA.3				
3 1.	HPCS SYSTEM			
a. a.	Reactor Vessel Water Level - Low, Low, Level 2	4(b)	1, 2, 3, 4*, 5*	35 B
b. b.	Drywell Pressure - High	4(b)	1, 2, 3	35 B
c. c.	Reactor Vessel Water Level-High, Level 8	2(c) LA.3	1, 2, 3, 4*, 5*	32 C
~~d.~~	~~Deleted~~			
~~e.~~	~~Deleted~~			
d. f.	Pump Discharge Pressure-High (Bypass)	1	1, 2, 3, 4*, 5*	31 D
e. g.	HPCS System Flow Rate-Low (Permissive)	1 LA.3	1, 2, 3, 4*, 5*	31 D
f. h.	Manual Initiation	1/division	1, 2, 3, 4*, 5*	34 C

D. LOSS OF POWER

	TOTAL NO. OF INSTRUMENTS	INSTRUMENTS TO TRIP	MINIMUM OPERABLE INSTRUMENTS(d)	APPLICABLE OPERATIONAL CONDITIONS	ACTION
1. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage)	2/bus	2/bus	2/bus	1, 2, 3, 4**, 5**	37
2. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)	2/bus	2/bus	2/bus	1, 2, 3, 4**, 5**	37

A.6 moved to ITS 3.3.8.1

A.1

TABLE NOTATION

Note 2 to Surveillance Requirements (a) A channel/instrument may be placed in an inoperable status for up to 6 hours during periods of required surveillance without placing the trip system/channel/instrument in the tripped condition provided at least one other OPERABLE channel/instrument in the same trip system is monitoring that parameter. LB.1

Note (b) to Table 3.3.5.1-1 (b) Also actuates the associated division diesel generator.

(c) Provides signal to close HPCS pump discharge valve only on 2-out-of-2 logic. LA.3

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

Note (a) to Table 3.3.5.1-1 * Applicable when the system is required to be OPERABLE per Specification 3.5.2 or 3.5.3.

** Required when ESF equipment is required to be OPERABLE.

Note (c) to Table 3.3.5.1-1 # Not required to be OPERABLE when reactor steam dome pressure is ≤ 122 psig. 150 L.2

A.6 moved to ITS 3.3.8.1

ITS 3.3.5.1

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TABLE 3.3.3-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

ACTION

ACTIONS B and E

ACTION 30 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement:

a. With one channel inoperable, place the inoperable channel in the tripped condition within 24 hours or declare the associated system inoperable. A.7

ACTION G

add proposed Required Action B.1, B.3, E.1 and E.2

b. With more than one channel inoperable, declare the associated system inoperable. A.7 L.3

add proposed Required Action D.1 M.1

ACTION D

ACTION 31 - With the number of OPERABLE channels less than required by the Minimum OPERABLE channels per Trip Function requirement, place the inoperable channel in the tripped condition within 24 hours, restore the inoperable channel to OPERABLE status within 7 days or declare the associated system inoperable. L.6

ACTION G

M.2 add proposed Required Action C.1, E.1, F.1

ACTIONS C, E, and F

ACTION 32 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, declare the associated ADS trip system or ECCS inoperable within 24 hours. A.7 L.1 for ADS Level 3 permissive

ACTION B

ACTION 33 - With the number of OPERABLE channels less than the Minimum OPERABLE Channels per Trip Function requirement, place the inoperable channel in the tripped condition within 24 hours.

ACTIONS C and F

ACTION 34 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, restore the inoperable channel to OPERABLE status within 24 hours or declare the associated ADS trip system or ECCS inoperable. A.7

ACTION B

ACTION 35 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement: A.8

add proposed Required Action B.2

a. For one trip system, place that trip system channel in the tripped condition within 24 hours or declare the HPCS system inoperable.

add proposed Required Action B.2 and B.3

b. For both trip systems, declare the HPCS system inoperable. L.3

~~ACTION 36 - Deleted~~

ACTION 37 - With the number of OPERABLE instruments less than the Minimum Operable Instruments, place the inoperable instrument(s) in the tripped condition within 1 hour or declare the associated emergency diesel generator inoperable and take the ACTION required by Specification 3.8.1.1 or 3.8.1.2 as appropriate.

A.6 moved to ITS 3.3.8.1

TABLE 3.3.3-1 (Continued)

M.2

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

ACTION

add proposed Required Action D.1

ACTION 38 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement: L.4

ACTION D

a. With one channel inoperable, ~~remove the inoperable channel within 24 hours;~~ restore the inoperable channel to OPERABLE status within 7 days or declare the associated ECCS systems inoperable.

b. With both channels inoperable, restore at least one channel to OPERABLE status within ~~one hour~~ 24 hours or declare the associated ECCS system inoperable.

ACTION G

LB.2

Table 3.3.5.1-1

TABLE 3.3.3-2

LF.1

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION SETPOINTS

FUNCTION

LA.1 LA.3 M.4 A.1 R.1

TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
A. DIVISION 1 TRIP SYSTEM		
1. RHR-A (LPCI MODE) AND LPCS SYSTEM		
a. a. Reactor Vessel Water Level - Low Low Low, Level 1	≥ 129 inches*	≥ 136 inches*
b. b. Drywell Pressure - High	≤ 1.69 psig	≤ 1.89 psig
e c. LPCS Pump Discharge Flow-Low	≥ 750 gpm	≥ 640 gpm (add upper limit)
g d. LPCS and LPCI A Injection Valve Injection Line-Low Pressure Interlock	500 psig	500 ± 20 psig
d e. LPCS and LPCI A Injection Valve Reactor Pressure-Low Pressure Interlock	500 psig	500 ± 20 psig (add lower limit)
c. f. LPCI Pump A Start Time Delay Relay	≤ 5 seconds	≤ 6 seconds
f. g. LPCI Pump A Discharge Flow-Low	≥ 1000 gpm	≥ 550 gpm (add upper limit)
h h. Manual Initiation	N.A.	N.A.
4 **2. AUTOMATIC DEPRESSURIZATION SYSTEM TRIP SYSTEM "A"**		
a. a. Reactor Vessel Water Level - Low Low Low, Level 1	≥ 129 inches*	≥ 136 inches*
b b. Drywell Pressure - High	≤ 1.69 psig	≤ 1.89 psig
c. c. Initiation Timer	≤ 105 seconds	≤ 117 seconds
d. d. Reactor Vessel Water Level-Low, Level 3	≥ 12.5 inches*	≥ 11 inches*
e. e. LPCS Pump Discharge Pressure-High	≥ 146 psig, increasing	≥ 136 psig, increasing (add upper limits)
f. f. LPCI Pump A Discharge Pressure-High	≥ 119 psig, increasing	≥ 106 psig, increasing
h. g. Manual Initiation	N.A.	N.A.
g. h. Drywell Pressure Bypass Timer	≤ 9.0 minutes	Footnote (a)
~~i. Manual Inhibit~~	~~N.A.~~	~~N.A.~~

~~(a) The sum of the time delays associated with the ADS initiation timer and the drywell pressure bypass timer shall be less than or equal to 687 seconds.~~

M.5 add explicit limit

Table 3.3.5.1-1

TABLE 3.3.3-2 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION SETPOINTS

LA SALLE - UNIT 2

LA.1 LF.1 M.4 A.1

Function TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
B. DIVISION 2 TRIP SYSTEM LA.3		
2. 1. RHR B AND C (LPCI MODE)		
a. a. Reactor Vessel Water Level - Low Low Low, Level 1	>- 129 inches*	>- 136 inches*
b. b. Drywell Pressure - High	≤ 1.69 psig	≤ 1.89 psig
f. c. LPCI B and C Injection Valve Injection Line Low Pressure Interlock	500 psig	500 ± 20 psig
c. d. LPCI Pump B Start Time Delay Relay	< 5 seconds	< 6 seconds
e. e. LPCI Pump Discharge Flow-Low	≥ 1000 gpm	≥ 550 gpm
g. f. Manual Initiation	N.A.	N.A.
d. g. LPCI B and C Injection Valve Reactor Pressure-Low Pressure Interlock	500 psig	500 ± 20 psig
5. 2. AUTOMATIC DEPRESSURIZATION SYSTEM TRIP SYSTEM "B"		
a. a. Reactor Vessel Water Level - Low Low Low, Level 1	>- 129 inches*	>- 136 inches*
b. b. Drywell Pressure - High	≤ 1.69 psig	≤ 1.89 psig
c. c. Initiation Timer	≤ 105 seconds	≤ 117 seconds
d. d. Reactor Vessel Water Level-Low, Level 3	≥ 12.5 inches*	≥ 11 inches*
e. e. LPCI Pump B and C Discharge Pressure-High	≥ 119 psig, increasing	≥ 106 psig, ~~increasing~~
g. f. Manual Initiation	N.A.	N.A.
f. g. Drywell Pressure Bypass Timer	< 9.0 minutes	Footnote (a)
~~h. Manual Inhibit~~	~~N.A.~~	~~N.A.~~

add lower limit M.4

add upper limit M.4

add upper limit

add explicit limit

R.1

~~(a) The sum of the time delays associated with the ADS initiation timer and the drywell pressure bypass timer shall be less than or equal to 687 seconds.~~ M.5

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Table 3.3.5.1

TABLE 3.3.3-2 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION SETPOINTS

LF.1 LA.1 LA.3 M.4 A.6 A.1

Function TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
~~C. DIVISION 3 TRIP SYSTEM~~		
3 1. HPCS SYSTEM		
a. a. Reactor Vessel Water Level - Low Low, Level 2	~~≥ - 50 inches*~~	≥ - 57 inches*
b. b. Drywell Pressure - High	~~≤ 1.69 psig~~	≤ 1.89 psig
c. c. Reactor Vessel Water Level - High, Level 8	~~≤ 55.5 inches*~~	≤ 56 inches*
~~d. Deleted~~		
~~e. Deleted~~		
d. f. Pump Discharge Pressure - High	~~≥ 120 psig~~	≥ 110 psig
e. g. HPCS System Flow Rate - Low	~~≥ 1000 gpm~~	≥ 900 gpm
f. h. Manual Intiation	~~N.A.~~	N.A.
D. LOSS OF POWER		
1. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage)#		
a. 4.16 kV Buses		
1) Divisions 1 and 2	2625 ± 131 volts with ≤ 10 second time delay	2625 ± 262 volts with ≤ 11 second time delay
	2496 ± 125 volts with ≥ 4 second time delay	2496 ± 250 volts with ≥ 3 second time delay
2) Division 3	2870 ± 143 volts with ≤ 10 second time delay	2870 ± 287 volts with ≤ 11 second time delay

add upper limit

A.6 moved to ITS 3.3.8.1

TABLE NOTATIONS

A.10

*See Bases Figure B 3/4 3-1

#These are inverse time delay voltage relays or instantaneous voltage relays with a time delay. The voltages shown are the maximum that will not result in a trip. Lower voltage conditions will result in decreased trip times.

N.A. Not Applicable

A.6 moved to ITS 3.3.8.1

TABLE 3.3.3-2 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION SETPOINTS

TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
D. LOSS OF POWER (Continued)		
2. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)		
a. 4.16 kV Buses		
1) Divisions 1, 2 and 3	≥3863 and ≤3877 volts with 10 ± 1 seconds time delay with LOCA signal or 5 ± 0.5 minutes time delay without LOCA signal	≥3814 and ≤3900 volts with 10 ± 1 seconds time delay with LOCA signal or 5 ± 0.5 minutes time delay without LOCA signal

A4

Moved to ITS 3.3.8.1

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ITS 3.3.5.1

TABLE 3.3.3-3

EMERGENCY CORE COOLING SYSTEM RESPONSE TIMES

ECCS	RESPONSE TIME (Seconds)
1. LOW PRESSURE CORE SPRAY SYSTEM	$\leq 60^{*,\#}$
2. LOW PRESSURE COOLANT INJECTION MODE OF RHR SYSTEM (Pumps A, B, and C)	$\leq 60^{*,\#}$
3. AUTOMATIC DEPRESSURIZATION SYSTEM	NA
4. HIGH PRESSURE CORE SPRAY SYSTEM	$\leq 41^{\#}$
5. LOSS OF POWER	NA

A.2
moved to
ITS 3.5.1
and 3.5.2

*Injection valves shall be fully OPEN within 40 seconds after receipt of the reactor vessel pressure and ECCS Injection Line Pressure Interlock signal concurrently with power source availability and receipt of an accident initiation signal.
#ECCS actuation instrumentation is eliminated from response time testing.

Table 3.3.5.1-1

TABLE 4.3.3.1-1

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTION TRIP FUNCTION	SR 3.3.5.1.1 CHANNEL CHECK	SR 3.3.5.1.2 CHANNEL FUNCTIONAL TEST	SR 3.3.5.1.3 SR 3.3.5.1.4 CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
A. ~~DIVISION I TRIP SYSTEM~~ LA.3			24 months LE.1	
1 1. RHR-A (LPCI MODE) AND LPCS SYSTEM				
a. a. Reactor Vessel Water Level - Low Low Low, Level 1	S	Q	4-R	1, 2, 3, 4*, 5*
b. b. Drywell Pressure - High	NA	Q	4-R	1, 2, 3
e. c. LPCS Pump Discharge Flow-Low	NA	Q	Q-3	1, 2, 3, 4*, 5*
g. d. LPCS and LPCI A Injection Valve Injection Line Pressure Low Interlock	NA	Q	4-R	1, 2, 3, 4*, 5*
d. e. LPCS and LCPI A Injection Valve Reactor Pressure Low Interlock	NA	Q	4-R	1, 2, 3, 4*, 5*
c. f. LPCI Pump A Start Time Delay Relay	NA	Q	Q-3	1, 2, 3, 4*, 5*
f. g. LPCI Pump A Flow-Low	NA	Q	Q-3	1, 2, 3, 4*, 5*
h. h. Manual Initiation	NA	LD.1 R A.9	NA	1, 2, 3, 4*, 5*
4 2. AUTOMATIC DEPRESSURIZATION SYSTEM TRIP SYSTEM "A"#				
a. a. Reactor Vessel Water Level - Low Low Low, Level 1	S	Q	4-R	1, 2, 3
b. b. Drywell Pressure-High	NA	Q	4-R	1, 2, 3
c. c. Initiation Timer	NA	Q	Q-3	1, 2, 3
d. d. Reactor Vessel Water Level - Low, Level 3	S	Q	4-R	1, 2, 3
e. e. LPCS Pump Discharge Pressure-High	NA	Q	4-R	1, 2, 3
f. f. LPCI Pump A Discharge Pressure-High	NA	Q	4-R	1, 2, 3
h. g. Manual Initiation	NA	LD.1 R A.9	NA	1, 2, 3
g h. Drywell Pressure Bypass Timer	NA	Q	Q-3	1, 2, 3
i. Manual Inhibit	NA	R	NA	1, 2, 3 R.1

A.1

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Table 3.3.5.1-1

TABLE 3.3.1-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Function TRIP FUNCTION	SR 3.3.5.1.1 CHANNEL CHECK	SR 3.3.5.1.2 CHANNEL FUNCTIONAL TEST	SR 3.3.5.1.3 SR 3.3.5.1.4 CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
B. DIVISION 2 TRIP SYSTEM LA.3			LE.1 24 months	
2 1. RHR B AND C (LPCI MODE)				
a. a. Reactor Vessel Water Level - Low Low Low, Level 1	S	Q	R-4	1, 2, 3, 4*, 5*
b. b. Drywell Pressure - High	NA	Q	Q-4	1, 2, 3
f. c. LPCI B and C Injection Valve Injection Line Pressure Low Interlock	NA	Q	R-4	1, 2, 3, 4*, 5*
c. d. LPCI Pump B Start Time Delay Relay	NA	Q	Q-3	1, 2, 3, 4*, 5*
e. e. LPCI Pump Discharge Flow-Low	NA	Q	Q-3	1, 2, 3, 4*, 5*
g. f. Manual Initiation	NA	LD.1 R A.9	NA	1, 2, 3, 4*, 5*
d. g. LPCI B and C Injection Valve Reactor Pressure Low Interlock	NA	Q	R-4	1, 2, 3, 4*, 5*
5 2. AUTOMATIC DEPRESSURIZATION SYSTEM TRIP SYSTEM "B"#				
a. a. Reactor Vessel Water Level - Low Low Low, Level 1	S	Q	R-4	1, 2, 3
b. b. Drywell Pressure-High	NA	Q	Q-4	1, 2, 3
c. c. Initiation Timer	NA	Q	Q-3	1, 2, 3
d. d. Reactor Vessel Water Level - Low, Level 3	S	Q	R-4	1, 2, 3
e. e. LPCI Pump B and C Discharge Pressure-High	NA	Q	Q-4	1, 2, 3
g. f. Manual Initiation	NA	LD.1 R A.9	NA	1, 2, 3
f. g. Drywell Pressure Bypass Timer	NA	Q	Q-3	1, 2, 3
~~h. Manual Inhibit~~ R.1	~~NA~~	~~R~~	~~NA~~	~~1, 2, 3~~

A.1

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Table 3.3.5.1-1

TABLE 4.3.3.1-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	SR 3.3.5.1.1 CHANNEL CHECK	SR 3.3.5.1.2 CHANNEL FUNCTIONAL TEST	SR 3.3.5.1.3 SR 3.3.5.1.4 CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
C. DIVISION 3 TRIP SYSTEM (LA.3)			24 months (LE.1)	
3. 1. HPCS SYSTEM				
a. a. Reactor Vessel Water Level - Low Low, Level 2	S	Q	R -4	1, 2, 3, 4*, 5*
b. b. Drywell Pressure-High	NA	Q	Q -4	1, 2, 3
c. c. Reactor Vessel Water Level-High Level 8	S	Q	R -4	1, 2, 3, 4*, 5*
~~d. Deleted~~				
~~e. Deleted~~				
d. f. Pump Discharge Pressure-High	NA	Q	Q -4	1, 2, 3, 4*, 5*
e. g. HPCS System Flow Rate-Low	NA	Q	Q -3	1, 2, 3, 4*, 5*
f. h. Manual Initiation	NA	LD.1 R A.7	NA	1, 2, 3, 4*, 5*
D. LOSS OF POWER				
1. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage)	NA	NA	R	1, 2, 3, 4**, 5**
2. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)	NA	NA	R	1, 2, 3, 4**, 5**

A.6 moved to ITS 3.3.8.1

TABLE NOTATIONS

Note (c) to Table 3.3.5.1-1

Note (a) to Table 3.3.5.1-1

#Not required to be OPERABLE when reactor steam dome pressure is less than or equal to ~~122~~ 150 psig. L.2

*When the system is required to be OPERABLE after being manually realigned, as applicable, per Specification 3.5.2.

**Required when ESF equipment is required to be OPERABLE. A.6 moved to ITS 3.3.8.1

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ITS 3.3.5.1

REACTOR COOLANT SYSTEM

A.1

3/4.4.2 SAFETY/RELIEF VALVES

LIMITING CONDITION FOR OPERATION

3.4.2 The safety valve function of 12 of the below listed 13 reactor coolant system safety/relief valves shall be OPERABLE with the specified code safety valve function lift setting*#; all installed valves shall be closed with OPERABLE position indication.

a. 2 safety/relief valves @1205 psig ±3%
b. 3 safety/relief valves @1195 psig ±3%
c. 2 safety/relief valves @1185 psig ±3%
d. 4 safety/relief valves @1175 psig ±3%
e. 2 safety/relief valves @1150 psig ±3%

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

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

b. With one or more of the above required safety/relief valve stem position indicators inoperable, restore the inoperable stem position indicators 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.

SURVEILLANCE REQUIREMENTS

4.4.2.1 The safety/relief valve stem position indicators of each safety/relief valve shall be demonstrated OPERABLE by performance of a:

a. CHANNEL CHECK at least once per 31 days, and a
b. CHANNEL CALIBRATION at least once per 18 months.**

L.5

4.4.2.2 The low low set function shall be demonstrated not to interfere with the OPERABILITY of the safety/relief valves or the ADS by performance of a CHANNEL CALIBRATION at least once per 18 months.

*The lift setting pressure shall correspond to ambient conditions of the valves at nominal operating temperatures and pressures. Following testing, lift settings shall be within ±1%.
#Up to two inoperable valves may be replaced with spare OPERABLE valves with lower setpoints until the next refueling outage.
**The provisions of Specification 4.0.4 are not applicable provided the surveillance is performed within 12 hours after reactor steam pressure is adequate to perform the test.

<See ITS 3.4.4>

ADMINISTRATIVE

A.1 In the conversion of the LaSalle 1 and 2 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1434, Rev. 1 (i.e., the Improved Standard Technical Specifications (ISTS)).

A.2 The technical content of CTS 3.3.3, CTS 4.3.3.3, and Table 3.3.3-3 concerning ECCS response time testing is being moved to ITS 3.5.1, ECCS — Operating, and ITS 3.5.2, ECCS — Shutdown. Any technical changes to these requirements are addressed in the Discussion of Changes for ITS: 3.5.1 and ITS: 3.5.2, in Section 3.5.

A.3 This proposed change to the CTS 3.3.3 Actions provides more explicit instructions for proper application of the Actions for Technical Specification compliance. In conjunction with the proposed Specification 1.3, "Completion Times," the ITS 3.3.5.1 ACTIONS Note ("Separate Condition entry is allowed for each....") provides direction consistent with the intent of the existing Actions for an inoperable ECCS instrumentation channel. It is intended that each inoperable channel is allowed a certain time to complete the Required Actions. Since this change only provides more explicit direction of the current interpretation of the existing specifications, this change is considered administrative.

A.4 CTS 3.3.3 Action c (ITS 3.3.5.1 ACTION G) requires a shutdown if an ADS trip system is not restored within the applicable time. This current Action is consistent with the Action provided in CTS 3.5.1 when the ADS valves are inoperable. Therefore, ITS 3.3.5.1 ACTION G will require the ADS valves to be declared inoperable and to take the ACTION provided in the ADS Specification (ITS 3.5.1), in lieu of repeating the shutdown ACTIONS in the instrumentation Specification. This is consistent with the BWR ISTS, NUREG-1434, Rev. 1 and is considered administrative.

A.5 Not used.

ADMINISTRATIVE (continued)

A.6 The technical content of the requirements of CTS Tables 3.3.3-1, 3.3.3-2, and 4.3.3.1-1, Trip Functions D.1 and D.2, including CTS Table 3.3.3-1 Action 37 and footnotes (d) and **, CTS Table 3.3.3-2 footnote #, and CTS Table 4.3.3.1-1 footnote **, are being moved to ITS 3.3.8.1, "Loss of Power Instrumentation," in accordance with the format of the BWR ISTS, NUREG-1434, Rev. 1. Any technical changes to these requirements are addressed in the Discussion of Changes for ITS: 3.3.8.1, in this Section.

A.7 CTS Table 3.3.3-1 Actions 30, 32, and 34 require declaring the associated system or ADS Trip System inoperable when the time to restore the channel has expired (24 hours). When the restoration time provided in these Actions have expired for the ADS Functions, the associated ADS Trip System is declared inoperable, and the action provided in CTS 3.3.3 Action c is taken, since this Action provides the required actions when an ADS Trip System is inoperable. Action c provides 72 hours or 7 days to restore the ADS Trip System, depending upon whether or not both RCIC and HPCS systems are Operable, and when the restoration time expires, a shutdown is required. In ITS 3.3.5.1 ACTIONS E and F, the requirement to declare the associated system (i.e., ADS trip system) inoperable has been deleted. In its place, the total time to restore the channel has been provided. These four CTS Actions have essentially been combined into two proposed ACTIONS, depending upon whether or not the channel is allowed to be tripped (ITS 3.3.5.1 ACTIONS E and F, respectively). Since the total time to restore the channel/trip system has not changed, except as discussed in Discussion of Change L.3 below, this change is considered administrative.

A.8 CTS Table 3.3.3-1 ACTION 35 specifies requirements associated with the HPCS Reactor Vessel Water Level Function and Drywell Pressure Function channels on a trip system basis. The channels associated with these Functions are arranged in a one-out-of-two-taken twice logic. In this case, a trip system includes two channels. At least one channel must trip in each trip system for HPCS initiation. In CTS Table 3.3.3-1 ACTION 35, when one or more channels are inoperable in a trip system, action must be taken to place the trip system in the tripped condition within 24 hours. If one or more channels are inoperable in a trip system, ITS 3.3.5.1 Required Action B.3 requires placing the channel(s) in trip within 24 hours. Tripping a channel results in a trip of the associated trip system. Since this change simply represents a presentation preference the deletion of the term "trip system" from the CTS is considered administrative.

ADMINISTRATIVE (continued)

A.9 CTS Table 4.3.3.1-1 requires a CHANNEL FUNCTIONAL TEST (CFT) of Trip Functions A.1.h, A.2.g, B.1.g, B.2.g, and C.1.h, the Manual Initiation Functions, every 18 months. The logic is tested completely when the switches are tested; every 18 months. CTS 4.3.3.2 and proposed SR 3.3.5.1.5 require a LOGIC SYSTEM FUNCTIONAL TEST (LSFT) every 18 months (changed to 24 months - see Discussion of Change LD.1 below). Since the LSFT is a complete test of the logic, including the Manual Initiation switches, there is no need to require a CFT for these Functions. Therefore, ITS 3.3.5.1 only requires an LSFT, and this change is considered administrative.

A.10 The format of the LaSalle 1 and 2 ITS does not generally include providing "cross references" to the Bases. The existing reference in CTS Table 3.3.3-2 to the Bases Figure B 3/4.3-1 serves no functional purpose, and its removal is purely an administrative difference in presentation.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 CTS Table 3.3.3-2 Trip Function A.2.h and B.2.g, ADS Drywell Pressure Bypass Timer, requires one channel to be OPERABLE per Trip System. Since each Trip System includes two bypass timers, and since both bypass timers must function for each trip system to complete the appropriate logic, an additional channel has been added to the Table (proposed Table 3.3.5.1-1 Functions 4.g and 5.f). This is an additional restriction on plant operations, however necessary for proper operation of the logic.

M.2 CTS Table 3.3.3-1 Actions 31, 32, and 38 specify actions to be taken when channels are inoperable. The actions are on a Trip Function basis. This allows multiple channels to be inoperable for up to 24 hours with the safety function of the ECCS instrumentation not maintained (e.g., Action 31 allows all ECCS pumps minimum flow valve channels to be inoperable for up to 7 days). CTS Table 3.3.3-1 Action 35.a allows one or two channels of HPCS Reactor Vessel Water Level or Drywell Pressure channels (Functions C.1.a and C.1.b, respectively) in one trip system to be inoperable for 24 hours without declaring the system inoperable. With both channels inoperable in the same trip system, HPCS initiation capability is lost. Appropriate Required Actions have been added in ITS 3.3.5.1 Required Actions B.2, C.1, D.1, E.1, and F.1 for response to loss of the initiation capability of certain Functions for both divisions/trip systems.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.2 (cont'd) These additional requirements provides clear direction of the necessary Actions when in this condition. The Required Actions will only allow continued operations for 1 hour if a loss of initiation capability of a Function for both divisions/trip systems occurs. This will minimize the time the Function for both divisions/trip systems does not provide initiation capability, and is more restrictive on plant operation.

M.3 Not used.

M.4 The following additional Allowable Values have been added: a) A maximum Allowable Value for the LPCS, LPCI, and HPCS Pump Discharge Flow — Low (Bypass) (CTS Table 3.3.3-2 Trip Functions A.1.c, A.1.g, B.1.e, and C.1.g; ITS Table 3.3.5.1-1 Function 1.e, 1.f, 2.e, and 3.e), has been provided to ensure the valves will close to provide assumed ECCS flow to the core; and b) Maximum Allowable Values for the LPCS and RHR Pump Discharge Pressure—High (CTS Table 3.3.3-2 Trip Functions A.2.e, A.2.f, and B.2.e; ITS Table 3.3.5.1-1 Functions 4.e, 4.f, and 5.e) have been provided to ensure the setpoint is below the shutoff head of the low pressure ECCS pumps. The new Allowable Values are based upon the most recent setpoint calculations. These are additional restrictions on plant operation.

M.5 CTS Table 3.3.3-2 requires the Trip Setpoint of the Drywell Pressure Bypass Timer (Trip Function A.2.h and B.2.h) to be ≤ 9.0 minutes. However, the Allowable Value specified requires the sum of the time delays associated with the ADS initiation timer and the drywell pressure bypass timer to be less than or equal to 687 seconds. As explicit value has been included in the proposed Table 3.3.5.1-1 Allowable Value column for Functions 4.g and 5.f. Since the proposed combined value of the initiation timer and the drywell bypass timer is less than 687 seconds, the proposed Allowable Value is considered more restrictive on plant operations. The proposed Allowable Values will ensure the assumptions of design basis accidents can be met.

M.6 CTS Table 3.3.3-1 Trip Function A.2.g and B.2.f each require one manual channel to be OPERABLE for the ADS Manual Initiation Functions in each division. This has been increased from one to two for each division (or trip system) to ensure the Manual Initiation Function remains OPERABLE. The ADS Manual Initiation Function includes two push button channels (CTS Table 3.3.3-1 Trip Functions A.2.g and B.2.f) to actuate the two ADS trip strings in each trip system. Since this change actually adds the requirement to maintain an additional push button channel OPERABLE in each ADS trip system, this change is considered more restrictive, however necessary to ensure the ADS Manual Function is OPERABLE in each trip system.

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

LA.1 CTS 3.3.3 requires the Trip Setpoints to be consistent with the values shown in the Trip Setpoint column of Table 3.3.3-2. CTS 3.3.3 Action a requires inoperable channels to be restored to OPERABLE status with trip setpoints adjusted consistent with the Trip Setpoint values. Trip Setpoints are operational details that are not directly related to the OPERABILITY of the instrumentation. These details are to be relocated to the Technical Requirements Manual (TRM) and the references to these setpoints in CTS 3.3.3 are deleted. The Allowable Value is the required limitation for the associated Function and this value is retained in the Technical Specifications. These relocated Trip Setpoints are not required to be in the Technical Specifications to provide adequate protection of the public health and safety. The TRM will be incorporated into the LaSalle 1 and 2 UFSAR at ITS implementation. Any changes to the relocated Trip Setpoints in the TRM will be controlled by the provisions of 10 CFR 50.59.

LA.2 The detail in CTS 4.3.3.2 relating to methods (simulated automatic operation) for performing the LOGIC SYSTEM FUNCTIONAL TESTS is proposed to be relocated to the Bases. This detail is not necessary to ensure the OPERABILITY of the ECCS Instrumentation. The requirements of ITS 3.3.5.1 and proposed SR 3.3.5.1.5 are adequate to ensure the ECCS instruments are maintained OPERABLE. Therefore, the relocated detail is not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

LA.3 System design and operation details specified in CTS Table 3.3.3-1, including footnote (c), are proposed to be relocated to the Bases. Details relating to system design and operation (e.g., Trip System Nomenclature, specific equipment affected, etc.) are unnecessary in the LCO. These details are not necessary to ensure the OPERABILITY of the ECCS Instrumentation. The requirements of ITS 3.3.5.1 and the associated Surveillance Requirements are adequate to ensure the ECCS instruments are maintained OPERABLE. Therefore, the relocated details are not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

LB.1 CTS Table 3.3.3-1 footnote (a), which allows a delay in entering the associated Action statement, has been clarified to allow current Trip Functions C.1.c, C.1.f, C.1.g, and C.1.h (ITS Table 3.3.5.1-1 Functions 3.c, 3.d, 3.e, and 3.f,

TECHNICAL CHANGES - LESS RESTRICTIVE

LB.1 (cont'd) respectively) to be inoperable and delay entering the associated Actions for 6 hours, regardless of the remaining ECCS initiation capability of the Function. For these three Functions, loss of one channel results in a loss of HPCS initiation capability for the associated Function. This condition was evaluated in the reliability analysis of NEDC-30936-P-A, December 1988, and found to be acceptable. This analysis is the basis for the current 6 hour allowance in the Note. The results of the NRC review of this generic reliability analysis as it relates to LaSalle 1 and 2 is documented in the NRC Safety Evaluation Report (SER) dated August 2, 1995. The SER concluded that the generic reliability analysis is applicable to LaSalle 1 and 2 and that LaSalle 1 and 2 meets all requirements of the NRC SER accepting the generic reliability analysis.

LB.2 CTS Table 3.3.3-1 ACTION 38.b for LPCS and LPCI Injection Valve Reactor Pressure—Low (Permissive) (Function A.1.e and B.1.g) requires the two inoperable channels to be restored to OPERABLE status within one hour or to declare the associated ECCS systems inoperable. The allowed out-of-service time has been extended to 24 hours. This allowed out-of-service time has been shown to maintain an acceptable risk in accordance with a previously conducted reliability analysis (NEDC-30936-P-A, 1988). This analysis assumed the loss of one low pressure ECCS division for 24 hours and found it to be acceptable, since the other low pressure ECCS division was OPERABLE. ITS 3.3.5.1 Required Action D.1 will ensure the trip function for the other low pressure ECCS division is OPERABLE, and if not, then the associated ECCS subsystems will be required to be declared inoperable within 1 hour from discovery of the loss of initiation capability for the features in both divisions. The results of the NRC review of this generic reliability analysis as it relates to LaSalle 1 and 2 is documented in an NRC Safety Evaluation Report (SER) dated August 2, 1995. The SER concluded that the generic reliability analysis is applicable to LaSalle 1 and 2 and that LaSalle 1 and 2 meets all requirements of the NRC SER accepting the generic reliability analysis.

LD.1 The Frequency for performing the LOGIC SYSTEM FUNCTIONAL TEST (LSFT) of CTS 4.3.3.2 and the CHANNEL FUNCTIONAL TEST for the Manual Initiation Functions specified in CTS Table 4.3.3.1-1 (changed to LSFT in Discussion of Change A.9 above) has been extended from 18 months to 24 months in proposed SR 3.3.5.1.5. This SR ensures that ECCS logic will function as designed to ensure proper response during an analyzed event. The proposed change will allow these Surveillances to extend their Surveillance Frequency from the current 18 month Surveillance Frequency (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2) to a 24 month Surveillance Frequency (i.e., a maximum

TECHNICAL CHANGES - LESS RESTRICTIVE

LD.1 (cont'd) of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2). This proposed change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical maintenance and surveillance data have shown that these tests normally pass their Surveillances at the current Frequency. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. ECCS systems are tested on a more frequent basis during the operating cycle in accordance with CTS 4.3.3.1 (proposed SRs 3.3.5.1.1, 3.3.5.1.2, and 3.3.5.1.3). These SRs will ensure that a significant portion of the ECCS circuitry is operating properly and will detect significant failures of this circuitry. The ECCS network including the actuating logic is designed to be single failure proof and therefore, is highly reliable.

Based on the inherent system and component reliability and the testing performed during the operating cycle, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 24 month Surveillance Frequencies, if performed at the maximum interval allowed by proposed SR 3.0.2 (30 months) do not invalidate any assumptions in the plant licensing basis.

Furthermore, as stated in the NRC Safety Evaluation Report (dated August 2, 1993) relating to extension of the Peach Bottom Atomic Power Station, Unit Numbers 2 and 3 surveillance intervals from 18 to 24 months:

"Industry reliability studies for boiling water reactors (BWRs), prepared by the BWR Owners Group (NEDC-30936P) show that the overall safety systems' reliabilities are not dominated by the reliabilities of the logic system, but by that of the mechanical components, (e.g., pumps and valves), which are consequently tested on a more frequent basis. Since the probability of a relay or contact failure is small relative to the probability of mechanical component failure, increasing the Logic System Functional Test interval represents no significant change in the overall safety system unavailability."

Based on the above discussion, the impact, if any, of this change on system availability is minimal.

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LE.1 The Frequencies for performing CHANNEL CALIBRATIONS of CTS 4.3.3.1 and CTS Table 4.3.3.1-1 for Trip Functions A.1.a, A.1.b, A.1.d, A.1.e, B.1.a, B.1.b, B.1.c, B.1.g, A.2.a, A.2.b, A.2.d, A.2.e, A.2.f, , B.2.a, B.2.b, B.2.d, B.2.e, C.1.a, C.1.b, C.1.c, and C.1.f have been extended 24 months. The proposed change will allow these Surveillances to extend their Surveillance Frequency to a 24 month Surveillance Frequency (i.e., a maximum of 30 months accounting for the allowable grace period specified in proposed SR 3.0.2). This proposed change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991.

Extending the SR Frequency is acceptable because the ECCS network along with the ECCS initiation logic is designed to be single failure proof and therefore is highly reliable. Furthermore, the impacted ECCS instrumentation has been evaluated based on make, manufacturer and model number to determine that the instrumentation's actual drift falls within the design allowance in the associated setpoint calculation. The following paragraphs, listed by CTS Trip Function number, identify by make, manufacturer and model number the drift evaluations performed:

Trip Functions A.1.a, B.1.a: LPCS/LPCI Reactor Vessel Water Level - Low Low Low, Level 1 (currently 18 months)

This function is performed by Rosemount 1154DH5 Transmitters and 710DU Master Trip Units. The Rosemount transmitters' and trip units' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Trip Functions A.1.b, A.2.b, B.1.b, B.2.b, C.1.b: Drywell Pressure - High (currently 92 days)

This function is performed by Static-O-Ring 12N6-B4-NX-C1A-JTTX7 pressure switches. The Static-O-Ring pressure switches' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

TECHNICAL CHANGES - LESS RESTRICTIVE

LE.1 (cont'd)

Trip Functions A.1.d, B.1.c: LPCS/LPCI Injection Valve Injection Line Pressure Low Interlock (currently 18 months)

This function is performed by Static-O-Ring 5N6-E45-NX-C1A-TTX6 pressure switches. The Static-O-Ring pressure switches' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Trip Functions A.1.e, B.1.g: LPCS/LPCI Injection Valve Reactor Pressure Low Interlock (currently 18 months)

This function is performed by Static-O-Ring 5N6-E45-NX-C1A-TTX6 pressure switches. The Static-O-Ring pressure switches' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Trip Functions A.2.a, B.2.a: ADS Reactor Vessel Water Level - Low Low Low, Level 1 (currently 18 months)

This function is performed by Rosemount 1154DH5 Transmitters and 710DU Master Trip Units. The Rosemount transmitters' and trip units' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Trip Functions A.2.d, B.2.d: ADS Reactor Vessel Water Level - Low, Level 3, (Permissive) (currently 18 months)

This function is performed by Rosemount 1154DH4 Transmitters and 710DU Master Trip Units. The Rosemount transmitters' and trip units' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

TECHNICAL CHANGES - LESS RESTRICTIVE

LE.1 (cont'd)

Trip Functions A.2.e: LPCS Pump Discharge Pressure - High (currently 92 days)

This function is performed by Static-O-Ring 6N6-B45-U8-C1A-JJTTNQ and 6N6-B45-NX-C1A-JJTTX7 pressure switches. The Static-O-Ring pressure switches' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Trip Functions A.2.f: LPCI Pump A Discharge Pressure - High (currently 92 days)

This function is performed by Static-O-Ring 6N6-B45-NX-C1A-JJTTX7 pressure switches. The Static-O-Ring pressure switches' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Trip Functions B.2.e: LPCI Pump B and C Discharge Pressure - High (currently 18 months)

This function is performed by Static-O-Ring 6N6-B45-NX-C1A-JJTTX7 pressure switches. The Static-O-Ring pressure switches' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Trip Function C.1.a: HPCS Reactor Vessel Water Level - Low Low, Level 2 (currently 18 months)

This function is performed by Rosemount 1154DH5 Transmitters and 710DU Master Trip Units. The Rosemount transmitters' and trip units' drift was determined by quantitative analysis. The drift value determined will be used in

TECHNICAL CHANGES - LESS RESTRICTIVE

LE.1 (cont'd) the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Trip Function C.1.c: HPCS Reactor Vessel Water Level - High, Level 8 (currently 18 months)

This function is performed by Rosemount 1154DH4 Transmitters and 710DU Master Trip Units. The Rosemount transmitters' and trip units' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Trip Functions C.1.f: HPCS Pump Discharge Pressure - High (currently 92 day)

This function is performed by Static-O-Ring 6N6-B45-NX-C1A-JJTTX7 pressure switches. The Static-O-Ring pressure switches' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Based on the design of the instrumentation and the drift evaluations, it is concluded that the impact, if any, on system availability is minimal as a result of the change in the surveillance test interval.

A review of the surveillance test history was performed to validate the above conclusion. This review of the surveillance test history demonstrates that there are no failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month surveillance frequency. In addition, the proposed 24-month Surveillance Frequencies, if performed at the maximum interval allowed by proposed SR 3.0.2 (30 months) do not invalidate any assumptions in the plant licensing basis.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

LF.1 This change revises the Current Technical Specifications (CTS) Allowable Values to the Improved Technical Specifications (ITS) Allowable Values. ITS Section 3.3 reflects Allowable Values consistent with the philosophy of BWR ISTS, NUREG-1434, Rev. 1. These Allowable Values have been established consistent with the methods described in ComEd's Instrument Setpoint Methodology (Nuclear Engineering Standard NES-EIC-20.04, "Analysis of Instrument Channel Setpoint Error and Instrument Loop Accuracy"). For most cases, the Allowable Value determinations were calculated using plant specific operating and surveillance trend data or an allowance as provided for by the Instrument Setpoint Methodology. For all other cases, vendor documented performance specifications for drift were used. The Allowable Value verification used actual plant operating and surveillance trend information to ensure the validity of the developed Allowable Value. All changes to safety analysis limits applied in the methodologies were evaluated and confirmed as ensuring safety analysis licensing acceptance limits are maintained. All design limits applied in the methodologies were confirmed as ensuring that applicable design requirements of the associated systems and equipment are maintained. The methodologies used have been compared with the guidance of ANSI/ISA S67.04-Part I-1994 and ANSI/ISA RP67.04-Part II-1994. Plant calibration procedures will ensure that the assumptions regarding calibration accuracy, measurement and test equipment accuracy, and setting tolerance are maintained. Setpoints for each design or safety analysis limit have been established by accounting for the applicable instrument accuracy, calibration and drift uncertainties, environmental effects, power supply fluctuations, as well as uncertainties related to process and primary element measurement accuracy using the Instrument Setpoint Methodology. The Allowable Values have been established from each design or safety analysis limit by combining the errors associated with channel/instrument calibration (e.g., device accuracy, setting tolerance, and drift) with the calculated Nominal Trip Setpoint also using the Instrument Setpoint Methodology.

Additionally, each applicable channel/instrument has been evaluated and analyzed to support a fuel cycle extension to a 24 month interval. These evaluations and analyses have been performed utilizing the guidance provided in EPRI TR-103335, "Guidelines for Instrument Calibration Extension/Reduction Programs, Revision 1. The EPRI guidance was used to demonstrate that the data collected by the operating plant (from surveillance testing) has remained acceptable and reasonable with regard to the manufacturers design specifications.

TECHNICAL CHANGES - LESS RESTRICTIVE

LF.1 (cont'd) Use of the previously discussed methodologies for determining Allowable Values, instrument setpoints, and analyzing channel/instrument performance ensure that the design basis and associated safety limits will not be exceeded during plant operation. These evaluations, determinations, and analyses now form a portion of the plants design bases.

"Specific"

L.1 CTS 3.3.3 Action c requires restoration of an ADS Trip System to Operable status when it is inoperable; it does not allow placing the inoperable channels in trip and continuing to operate. CTS Table 3.3.3-1 Action 32 requires an inoperable ADS Reactor Vessel Water Level - Low, Level 3 (Permissive) channel (Trip Functions A.2.d and B.2.d) to be restored to Operable status; it does not allow placing the inoperable channel in trip and continuing to operate. An option is provided in ITS 3.3.5.1 Required Action E.2 to place all inoperable channels in the tripped condition. This conservatively compensates for the inoperable status, restores the single failure capability, and provides the required initiation capability of the instrumentation. Therefore, providing this option does not impact safety. However, if this action would result in system actuation, then declaring the system inoperable is the preferred action.

L.2 The pressure at which ADS is required to be OPERABLE, as specified in CTS Table 3.3.3-1 footnote (#), CTS Table 4.3.3.1-1 footnote #, and CTS 3.3.3 Action c, is increased from 122 psig to 150 psig in ITS 3.3.5.1 to provide consistency of the OPERABILITY requirements for all ECCS and RCIC equipment. Small break loss of coolant accidents at low pressures (i.e., between 122 psig and 150 psig) are bounded by analysis performed at higher pressures. The ADS is required to operate to lower the pressure sufficiently so that the low pressure coolant injection (LPCI) and low pressure core spray (LPCS) systems can provide makeup to mitigate such accidents. Since these systems can provide adequate cooling up to approximately 200 psig, there is no safety significance in the ADS not being OPERABLE between 122 psig and 150 psig.

L.3 CTS Table 3.3.3-1 Action 30.b requires the associated ECCS to be declared inoperable immediately when more than one channel of a Trip Function is inoperable. CTS Table 3.3.3-1 Action 35.b requires the HPCS to be declared inoperable when channels in both trip systems are inoperable. These Actions apply to the following CTS Table 3.3.3-1 Trip Functions: LPCS, LPCI, and

TECHNICAL CHANGES - LESS RESTRICTIVE

L.3 (cont'd) ADS Reactor Vessel Water Level - Low, Low, Low, Level 1 (Trip Functions A.1.a, A.2.a, B.1.a, and B.2.a), HPCS Reactor Vessel Water Level - Low, Low, Level 2 (Trip Function C.1.a), LPCS, LPCI, ADS, and HPCS Drywell Pressure - High (Trip Functions A.1.b, A.2.b, B.1.b, B.2.b, and C.1.b). ITS 3.3.5.1 ACTION B will allow 24 hours and ITS 3.3.5.1 ACTION E will allow 96 hours or 8 days (depending upon whether HPCS and RCIC Systems are both OPERABLE) to place inoperable channels in trip when two channels of a Function are inoperable, prior to declaring the associated ECCS inoperable, provided ECCS initiation capability is maintained.

The channels for each of the individual LPCS, LPCI, and ADS Functions are combined in a two-out-of-two logic; thus when one or both channels of an individual Trip Function are inoperable, the individual Trip Function will not perform its intended function. When one of the two channels are inoperable and the associated Function cannot perform its function, CTS Table 3.3.3-1 Action 30.a currently allows 24 hours to trip a channel (i.e., loss of the Trip Function is currently allowed for 24 hours).

The channels for the HPCS Functions are combined in a one-out-of-two-taken-twice logic; thus if one channel in each trip system of a Function is inoperable, the Function can still perform its intended function. This condition is analogous to the Functions described above, since Action 35.a allows 24 hours to trip the inoperable channel when only one channel is inoperable.

The 24 hour, 96 hour, and 8 day out of service time was evaluated and approved for use at LaSalle 1 and 2 by the NRC in the Safety Evaluation Report dated August 2, 1994. Therefore, allowing two channels of a LPCS, LPCI, and ADS Function to be inoperable is equivalent to one channel inoperable; in both cases, the Function cannot perform its intended function. Allowing two HPCS channels (one per trip system) of a Function to be inoperable is acceptable since the Function can still perform its intended function. However, this 24 hour, 96 hour, or 8 day time (provided in ITS 3.3.5.1 Required Actions B.3 and E.2) will only be allowed if the redundant ECCS (in the case of LPCS and LPCI) or trip system (in the case of ADS and HPCS) is maintaining initiation capability (ITS 3.3.5.1 Required Actions B.1, B.2, and E.1). This will ensure the overall ECCS function is maintained during the associated time. In addition, allowing all channels to be tripped in lieu of restoring the channels conservatively compensates for the inoperable status, restores the single failure capability, and provides the required initiation capability of the instrumentation. Therefore, providing this option does not impact safety. However, if this action would result in system actuation, then declaring the system inoperable is the preferred action.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

L.4 CTS Table 3.3.3-1 Action 38.a, requires, when one LPCS and LPCI A or one LPCI B and C Injection Valve Reactor Pressure-Low (Permissive) channel (CTS Table 3.3.3-1 Trip Functions A.1.e and B.1.g) is inoperable, the inoperable channel must be removed within 24 hours. This instrumentation provides a permissive to open the LPCI and LPCS injection valves when the reactor pressure has decreased to an acceptable pressure, such that opening the injection valves will not result in overpressurization of the LPCI or LPCS Systems. This requirement has been deleted. The Action assumes the channel fails in the tripped condition, but this is not always true; it can fail such that a trip would not occur. The requirement to remove the inoperable channel within 24 hours is not necessary to ensure the LPCI and LPCS Systems are not overpressurized. In order for the associated injection valves to open, another signal from the associated LPCS and LPCI A or LPCI B and C Injection Valve Injection Pressure-Low Permissive channel (CTS Table 3.3.3-1, Trip Functions A.1.d and B.1.c) must also occur. The OPERABILITY of these Functions continues to be controlled in accordance with Technical Specifications (ITS Table 3.3.5.1-1 Functions 1.g and 2.f). Therefore, the LPCI and LPCS Systems will continue to be protected from overpressurization.

L.5 CTS 4.4.2.2, in part, verifies that the low-low set function does not interfere with the OPERABILITY of the ADS by a CHANNEL CALIBRATION. The logic channels associated with the low-low set function are electrically interconnected. However, the only possible impact that could prevent ADS operation is in the common portion of the logic. This logic is energize to operate. Thus the non-interference requirement for the ADS function is demonstrated through a periodic functional test of the low-low set function. Thus the CHANNEL CALIBRATION for this purpose is being removed from the ITS. However, a periodic functional test of the low-low set function will continue to be performed and provide assurance that the common portions of ADS are not affected. Therefore, this CHANNEL CALIBRATION requirement is not required and can be deleted. The periodic functional test of the low-low set function will be included in the TRM. The TRM will be incorporated by reference into the LaSalle 1 and 2 UFSAR at ITS implementation. Change to the TRM will be controlled by the provisions of 10 CFR 50.59.

L.6 CTS Table 3.3.3-1 Action 31 requires the inoperable channel to be placed in trip. This Action applies to the Functions that control the ECCS minimum flow valves. Placing a channel in trip does not compensate for the inoperability, and it may be a less safe action to take. When a channel is placed in trip, the minimum flow valve will remain either open or closed. Open results in ECCS flow bypass and the flow assumed in the ECCS analysis may not be met. When

TECHNICAL CHANGES - LESS RESTRICTIVE

L.6 (cont'd) closed, the minimum flow valve will not open to provide minimum flow protection. Therefore, for these types of Functions, the channel must only be restored, as provided in ITS 3.3.5.1; it is not required to be tripped. If it is not restored, then the associated subsystem must be declared inoperable and appropriate actions taken, consistent with CTS Table 3.3.3-1 Action 31. This applies to the following CTS Table 3.3.3-1 Trip Functions: A.1.c, A.1.g, B.1.e, C.1.f, and C.1.g.

RELOCATED SPECIFICATIONS

R.1 The ADS Manual Inhibit Switch Function of CTS Tables 3.3.3-1, 3.3.3-2, and 4.3.3.1-1, Trip Functions A.2.i and B.2.h is an operational function only and is not considered in any design basis accident or transient. It does provide mitigation of the consequences of a non-design basis ATWS event; however the evaluation summarized in NEDO-31466, November 1987, determined the loss of ADS Manual Inhibit Switch Function to be a non-significant risk contributor to core damage frequency and offsite release. Therefore, the requirements specified for this Function in CTS 3.3.3 did not satisfy the NRC Policy Statement Technical Specification screening criteria as documented in the Application of Selection Criteria to the LaSalle 1 and 2 Technical Specifications and have been relocated to the Technical Requirements Manual (TRM). The TRM will be incorporated by reference into the LaSalle 1 and 2 UFSAR at ITS implementation. Changes to the TRM will be controlled in accordance with 10 CFR 50.59.

ITS 3.3.5.2

INSTRUMENTATION

A.1

3/4.3.5 REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

LCO 3.3.5.2 3.3.5 The reactor core isolation cooling (RCIC) system actuation instrumentation channels shown in Table 3.3.5-1 shall be OPERABLE ~~with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.5-2.~~ LA.3

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

ACTION: add proposed ACTIONS Note A.2

ACTION A a. With a RCIC system actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.5-2, declare the channel inoperable until the channel is restored to OPERABLE status ~~with its trip setpoint adjusted consistent with the Trip Setpoint value.~~ LA.3

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

SURVEILLANCE REQUIREMENTS

Note 1 to Surveillance Requirements

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

SR 3.3.5.2.4 4.3.5.2 LOGIC SYSTEM FUNCTIONAL TESTS ~~and simulated automatic operation~~ of all channels shall be performed at least once per ~~18~~ months. LA.1

24 LD.1

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A.1

Table 3.3.5.2-1

TABLE 3.3.5-1

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

Note 2 to Surveillance Requirements

FUNCTION ~~FUNCTIONAL UNITS~~	FUNCTION MINIMUM OPERABLE CHANNELS PER ~~TRIP SYSTEM~~(a)	ACTION	
1. ~~a.~~ Reactor Vessel Water Level - Low Low, Level 2	~~2~~ 4	50 B, E	A.3
2. ~~b.~~ Reactor Vessel Water Level - High, Level 8	2~~(b)~~	51 C, E	LA.2
4. ~~c.~~ Manual Initiation	1~~(c)~~	52 C, E	LA.2

add proposed Function 3 — M.1

A.3

for Functions 1 and 3 only — LB.1

Note 2 to Surveillance Requirements

(a) A channel may be placed in an inoperable status for up to 6 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.

~~(b) One trip system with two-out-of-two logic.~~ LA.2

~~(c) Single channel.~~

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ITS 3.3.5.2

TABLE 3.3.5-1 (Continued) A.1

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

add proposed Required Action B.1

ACTION 50 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement: M.2

ACTION B

a. For one trip system, place the inoperable channel in the tripped condition within 24 hours or declare the RCIC system inoperable.

ACTION E

ACTIONS B and E

b. For both trip systems, declare the RCIC system inoperable. L.1

ACTION 51 - With the number of OPERABLE channels less than required by the minimum OPERABLE Channels per Trip System requirement, declare the RCIC system inoperable within 24 hours. restore channel A4

ACTION C

ACTION E

ACTION 52 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement, restore the inoperable channel to OPERABLE status within 24 hours or declare the RCIC system inoperable.

ACTION C

ACTION E

add proposed ACTION D M.1

A.1

Table 3.3.5.2-1

~~TABLE 3.3.5-2~~

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION SETPOINTS

FUNCTION ~~FUNCTIONAL UNITS~~	~~TRIP SETPOINT~~	ALLOWABLE VALUE
1. ~~a.~~ Reactor Vessel Water Level - Low Low, Level 2	~~≥ - 50 inches*~~	≥ - 57 inches*
2. ~~b.~~ Reactor Vessel Water Level - High, Level 8	~~≤ 55.5 inches*~~	≤ 56 inches*
4. ~~c.~~ Manual Initiation	~~NA~~	NA

LF.1

LA.3

add proposed Function 3

M.2

~~*See Bases Figure B 3/4 3-1.~~

A.6

A.1

Table 3.3.5.2-1

TABLE ~~4.3.5.1-1~~

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTION ~~FUNCTIONAL UNITS~~	SR 3.3.5.2.1 CHANNEL CHECK	SR 3.3.5.2.2 CHANNEL FUNCTIONAL TEST	SR 3.3.5.2.3 CHANNEL CALIBRATION
1. ~~a.~~ Reactor Vessel Water Level - Low Low, Level 2	NA	Q	~~R~~
2. ~~b.~~ Reactor Vessel Water Level - High, Level 8	S	Q	~~R~~
4. ~~c.~~ Manual Initiation	NA	~~R~~	NA

24 months

LE.1

A.5

add proposed Function 3

M.2

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ITS 3.3.5.2

A.1

INSTRUMENTATION

3/4.3.5 REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

LCO 3.3.5.2 3.3.5 The reactor core isolation cooling (RCIC) system actuation instrumentation channels shown in Table 3.3.5-1 shall be OPERABLE ~~with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.5-2.~~ LA.3

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

ACTION: add proposed Actions Note A.2

ACTION A a. With a RCIC system actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.5-2, declare the channel inoperable until the channel is restored to OPERABLE status ~~with its trip setpoint adjusted consistent with the Trip Setpoint value.~~ LA.3

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

SURVEILLANCE REQUIREMENTS

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

SR 3.3.5.2.4 4.3.5.2 LOGIC SYSTEM FUNCTIONAL TESTS ~~and simulated automatic operation~~ of all channels shall be performed at least once per 18 months. LA.1

24 LD.1

A.1 Table 3.3.5.2-1

TABLE 3.3.5-1

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

Note 2 to Surveillance Requirements

FUNCTION ~~FUNCTIONAL UNITS~~	FUNCTION ~~MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM (a)~~ A.3	ACTION
1. ~~a.~~ Reactor Vessel Water Level - Low Low, Level 2	~~2~~ 4 A.3	50 B, E
2. ~~b.~~ Reactor Vessel Water Level - High, Level 8	2 ~~(b)~~ LA.2	51 C, E
4. ~~c.~~ Manual Initiation	1 ~~(c)~~ LA.2	52 C, E

add proposed Function 3 M.1

for Functions 1 and 3 only LB.1

Note 2 to Surveillance Requirements

~~(a)~~ A channel may be placed in an inoperable status for up to 6 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. 1

~~(b) One trip system with two-out-of-two logic.~~

~~(c) Single channel.~~ LA.2

ITS 3.3.5.2

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ITS 3.3.5.2

TABLE 3.3.5-1 (Continued) A.1

REACTOR CORE ISOLATION COOLING SYSTEM
ACTUATION INSTRUMENTATION

add proposed Required Action B.1 M.2

ACTION 50 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement:

ACTION B

a. For one trip system, place the inoperable channel in the tripped condition within 24 hours or declare the RCIC system inoperable.

ACTION E

ACTIONS B and E b. For both trip systems, declare the RCIC system inoperable. L.1

ACTION 51 - With the number of OPERABLE channels less than required by the minimum OPERABLE Channels per Trip System requirement, declare the RCIC system inoperable within 24 hours.

ACTION C

ACTION E

restore channel A.4

ACTION 52 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement, restore the inoperable channel to OPERABLE status within 24 hours or declare the RCIC system inoperable.

ACTION C

ACTION E

add proposed ACTION D M.1

A.1

Table 3.3.5.2-1
TABLE 3.3.5-2

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION SETPOINTS

FUNCTION ~~FUNCTIONAL UNITS~~	~~TRIP SETPOINT~~	ALLOWABLE VALUE
1. ~~a.~~ Reactor Vessel Water Level - Low Low, Level 2	~~≥ - 50 inches*~~	≥ - 57 inches*
2. ~~b.~~ Reactor Vessel Water Level - High, Level 8	~~≤ 55.5 inches*~~	≤ 56 inches*
4. ~~c.~~ Manual Initiation	~~NA~~	NA

LF.1

LA.3

add proposed function 3 — M.2

~~*See Bases Figure B 3/4 3-1~~ — A.6

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ITS 3.3.5.2

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A.1

Table 3.3.5.2-1

~~TABLE 4.3.5.1-1~~

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTION ~~FUNCTIONAL UNITS~~	SR 3.3.5.2.1 CHANNEL CHECK	SR 3.3.5.2.2 CHANNEL FUNCTIONAL TEST	SR 3.3.5.2.3 CHANNEL CALIBRATION
1. ~~a.~~ Reactor Vessel Water Level - Low Low, Level 2	NA	Q	~~R~~ 24 months
2. ~~b.~~ Reactor Vessel Water Level - High, Level 8	S	Q	~~R~~ 24 months
4. ~~c.~~ Manual Initiation	NA	~~R~~	NA

LE.1

A.5

add proposed Function 3

M.2

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ITS 3.3.5.2

ADMINISTRATIVE

A.1 In the conversion of the LaSalle 1 and 2 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1434, Rev. 1 (i.e., the Improved Standard Technical Specifications (ISTS)).

A.2 This proposed change to the CTS 3.3.5 Actions provides more explicit instructions for proper application of the Actions for Technical Specification compliance. In conjunction with the proposed Specification 1.3, "Completion Times," the ITS 3.3.5.2 ACTIONS Note ("Separate Condition entry is allowed for each....") provides direction consistent with the intent of the existing Actions for an inoperable RCIC instrumentation channel. It is intended that each inoperable channel is allowed a certain time to complete the Required Actions. Since this change only provides more explicit direction of the current interpretation of the existing specifications, this change is considered administrative.

A.3 The column title is now on a per Function basis in ITS Table 3.3.5.2-1 rather than the per Trip System basis in CTS Table 3.3.5-1. Thus, the number of required channels for CTS Table 3.3.5-1 Functional Unit a (Reactor Vessel Water Level—Low Low, Level 2) is changed to "4", since there are two trip systems for this Functional Unit, with two channels per trip system. CTS Table 3.3.5-1 Functional Unit b (Reactor Vessel Water Level—High, Level 8) is not affected since there is only one trip system for the Function (the number of channels remains the same).

A.4 CTS Table 3.3.5-1 Action 51 requires the RCIC System to be declared inoperable within 24 hours if one or both Reactor Vessel Water Level—High, Level 8 channels are inoperable. ITS 3.3.5.2 Required Action C.1 requires restoration of the channel within 24 hours, and if not restored, Required Action E.1 requires an immediate declaration of RCIC System inoperability. These proposed requirements are effectively identical to the CTS, therefore this change is considered administrative.

ADMINISTRATIVE (continued)

A.5 The 18 month CHANNEL FUNCTIONAL TEST (CFT) requirement of CTS Table 4.3.5.1-1, for Functional Unit c, "Manual Initiation," has been deleted. This requirement is redundant to the LOGIC SYSTEM FUNCTIONAL TEST (LSFT) requirement of CTS 4.3.5.2 and proposed SR 3.3.5.2.4 which are required to be performed every 18 months (changed to 24 months - see Discussion of Change LD.1 below). The Manual Initiation Function has no adjustable setpoints, but is based on switch and push button manipulation. Since the LSFT is a complete test of the logic, including the manual initiation the switch and push button, there is no need to require a CFT at the same Frequency. Therefore, ITS 3.3.5.2 only requires an LSFT. This change is considered administrative.

A.6 CTS Table 3.3.5-2 Footnote * refers to Bases Figure B 3/4.3-1. This Figure is providing information as to what reactor vessel water level the various reactor water level instruments actuate, in comparison to one another. This information is already essentially contained in the Allowable Value column of this Table. Therefore, this reference is being deleted and is considered administrative.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 An additional Function has been added, ITS Table 3.3.5.2-1 Function 3, to provide requirements for the Condensate Storage Tank Level—Low Instrumentation. As stated in the UFSAR, Section 7.4.1.2.6, the condensate storage tank is the preferred source for the RCIC System suction. Upon receipt of a RCIC actuation signal, the suction valve from the condensate storage tank automatically opens, RCIC suction is transferred to the suppression pool on condensate storage tank low level. Appropriate ACTIONS (ITS 3.3.5.1 ACTION D) and Surveillances have also been added. This Function is provided by level switches which do not include direct readouts; therefore, no CHANNEL CHECK is specified. This is an additional restriction on plant operation necessary to help ensure the OPERABILITY of the RCIC System is maintained.

M.2 An appropriate Required Action has been added (ITS 3.3.5.2 Required Action B.1) to Action 50 of CTS Table 3.3.5-1 for response to loss of RCIC initiation capability of a Function. This additional requirement provides clear direction of the necessary Actions when in this condition. The Required Action will only allow continued operations for 1 hour if a loss of RCIC initiation capability of current Functional Unit a occurs. This change represents an additional restriction on plant operation necessary to ensure the risk associated with plant operation in this condition is minimized.

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

LA.1 The detail in CTS 4.3.5.2 relating to methods (simulated automatic operation) for performing the LOGIC SYSTEM FUNCTIONAL TESTS are proposed to be relocated to the Bases. This detail is not necessary to ensure the OPERABILITY of the RCIC System Instrumentation. The requirements of ITS 3.3.5.2 and proposed SR 3.3.5.2.4 are adequate to ensure the RCIC System instruments are maintained OPERABLE. Therefore, the relocated detail is not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

LA.2 System design and operation details specified in CTS Table 3.3.5-1, Note (b) and (c) (which describe the number of trip systems and the logic design for the Manual Initiation and Reactor Vessel Water Level—High, Level 8 Functional Units) are proposed to be relocated to the Bases. Details relating to system design and operation are unnecessary in the LCO. These details are not necessary to ensure the OPERABILITY of the RCIC System Instrumentation. The requirements of ITS 3.3.5.2 and the associated Surveillance Requirements are adequate to ensure the RCIC System instruments are maintained OPERABLE. Therefore, the relocated detail is not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

LA.3 CTS 3.3.5 requires the Trip Setpoints to be set consistent with the values shown in the Trip Setpoint column of Table 3.3.5-2. CTS 3.3.5 Action a requires inoperable channels to be restored to OPERABLE status with Trip Setpoints adjusted consistent with the Trip Setpoint values. Trip setpoints are operational details that are not directly related to the OPERABILITY of the instrumentation. These details are to be relocated to the Technical Requirements Manual (TRM) and the references to these setpoints in CTS 3.3.5 are deleted. The Allowable Value is the required limitation for the associated Function and this value is retained in the Technical Specifications. These relocated Trip Setpoints are not required to be in the Technical Specifications to provide adequate protection of the public health and safety. The TRM will be incorporated into the LaSalle 1 and 2 UFSAR at ITS implementation. Any changes to the relocated Trip Setpoints in the TRM will be controlled by the provisions of 10 CFR 50.59.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

LB.1 CTS Table 3.3.5-1 footnote (a), which allows a delay in entering the associated Action statement, has been clarified to allow current Functional Units b (ITS Table 3.3.5.2-1 Function 2, Reactor Vessel Water Level—High, Level 8) and c (ITS Table 3.3.5.2-1 Function 4, Manual Initiation) to be inoperable and delay entering the associated ACTIONS for 6 hours, regardless of the remaining RCIC initiation capability of these Functions. For these two Functions, loss of one channel results in a loss of RCIC initiation capability for the associated Function. This condition was evaluated in the reliability analysis of GENE-770-06-2-A, December 1992, and found to be acceptable. This analysis is the basis for the current 6 hour allowance in the Note. The results of the NRC review of this generic reliability analysis as it relates to LaSalle 1 and 2 is documented in NRC Safety Evaluation Report (SER) dated August 2, 1995. The SER concluded that the generic reliability analysis is applicable to LaSalle 1 and 2 and that LaSalle 1 and 2 meets all requirements of the NRC SER accepting the generic reliability analysis.

LD.1 The Frequency for performing the LOGIC SYSTEM FUNCTIONAL TEST (LSFT) of CTS 4.3.5.2 and the CHANNEL FUNCTIONAL TEST for the RCIC Manual Initiation Function specified in CTS Table 4.3.5.1-1 Functional Unit c (changed to LSFT in Discussion of Change A.5 above) has been extended from 18 months to 24 months in proposed SR 3.3.5.2.4. These SRs ensure that RCIC logic will function as designed to ensure proper response during an analyzed event. The proposed change will allow this Surveillance to extend the Surveillance Frequency from the current 18 month Surveillance Frequency (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2) to a 24 month Surveillance Frequency (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2). This proposed change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical maintenance and surveillance data have shown that this test normally passes the Surveillance at the current Frequency. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. The system function testing performed in ITS 3.5.3 overlaps this surveillance to provide complete testing of the safety function. The RCIC system is tested on a more frequent basis during the operating cycle in accordance with proposed SRs 3.3.5.2.1 and 3.3.5.2.2. This testing of the RCIC system ensures that a significant portion of the RCIC circuitry is operating properly and will detect significant failures of this circuitry. RCIC system actuating logic is designed to be single failure proof and therefore, is highly reliable.

TECHNICAL CHANGES - LESS RESTRICTIVE

LD.1 (cont'd) Based on the above discussion, the impact, if any, of this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 24 month Surveillance Frequency, if performed at the maximum interval allowed by proposed SR 3.0.2 (30 months) does not invalidate any assumptions in the plant licensing basis.

Furthermore, as stated in the NRC Safety Evaluation Report (dated August 2, 1993) relating to extension of the Peach Bottom Atomic Power Station, Unit Numbers 2 and 3 surveillance intervals from 18 to 24 months:

"Industry reliability studies for boiling water reactors (BWRs), prepared by the BWR Owners Group (NEDC-30936P) show that the overall safety systems' reliabilities are not dominated by the reliabilities of the logic system, but by that of the mechanical components, (e.g., pumps and valves), which are consequently tested on a more frequent basis. Since the probability of a relay or contact failure is small relative to the probability of mechanical component failure, increasing the Logic System Functional Test interval represents no significant change in the overall safety system unavailability."

Based on the above discussion, the impact, if any, of this change on system availability is minimal.

LE.1 The Frequencies for performing the CHANNEL CALIBRATIONS of CTS 4.3.5.1 and CTS Table 4.3.5.1-1 for Functional Units a and b have been extended from 18 months to 24 months in proposed SR 3.3.5.2.3. The proposed change will allow these Surveillances to extend their Surveillance Frequency from the current 18 month Surveillance Frequency (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2) to a 24 month Surveillance Frequency (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2). This proposed change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991.

Extending the SR Frequency is acceptable because the RCIC initiation logic is designed to be highly reliable. Furthermore, the impacted RCIC instrumentation has been evaluated based on make, manufacturer and model number to determine

TECHNICAL CHANGES - LESS RESTRICTIVE

LE.1 (cont'd) that the instrumentation's actual drift falls within the design allowance in the associated setpoint calculation. The following paragraphs listed by CTS Table 4.3.5.1-1 Functional Unit number, identify by make, manufacturer and model number the drift evaluations performed:

Functional Unit a, Reactor Vessel Water Level—Low Low, Level 2

This function is performed by Rosemount 1153DH5 Transmitters and 710DU Master Trip Units. The Rosemount transmitters' and trip units' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Functional Unit b, Reactor Vessel Water Level—High, Level 8

This function is performed by Rosemount 1153DH4 Transmitters and 710DU Master Trip Units. The Rosemount transmitters' and trip units' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Based on the design of the instrumentation and the drift evaluations, it is concluded that the impact, if any, on system availability is minimal as a result of the change in the surveillance test interval.

A review of the surveillance test history was performed to validate the above conclusion. This review of the surveillance test history demonstrates that there are no failures that would invalidate the conclusion that the impact, if any, on system availability is small from a change to a 24-month surveillance frequency. In addition, the proposed 24-month Surveillance Frequencies, if performed at the maximum interval allowed by proposed SR 3.0.2 (30 months) do not invalidate any assumptions in the plant licensing basis.

LF.1 This change revises the Current Technical Specifications (CTS) Allowable Values to the Improved Technical Specifications (ITS) Allowable Values. ITS Section 3.3 reflects Allowable Values consistent with the philosophy of BWR ISTS, NUREG-1434, Rev. 1. These Allowable Values have been established consistent with the methods described in ComEd's Instrument Setpoint

TECHNICAL CHANGES - LESS RESTRICTIVE

LF.1 (cont'd) Methodology (Nuclear Engineering Standard NES-EIC-20.04, "Analysis of Instrument Channel Setpoint Error and Instrument Loop Accuracy"). For most cases, the Allowable Value determinations were calculated using plant specific operating and surveillance trend data or an allowance as provided for by the Instrument Setpoint Methodology. For all other cases, vendor documented performance specifications for drift were used. The Allowable Value verification used actual plant operating and surveillance trend information to ensure the validity of the developed Allowable Value. All changes to safety analysis limits applied in the methodologies were evaluated and confirmed as ensuring safety analysis licensing acceptance limits are maintained. All design limits applied in the methodologies were confirmed as ensuring that applicable design requirements of the associated systems and equipment are maintained.

The methodologies used have been compared with the guidance of ANSI/ISA S67.04-Part I-1994 and ANSI/ISA RP67.04-Part II-1994. Plant calibration procedures will ensure that the assumptions regarding calibration accuracy, measurement and test equipment accuracy, and setting tolerance are maintained. Setpoints for each design or safety analysis limit have been established by accounting for the applicable instrument accuracy, calibration and drift uncertainties, environmental effects, power supply fluctuations, as well as uncertainties related to process and primary element measurement accuracy using the Instrument Setpoint Methodology. The Allowable Values have been established from each design or safety analysis limit by combining the errors associated with channel/instrument calibration (e.g., device accuracy, setting tolerance, and drift) with the calculated Nominal Trip Setpoint also using the Instrument Setpoint Methodology.

Additionally, each applicable channel/instrument has been evaluated and analyzed to support a fuel cycle extension to a 24 month interval. These evaluations and analyses have been performed utilizing the guidance provided in EPRI TR-103335, "Guidelines for Instrument Calibration Extension/Reduction Programs, Revision 1. The EPRI guidance was used to demonstrate that the data collected by the operating plant (from surveillance testing) has remained acceptable and reasonable with regard to the manufacturers design specifications.

Use of the previously discussed methodologies for determining Allowable Values, instrument setpoints, and analyzing channel/instrument performance ensure that the design basis and associated safety limits will not be exceeded during plant operation. These evaluations, determinations, and analyses now form a portion of the plants design bases.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

"Specific"

L.1 An option is added to CTS Table 3.3.5-1 Action 50.b for when one or more inoperable channels exist. This option (in ITS 3.3.5.2 Required Action B.2) is to place all inoperable channels in the tripped condition. This conservatively compensates for the inoperable status, restores the single failure capability with regard to system actuation, and provides the required initiation capability of the instrumentation. Therefore, providing this option does not impact safety. However, if this action would result in system actuation, then declaring the system inoperable is the preferred action.

RELOCATED SPECIFICATIONS

None

ITS 3.3.6.1

3/4.3.2 ISOLATION ACTUATION INSTRUMENTATION A.1

LIMITING CONDITION FOR OPERATION

LCO 3.3.6.1 3.3.2 The isolation actuation instrumentation channels shown in Table 3.3.2-1 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.2-2 and with ISOLATION SYSTEM RESPONSE LA.1

SR 3.3.6.1.6 TIME ~~as shown in Table 3.3.2-3~~. LA.2

APPLICABILITY: As shown in Table 3.3.2-1.

ACTION: add proposed ACTIONS Note A.2

ACTIONS A and B

a. With an isolation actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.2-2, declare the channel inoperable until the channel is restored to OPERABLE status with its trip setpoint adjusted consistent with the Trip Setpoint value. LA.1

ACTION A

b. With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System Requirement for one trip system, either

1. Place the inoperable channel(s) and/or trip system in the tripped condition* within

   a) ~~1 hour for trip functions without an OPERABLE channel,~~ LB.1
   b) 12 hours for trip functions common to RPS Instrumentation, and
   c) 24 hours for trip functions not common to RPS Instrumentation.

or

ACTION C

2. Take the ACTION required by Table 3.3.2-1.

ACTION B

c. With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement for both trip systems,

1. Place at least one trip system** in the tripped condition*** within one hour, and

ACTION A

2. a) Place the inoperable channel(s) in the remaining trip system in the tripped condition*** within

   1) ~~1 hour for trip functions without an OPERABLE channel,~~ LB.1
   2) 12 hours for trip functions common to RPS Instrumentation, and
   3) 24 hours for trip functions not common to RPS Instrumentation.

or

ACTION C

b) Take the ACTION required by Table 3.3.2-1.

* ~~An inoperable channel need not be placed in the tripped condition where this would cause the Trip Function to occur.~~ LA.3 ~~In these cases, the inoperable channel shall be restored to OPERABLE status within 6 hours or the ACTION required by Table 3.3.2-1 for that Trip Function shall be taken.~~ LB.1

** ~~If more channels are inoperable in one trip system than in the other, select that trip system to place in the tripped condition except when this would cause the Trip Function to occur.~~

*** ~~An inoperable channel need not be placed in the tripped condition where this would cause the Trip Function to occur.~~ LA.3 ACTION B ~~In these cases, the inoperable channel shall be restored to OPERABLE status within 1 hour or~~ LB.1 ACTION C the ACTION required by Table 3.3.2-1 for that Trip Function shall be taken.

SURVEILLANCE REQUIREMENTS

Note 1 to Surveillance Requirements 4.3.2.1 Each isolation actuation instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations for the OPERATIONAL CONDITIONS and at the frequencies shown in Table 4.3.2.1-1.

LA.4

SR 3.3.6.1.5 4.3.2.2 LOGIC SYSTEM FUNCTIONAL TESTS ~~and simulated automatic operation~~ of all channels shall be performed at least once per ~~18~~ 24 months.

LD.1

SR 3.3.6.1.6 4.3.2.3 The ISOLATION SYSTEM RESPONSE TIME of each isolation trip function shown in Table 3.3.2-3 shall be demonstrated to be within its limit at least once per ~~18~~ 24 months. ~~Each test shall include at least one channel per trip system such that all channels are tested at least once every N times 18 months, where N is the total number of redundant channels in a specific isolation trip system.~~

A.3

LD.1

addressed by definition of STAGGERED TEST BASIS and A.4

Table 3.3.6.1-1

TABLE 3.3.2-1

ISOLATION ACTUATION INSTRUMENTATION

ITS 3.3.6.1

A.1

LA.5

Note 2 to Surveillance Requirements

	FUNCTION ~~TRIP FUNCTION~~	~~VALVE GROUPS OPERATED BY SIGNAL~~	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM (b)	APPLICABLE OPERATIONAL CONDITION	ACTION
A.5	~~A. AUTOMATIC INITIATION~~				
A.5 1,2	~~1. PRIMARY CONTAINMENT ISOLATION~~				
	a. Reactor Vessel Water Level				
2.f	(1) Low, Level 3	7	2	1, 2, 3	L.1 20 F
2.a	(2) Low Low, Level 2	2, 3	2	1, 2, 3	20 H
1.a, 2.e	(3) Low Low Low, Level 1	1, 10	2	1, 2, 3	L.2 for group 1 20 D (group 1) F (group 10) L.1 group 10
2.b	b. Drywell Pressure - High	2, 7, 10	2	1, 2, 3	20 H
	c. Main Steam Line				
	1) DELETED				
1.b	2) Pressure - Low	1	M.1 2	1	23 E
1.c	3) Flow - High	1	2/line(d)	1, 2, 3	21 D
	d. DELETED			Notes 2 and 3 to Surveillance Req'ments	L.3
1.e	e. Main Steam Line Tunnel ΔTemperature - High	1	2	1(i)(j), 2(i)(j), 3(i)(j)	21 D
1.d	f. Condenser Vacuum - Low	1	2	1, 2(a), 3(a) Footnote (a)	21 D
2	~~2. SECONDARY CONTAINMENT ISOLATION~~	A.6 moved to ITS 3.3.6.2			A.6 moved to ITS 3.3.6.2
2.c	a. Reactor Building Vent Exhaust Plenum Radiation - High	~~4~~(c)(e)	2	1, 2, 3 and **	24 F
2.b	b. Drywell Pressure - High	~~4~~(c)(e)	2	1, 2, 3	24 H
2.a	c. Reactor Vessel Water Level - Low Low, Level 2	~~4~~(c)(e)	2	1, 2, 3, and #	24 H
2.d	d. Fuel Pool Vent Exhaust Radiation - High	~~4~~(c)(e)	2	1, 2, 3, and **	24 F

LA.5

M.2 add proposed ACTIONS F and H as indicated

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Table 3.3.6.1-1

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

	TRIP FUNCTION	VALVE GROUPS OPERATED BY SIGNAL	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM(b)	APPLICABLE OPERATIONAL CONDITION	ACTION
4	3. REACTOR WATER CLEANUP SYSTEM ISOLATION		Note 2 to Surveillance Requirements		
4.a	a. Δ Flow - High	5	1	1, 2, 3	22 F
4.c	b. Heat Exchanger Area Temperature - High	5	1/heat exchanger	1, 2, 3	22 F
4.d	c. Heat Exchanger Area Ventilation ΔT - High	5	1/heat exchanger	1, 2, 3	22 F
4.l	d. SLCS Initiation	5(i) - footnote (b)	2 NA	1, 2, 3	22 I
4.k	e. Reactor Vessel Water Level - Low Low, Level 2	5	2	1, 2, 3	22 F
4.e	f. Pump and Valve Area Temperature - High	5	1/area	1, 2, 3	22 F
4.f	g. Pump and Valve Area Ventilation ΔT - High	5	1/area	1, 2, 3	22 F
4.g	h. Holdup Pipe Area Temperature - High	5	1	1, 2, 3	22 F
4.h	i. Holdup Pipe Area Ventilation ΔT - High	5	1	1, 2, 3	22F
4.i	j. Filter/Demineralizer Valve Room Area Temperature - High	5	1	1, 2, 3	22 F
4.j	k. Filter/Demineralizer Valve Room Area Ventilation ΔT - High	5	1	1, 2, 3	22 F
	l. Pump Suction Flow - High	5	1	1, 2, 3	22

add proposed Function 4.b

M.3

LA.5

L.4

L.11

LA.9

A.1

ITS 3.3.6.1

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Table 3.3.6.1-1

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

Function TRIP FUNCTION	LA.5 ~~VALVE GROUPS OPERATED BY SIGNAL~~	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM (b) Note 2 to Surveillance Requirements	APPLICABLE OPERATIONAL CONDITION	ACTION
3 4. REACTOR CORE ISOLATION COOLING SYSTEM ISOLATION				
3.a a. RCIC Steam Line Flow - High	~~8~~	1	1, 2, 3	22 F
add proposed Function 3.b				
3.c b. RCIC Steam Supply Pressure - Low	~~8, 9(a)~~	2	1, 2, 3	22 F
3.d c. RCIC Turbine Exhaust Diaphragm Pressure - High	~~8~~	2	1, 2, 3	22 F
3.e d. RCIC Equipment Room Temperature - High	~~8~~	1	1, 2, 3	22 F
3.g e. RCIC Steam Line Tunnel Temperature - High	~~8~~	1	1, 2, 3	22 F
3.h f. RCIC Steam Line Tunnel Δ Temperature - High	~~8~~	1	1, 2, 3	22 F
3.i g. Drywell Pressure - High	~~9(a)~~	2	1, 2, 3	22 F
3.f h. RCIC Equipment Room Δ Temperature - High	~~8~~	1	1, 2, 3	22 F

M.3

LA.5

A.1

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ITS 3.3.6.1

Table 3.3.6.1-1

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

Note 2 to Surveillance Req'ments

Function TRIP FUNCTION	LA.5 VALVE GROUPS OPERATED BY SIGNAL	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM (b)	APPLICABLE OPERATIONAL CONDITION	ACTION
~~5. Deleted.~~		M.4 add proposed Note (c)	L.6 M.4 4 and 5	L.8
5 6. RHR SYSTEM SHUTDOWN COOLING MODE ISOLATION				
5.a a. Reactor Vessel Water Level - Low, Level 3	LA.5 ~~6~~	2	~~1, 2~~, 3	25 J
5.b b. Reactor Vessel (RHR Cut-in Permissive) Pressure - High	~~6~~	1	1, 2, 3	L.7 25 F
~~c. RHR Pump Suction Flow - High~~	~~6~~	~~1~~	~~1, 2, 3~~	~~25~~ LA.8
A.5 B. MANUAL INITIATION		2 M.5 for group 1	moved to ITS 3.3.6.2 A.6	
1.f, 2.g, 4.m, 5.c 1. ~~Inboard Valves~~	LA.5 ~~1, 2, 5, 6, 7~~	~~1 group~~	1, 2, 3	26 G
1.f, 2.g, 4.m, 5.c 2. ~~Outboard Valves~~	~~1, 2, 5, 6~~	~~1 group~~	1, 2, 3	26 G
2.g 3. ~~Inboard Valves~~	~~4(c)(e)~~ A.6 moved to ITS 3.3.6.2	~~1 group~~	1, 2, 3 ~~and **, #~~	26 G
2.g 4. ~~Outboard Valves~~	~~4(c)(e)~~	~~1 group~~	1, 2, 3 ~~and **, #~~	26 G
L.10 ~~5. Inboard Valves~~	~~3, 8, 9~~	~~1 valve~~	~~1, 2, 3~~	~~26~~
~~6. Outboard Valves~~	~~3, 8, 9~~	~~1 valve~~	~~1, 2, 3~~	~~26~~
3.j 7. ~~Outboard Valve~~	~~8(h)~~ footnote (b)	~~1 group~~ LA.5	1, 2, 3	26 G L.9

include Group 10 with ITS Function 2.g M.7

A.1

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ITS 3.3.6.1

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

add proposed Required Action D.1 L.2

ACTION

ACTIONS D, F, and J	ACTION 20	-	Be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours. L.1 add proposed ACTION F
ACTION D	ACTION 21	-	~~Be in at least STARTUP~~ with the associated isolation valves closed within ~~6~~ 12 hours or be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours. L.3 A.8
ACTIONS F and I	ACTION 22	-	Close the affected system/isolation valves within 1 hour and declare the affected system inoperable. L.11 add proposed Required Action I.1
ACTION E	ACTION 23	-	Be in at least STARTUP within 6 hours.
	~~ACTION 24~~	-	~~Establish SECONDARY CONTAINMENT INTEGRITY with the standby gas treatment system operating within 1 hour.~~ A.6 moved to ITS 3.3.6.2
ACTIONS F and J	ACTION 25	-	~~Lock~~ close the affected system isolation valves closed within 1 hour and declare the affected system inoperable. L.8 A.8 L.7 add proposed Required Actions J.1 and J.2
	ACTION 26	-	Provided that the manual initiation function is OPERABLE for each other group valve, inboard or outboard, as applicable, in each line, restore the manual initiation function to OPERABLE status within 24 hours; otherwise, restore the manual initiation function to OPERABLE status within 8 hours; otherwise: L.9
ACTION H			a. Be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours, or
ACTION G			b. Close the affected system isolation valves within the next hour and declare the affected system inoperable. A.8

ACTION G

NOTES

Table 3.3.6.1-1 footnote (a)

* May be bypassed with all turbine stop valves not full open.

** When handling irradiated fuel in the secondary containment and during CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

\# During CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

~~(a) Deleted.~~

Note 2 to Surveillance Requirements

(b) A channel may be placed in an inoperable status for up to 6 hours for required surveillance without placing the channel in the tripped condition provided at least one other OPERABLE channel in the same trip system is monitoring that parameter. In addition for those trip systems with a design providing only one channel per trip system, the channel may be placed in an inoperable status for up to 8 hours for required surveillance testing without placing the channel in the tripped condition provided that the redundant isolation valve, inboard or outboard, as applicable, in each line is operable and all required actuation instrumentation for that redundant valve is OPERABLE, or place the trip system in the tripped condition.

the associated Function maintains isolation capability

LB.2

A.6 moved to ITS 3.3.6.2

(c) Also actuates the standby gas treatment system.

(d) A channel is OPERABLE if 2 of 4 instruments in that channel are OPERABLE. M.1

(e) Also actuates secondary containment ventilation isolation dampers per Table 3.6.5.2-1.

Table 3.3.6.1-1 footnote (b)

(f) Closes only RWCU system inlet outboard valve.

LA.5

only inputs into one of two trip systems

TABLE 3.3.2-1 (Continued)

NOTES (Continued)

LA.5

Table 3.3.6.1-1 footnote (b)

(g) Requires RCIC steam supply pressure-low coincident with drywell pressure-high.

(h) Manual initiation isolates 1E51-F008 only and only with a coincident reactor vessel water level-low, level 2, signal.

LA.5

Notes 2 and 3 to ACTIONS

(i) Both channels of each trip system may be placed in an inoperable status for up to 4 hours for required reactor building ventilation system corrective maintenance, filter changes, damper cycling and surveillance tests, other than Surveillance Requirement 4.6.5.1.c, without placing the trip system in the tripped condition.

(j) Both channels of each trip system may be placed in an inoperable status for up to 12 hours due to loss of reactor building ventilation or for performance of Surveillance Requirement 4.6.5.1.c without placing the trip system in the tripped condition.

only inputs into one of two trip systems

Table 3.3.6.1-1

TABLE 3.3.2-2

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

A.5 A.6 moved to ITS 3.3.6.2 M.3 add proposed Function 4.b LA.1 LF.1 A.11 A.1

	FUNCTION TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
	A. ~~AUTOMATIC INITIATION~~		
1, 2	1. PRIMARY CONTAINMENT ISOLATION		
	a. Reactor Vessel Water Level		
2.f	1) Low, Level 3	≥ 12.5 inches*	≥ 11.0 inches*
2.a	2) Low Low, Level 2	≥ -50 inches*	≥ -57 inches*
1.a, 2.e	3) Low Low Low, Level 1	≥ -129 inches*	≥ -136 inches*
2.b	b. Drywell Pressure - High	≤ 1.69 psig	≤ 1.89 psig
	c. Main Steam Line		
	1) DELETED		
1.b	2) Pressure - Low	≥ 854 psig	≥ 834 psig
1.c	3) Flow - High	≤ 111 psid	≤ 116 psid
	d. DELETED		
1.e	e. Main Steam Line Tunnel Δ Temperature - High	≤ 65°F	≤ 70°F
1.d	f. Condenser Vacuum - Low	≥ 7 inches Hg vacuum	≥ 5.5 inches Hg vacuum
	2. SECONDARY CONTAINMENT ISOLATION		
2.c	a. Reactor Building Vent Exhaust Plenum Radiation - High	≤ 10 mr/hr	≤ 15 mr/hr
2.b	b. Drywell Pressure - High	≤ 1.69 psig	≤ 1.89 psig
2.a	c. Reactor Vessel Water Level - Low Low, Level 2	≥ -50 inches*	≥ -57 inches*
2.d	d. Fuel Pool Vent Exhaust Radiation - High	≤ 10 mr/hr	≤ 15 mr/hr
4	3. REACTOR WATER CLEANUP SYSTEM ISOLATION		
4.a	a. Δ Flow - High	≤ 70 gpm	≤ 87.5 gpm
4.c	b. Heat Exchanger Area Temperature - High	≤ 149°F	≤ 156.8°F
4.d	c. Heat Exchanger Area Ventilation ΔT - High	≤ 33°F	≤ 40.3°F
4.l	d. SLCS Initiation	NA	NA
4.k	e. Reactor Vessel Water Level - Low Low, Level 2	≥ -50 inches*	≥ -57 inches*

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ITS 3.3.6.1

Table 3.3.6.1-1

TABLE 3.3.2-2 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

FUNCTION TRIP FUNCTION		TRIP SETPOINT	ALLOWABLE VALUE
4.e	f. Pump and Valve Area Temperature - High	~~≤ 201°F~~	≤ 209°F
4.f	g. Pump and Valve Area Ventilation ΔT - High	~~≤ 86°F~~	≤ 92.5°F
4.g	h. Holdup Pipe Area Temperature - High	~~≤ 201°F~~	≤ 209°F
4.h	i. Holdup Pipe Area Ventilation ΔT - High	~~≤ 86°F~~	≤ 92.5°F
4.i	j. Filter/Demineralizer Valve Room Area Temperature - High	~~≤ 201°F~~	≤ 209°F
4.j	k. Filter/Demineralizer Valve Room Area Ventilation ΔT - High	~~≤ 86°F~~	≤ 92.5°F
	~~l. Pump Suction Flow - High~~	~~≤ 560 gpm~~	~~≤ 610 gpm~~

LA.1

LF.1

LA.9

A.1

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ITS 3.3.6.1

Table 3.3.6.1-1

TABLE 3.3.2-2 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

Function

TRIP FUNCTION		TRIP SETPOINT	ALLOWABLE VALUE
4.	REACTOR CORE ISOLATION COOLING SYSTEM ISOLATION		
3.a	a. RCIC Steam Line Flow - High	≤ 290% of rated flow, 178" H_2O	≤ ~~295% of rated flow~~, 185" H_2O
3.c	b. RCIC Steam Supply Pressure - Low	≥ 57 psig	≥ 53 psig
3.d	c. RCIC Turbine Exhaust Diaphragm Pressure - High	≤ 10.0 psig	≤ 20.0 psig
3.e	d. RCIC Equipment Room Temperature - High	≤ 200°F	≤ 206°F
3.g	e. RCIC Steam Line Tunnel Temperature - High	≤ 200°F	≤ 206°F
3.h	f. RCIC Steam Line Tunnel Δ Temperature - High	≤ 117°F	≤ 123°F
3.i	g. Drywell Pressure - High	≤ 1.69 psig	≤ 1.89 psig
3.f	h. RCIC Equipment Room Δ Temperature - High	≤ 120°F	≤ 126°F
5.	Deleted.		

add proposed Function 3.b M.3

LA.1

LF.1

A.7

A.1

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ITS 3.3.6.1

Table 3.3.6.1-1

TABLE 3.3.2-2 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

Function TRIP FUNCTION	TRIP SETPOINT LA.1	ALLOWABLE VALUE LF.1
5 6. RHR SYSTEM SHUTDOWN COOLING MODE ISOLATION		
5.a a. Reactor Vessel Water Level - Low, Level 3	≥ 12.5 inches* LA.1	≥ 11.0 inches* A.11
5.b b. Reactor Vessel (RHR Cut-in Permissive) Pressure - High	≤ 135 psig**	≤ 145 psig** LA.6
c. RHR Pump Suction Flow - High	≤ 180" H_2O	≤ 186" H_2O LA.8
A.5 B. MANUAL INITIATION	Not Applicable LA.1	Not Applicable
5.c, 1.f, 2g, 4.a 1. Inboard Valves		
2. Outboard Valves		
2.g 3. Inboard Valves		
4. Outboard Valves		
L.10 5. Inboard Valves		
6. Outboard Valves		
3.j 7. Outboard Valve		

D.1

A.11

* See Bases Figure B 3/4 3-1

** Corrected for cold water head with reactor vessel flooded. LA.6

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ITS 3.3.6.1

A.1

TABLE 3.3.2-3

ISOLATION SYSTEM INSTRUMENTATION RESPONSE TIME

TRIP FUNCTION	RESPONSE TIME (Seconds)#
A. AUTOMATIC INITIATION	
1. PRIMARY CONTAINMENT ISOLATION	
a. Reactor Vessel Water Level	
1) Low, Level 3	N/A
2) Low Low, Level 2	N/A
3) Low Low Low, Level 1	≤ 1.0*, ##
b. Drywell Pressure - High	N/A
c. Main Steam Line	
1) DELETED	
2) Pressure - Low	≤ 2.0*, ##
3) Flow - High	≤ 0.5*, ##
d. DELETED	
e. Condenser Vacuum - Low	N/A
f. Main Steam Line Tunnel ΔTemperature - High	N/A
2. SECONDARY CONTAINMENT ISOLATION	N/A
a. Reactor Building Vent Exhaust Plenum Radiation - High	
b. Drywell Pressure - High	
c. Reactor Vessel Water Level - Low, Level 2	
d. Fuel Pool Vent Exhaust Radiation - High	
3. REACTOR WATER CLEANUP SYSTEM ISOLATION	N/A
a. ΔFlow - High	
b. Heat Exchanger Area Temperature - High	
c. Heat Exchanger Area Ventilation ΔT-High	
d. SLCS Initiation	
e. Reactor Vessel Water Level - Low Low, Level 2	
f. Pump and Valve Area Temperature - High	
g. Pump and Valve Area Ventilation ΔT - High	
h. Holdup Pipe Area Temperature - High	
i. Holdup Pipe Area Ventilation ΔT - High	
j. Filter/Demineralizer Valve Room Area Temperature - High	
k. Filter/Demineralizer Valve Room Area Ventilation ΔT - High	
l. Pump Suction Flow - High	
4. REACTOR CORE ISOLATION COOLING SYSTEM ISOLATION	N/A
a. RCIC Steam Line Flow - High	
b. RCIC Steam Supply Pressure - Low	
c. RCIC Turbine Exhaust Diaphragm Pressure - High	
d. RCIC Equipment Room Temperature - High	
e. RCIC Steam Line Tunnel Temperature - High	
f. RCIC Steam Line Tunnel ΔTemperature - High	
g. Drywell Pressure - High	
h. RCIC Equipment Room ΔTemperature - High	
5. Deleted.	

Note to SR 3.3.6.1.6

LA.2

TABLE 3.3.2-3 (Continued)

ISOLATION SYSTEM INSTRUMENTATION RESPONSE TIME

TRIP FUNCTION	RESPONSE TIME (Seconds)*
6. RHR SYSTEM SHUTDOWN COOLING MODE ISOLATION	N/A
a. Reactor Vessel Water Level - Low, Level 3	
b. Reactor Vessel (RHR Cut-In Permissive) Pressure - High	
c. RHR Pump Suction Flow - High	
B. MANUAL INITIATION	N/A
1. Inboard Valves	
2. Outboard Valves	
3. Inboard Valves	
4. Outboard Valves	
5. Inboard Valves	
6. Outboard Valves	
7. Outboard Valve	

LA.2

L.10

TABLE NOTATIONS

LA.2

SR 3.3.6.1.6 * Isolation system instrumentation response time for MSIVs only. No diesel generator delays assumed.

Isolation system instrumentation response time specified for the Trip Function actuating the MSIVs shall be added to MSIV isolation time to obtain ISOLATION SYSTEM RESPONSE TIME for each valve. LA.2

Note to SR 3.3.6.1.6 ## Sensor is eliminated from response time testing for the MSIV actuation logic circuits. Response time testing and conformance to the administrative limits for the remaining channel including trip unit and relay logic are required. LA.7

N/A Not Applicable. LA.2

Table 3.3.6.1-1

TABLE 3.2.1-1

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Function TRIP FUNCTION	SR 3.3.6.1.1 CHANNEL CHECK	SR 3.3.6.1.2 CHANNEL FUNCTIONAL TEST	SR 3.3.6.1.3 SR 3.3.6.1.4 CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
A.5 ~~A. AUTOMATIC INITIATION~~				
1, 2 1. PRIMARY CONTAINMENT ISOLATION			24 months LE.1	
a. Reactor Vessel Water Level				
2.f 1) Low, Level 3	S	Q	4 - R	1, 2, 3
2.a 2) Low Low, Level 2	NA	Q	4 - R	1, 2, 3
1.a, 2.e 3) Low Low Low, Level 1	S	Q	4 - R	1, 2, 3
2.b b. Drywell Pressure - High	NA	Q	4 - R	1, 2, 3
c. Main Steam Line				
1) DELETED				
1.b 2) Pressure - Low	NA	Q	Q - 3	1
1.c 3) Flow - High	NA	Q	3 - R 92 days M.6	1, 2, 3
d. DELETED				
1.d e. Condenser Vacuum - Low	NA	Q	4 - R	1, 2*, 3*
1.e f. Main Steam Line Tunnel Δ Temperature - High	NA	Q	4 - R	1, 2, 3
A.6 moved to ITS 3.3.6.2 2. SECONDARY CONTAINMENT ISOLATION			24 months LE.1	A.6 moved to ITS 3.3.6.2
2.c a. Reactor Building Vent Exhaust Plenum Radiation - High	S	Q	4 - R	1, 2, 3 and **
2.b b. Drywell Pressure - High	NA	Q	4 - R	1, 2, 3
2.a c. Reactor Vessel Water Level - Low Low, Level 2	NA	Q	4 - R	1, 2, 3 and #
2.d d. Fuel Pool Vent Exhaust Radiation - High	S	Q	4 - R	1, 2, 3 and **
4 3. REACTOR WATER CLEANUP SYSTEM ISOLATION			24 months LE.1	
M.3 add proposed Function 4.b 4.a a. Δ Flow - High	S	Q	4 - R	1, 2, 3
4.c b. Heat Exchanger Area Temperature - High	NA	Q	4 - R	1, 2, 3
4.d c. Heat Exchanger Area Ventilation ΔT - High	NA	Q	4 - R	1, 2, 3
4.l d. SLCS Initiation	NA NA	Q R A.12	4 - R NA	1, 2, 3 1, 2, 5 L.4
4.k e. Reactor Vessel Water Level - Low Low, Level 2	NA	Q 24 months LD.1	4 - R 24 months LE.1	1, 2, 3

A.11

Table 3.3.6.1-1

TABLE 4.3.2.1-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Function TRIP FUNCTION	SR 3.3.6.1.1 CHANNEL CHECK	SR 3.3.6.1.2 CHANNEL FUNCTIONAL TEST	SR 3.3.6.1.3 SR 3.3.6.1.4 CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
4.e f. Pump and Valve Area Temperature - High	NA	Q	4-Q	1, 2, 3
4.f g. Pump and Valve Area Ventilation ΔT - High	NA	Q	4-Q	1, 2, 3
4.g h. Holdup Pipe Area Temperature - High	NA	Q	4-Q	1, 2, 3
4.h i. Holdup Pipe Area Ventilation ΔT - High	NA	Q	4-Q	1, 2, 3
4.i j. Filter/Demineralizer Valve Room Area Temperature - High	NA	Q	4-Q	1, 2, 3
4.j k. Filter/Demineralizer Valve Room Area Ventilation ΔT - High	NA	Q	4-Q	1, 2, 3
~~l. Pump Suction Flow - High~~	~~S~~	~~Q~~	~~R~~	~~1, 2, 3~~
3 4. **REACTOR CORE ISOLATION COOLING SYSTEM ISOLATION**				
3.a a. RCIC Steam Line Flow - High	NA	Q	3-Q	1, 2, 3
3.c b. RCIC Steam Supply Pressure - Low	NA	Q	4-Q	1, 2, 3
3.d c. RCIC Turbine Exhaust Diaphragm Pressure - High	NA	Q	4-Q	1, 2, 3
3.e d. RCIC Equipment Room Temperature - High	NA	Q	4-Q	1, 2, 3
3.g e. RCIC Steam Line Tunnel Temperature - High	NA	Q	4-Q	1, 2, 3
3.h f. RCIC Steam Line Tunnel Δ Temperature - High	NA	Q	4-Q	1, 2, 3
3.i g. Drywell Pressure - High	NA	Q	4-Q	1, 2, 3
3.f h. RCIC Equipment Room Δ Temperature - High	NA	Q	4-Q	1, 2, 3

5. ~~Deleted.~~

24 months

LE.1

24 months

LE.1

LA.9

M.3

add proposed Function 3.b

A.1

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ITS 3.3.6.1

Table 3.3.6.1-1

TABLE 4.3.2.1-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	SR 3.3.6.1.1 CHANNEL CHECK	SR 3.3.6.1.2 CHANNEL FUNCTIONAL TEST	SR 3.3.6.1.3 SR 3.3.6.1.4 CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
5 ~~6.~~ RHR SYSTEM SHUTDOWN COOLING MODE ISOLATION			24 months LE.1	
5.a a. Reactor Vessel Water Level Low, Level 3	S	Q	~~R~~-4	L.6 ~~1, 2~~, 3 4,5 M.4
5.b b. Reactor Vessel (RHR Cut-in Permissive) Pressure-High	NA	Q	~~R~~-4	1, 2, 3
~~c. RHR Pump Suction Flow-High~~	~~NA~~	~~Q~~	~~Q~~	~~1, 2, 3~~ LA.8
B. MANUAL INITIATION A.5		A.12 24 months LD.1		
5.c, 1f, 2.g, 4.m 1. Inboard Valves	NA	R	NA	1, 2, 3
2. Outboard Valves	NA	R	NA	1, 2, 3
2.g 3. Inboard Valves	NA	R	NA	1, 2, 3 and **,#
4. Outboard Valves	NA	R	NA	1, 2, 3 and **,#
L.10 ~~5. Inboard Valves~~	~~NA~~	~~R~~	~~NA~~	~~1, 2, 3~~
~~6. Outboard Valves~~	~~NA~~	~~R~~	~~NA~~	~~1, 2, 3~~
3.j 7. Outboard Valve	NA	R A.12 24 months LD.1	NA	1, 2, 3

A.6 moved to ITS 3.3.6.2

Footnote (a): * Not required when all turbine stop valves are not full open.

** When handling irradiated fuel in the secondary containment and during CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

During CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

A.6 moved to ITS 3.3.6.2

A.1

ITS 3.3.6.1

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3/4.3.2 ISOLATION ACTUATION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

LCO 3.3.6.1 3.3.2 The isolation actuation instrumentation channels shown in Table 3.3.2-1 shall be OPERABLE ~~with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.2-2 and~~ with ISOLATION SYSTEM RESPONSE TIME ~~as shown in Table 3.3.2-3~~. LA.1 LA.2

SR 3.3.6.1.6

APPLICABILITY: As shown in Table 3.3.2-1.

ACTION: add proposed ACTIONS Note A.2

ACTIONS A and B

a. With an isolation actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.2-2, declare the channel inoperable until the channel is restored to OPERABLE status ~~with its trip setpoint adjusted consistent with the Trip Setpoint value~~. LA.1

ACTION A

b. With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System Requirement for one trip system, either

1. Place the inoperable channel(s) and/or trip system in the tripped condition* within

~~a) 1 hour for trip functions without an OPERABLE channel,~~ LB.1
b) 12 hours for trip functions common to RPS Instrumentation, and
c) 24 hours for trip functions not common to RPS Instrumentation,

or

ACTION C

2. Take the ACTION required by Table 3.3.2-1.

ACTION B

c. With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement for both trip systems,

1. Place at least one trip system** in the tripped condition*** within one hour, and

ACTION A

2. a) Place the inoperable channel(s) in the remaining trip system in the tripped condition*** within

~~1) 1 hour for trip functions without an OPERABLE channel,~~ LB.1
2) 12 hours for trip functions common to RPS Instrumentation, and
3) 24 hours for trip functions not common to RPS Instrumentation,

or

ACTION C

b) Take the ACTION required by Table 3.3.2-1.

~~* An inoperable channel need not be placed in the tripped condition where this would cause the Trip Function to occur.~~ LA.3 ~~In these cases, the inoperable channel shall be restored to OPERABLE status within 6 hours or the ACTION required by Table 3.3.2-1 for that Trip Function shall be taken.~~ LB.1

~~** If more channels are inoperable in one trip system than in the other, select that trip system to place in the tripped condition except when this would cause the Trip Function to occur.~~

~~*** An inoperable channel need not be placed in the tripped condition where this would cause the Trip Function to occur.~~ LA.3 ~~In these cases, the~~ ACTION B inoperable channel shall be restored to OPERABLE status within 1 hour or ACTION C the ACTION required by Table 3.3.2-1 for that Trip Function shall be taken. LB.1

A.1

INSTRUMENTATION

SURVEILLANCE REQUIREMENTS

Note 1 to Surveillance Requirements

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

LA.4

SR 3.3.6.1.5

4.3.2.2 LOGIC SYSTEM FUNCTIONAL TESTS ~~and simulated automatic operation~~ of all channels shall be performed at least once per ~~18~~ 24 months.

LD.1

SR 3.3.6.1.6

4.3.2.3 The ISOLATION SYSTEM RESPONSE TIME of ~~each~~ isolation trip function shown in Table 3.3.2-3 shall be demonstrated to be within its limit at least once per ~~18~~ 24 months. ~~Each test shall include at least one channel per trip system such that all channels are tested at least once every N times 18 months, where N is the total number of redundant channels in a specific isolation trip system.~~

A.3

LD.1

addressed by definition of STAGGERED TEST BASIS and A.4

Table 3.3.6.1-1

TABLE 3.3.2-1

ISOLATION ACTUATION INSTRUMENTATION

A.5   A.5   LA.5   A.6   LA.5   A.1

Function TRIP FUNCTION	VALVE GROUPS OPERATED BY SIGNAL	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM (b)	APPLICABLE OPERATIONAL CONDITION	ACTION
A. ~~AUTOMATIC INITIATION~~		Note 2 to Surveillance Requirements		
1,2 1. PRIMARY CONTAINMENT ISOLATION				
2.f, 2.a, 1.a, 2.e a. Reactor Vessel Water Level				
2.f (1) Low, Level 3	7	2	1, 2, 3	L.1 20 F
2.a (2) Low Low, Level 2	2, 3	2	1, 2, 3	20 H
1.a, 2.e (3) Low Low Low, Level 1	1, 10	2	1, 2, 3	20 D (group 1) F (group 10)
2.b b. Drywell Pressure - High	2, 7, 10	2	1, 2, 3	L.2 for group 1 20 H L.1 group 10
c. Main Steam Line				
1) DELETED				
1.b 2) Pressure - Low	1	2	M.1 1	23 E
1.c 3) Flow - High	1	2/line (a)	1, 2, 3	21 D
d. DELETED			Note 2 and 3 to Surveillance Req'ments	L.3
1.e e. Main Steam Line Tunnel ΔTemperature - High	1	2	1(c), 2(c), 3(c)	21 D
1.d f. Condenser Vacuum - Low	1	2	1, 2(a), 3(a) - Footnote (a)	21 D
2 2. SECONDARY CONTAINMENT ISOLATION	moved to ITS 3.3.6.2			moved to ITS 3.3.6.2
2.c a. Reactor Building Vent Exhaust Plenum Radiation - High	4(c)(e)	2	1, 2, 3 and **	24 F
2.b b. Drywell Pressure - High	4(c)(e)	2	1, 2, 3	24 H
2.a c. Reactor Vessel Water Level - Low Low, Level 2	4(c)(e)	2	1, 2, 3, and #	24 H
2.d d. Fuel Pool Vent Exhaust Radiation - High	4(c)(e)	2	1, 2, 3, and **	24 F

M.2 add proposed ACTIONS F and H as indicated

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ITS 3.3.6.1

Table 3.3.6.1-1

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

Function TRIP FUNCTION	VALVE GROUPS OPERATED BY SIGNAL	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM (b)	APPLICABLE OPERATIONAL CONDITION	ACTION
4. 3. REACTOR WATER CLEANUP SYSTEM ISOLATION		Note 2 to Surveillance Requirements		
4.a a. Δ Flow - High	5	1	1, 2, 3	22 F
4.c b. Heat Exchanger Area Temperature - High	5	1/heat exchanger	1, 2, 3	22 F
4.d c. Heat Exchanger Area Ventilation ΔT - High	5	1/heat exchanger	1, 2, 3	22 F
4.l d. SLCS Initiation	5 (1) A.9 footnote (b)	2 NA	1, 2, 3 L.4	22 I L.11
4.k e. Reactor Vessel Water Level - Low Low, Level 2	5	2	1, 2, 3	22 F
4.e f. Pump and Valve Area Temperature - High	5	1/area	1, 2, 3	22 F
4.f g. Pump and Valve Area Ventilation ΔT - High	5 LA.5	1/area	1, 2, 3	22 F
4.g h. Holdup Pipe Area Temperature - High	5	1	1, 2, 3	22 F
4.h i. Holdup Pipe Area Ventilation ΔT - High	5	1	1, 2, 3	22 F
4.i j. Filter/Demineralizer Valve Room Area Temperature - High	5	1	1, 2, 3	22 F
4.j k. Filter/Demineralizer Valve Room Area Ventilation ΔT - High	5	1	1, 2, 3	22 F
~~l. Pump Suction Flow - High~~	~~5~~	~~1~~	~~1, 2, 3~~	~~22~~ LA.9

add proposed Function 4.b

M.3

A.1

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ITS 3.3.6.1

Table 3.3.6.1-1

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

Function TRIP FUNCTION	LA.5 VALVE GROUPS OPERATED BY SIGNAL	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM (b) Note 2 to Surveillance Requirements	APPLICABLE OPERATIONAL CONDITION	ACTION
3 4. REACTOR CORE ISOLATION COOLING SYSTEM ISOLATION				
3.a a. RCIC Steam Line Flow - High	8	1	1, 2, 3	22 F
3.c b. RCIC Steam Supply Pressure - Low	8, 9[(g)]	2	1, 2, 3	22 F
3.d c. RCIC Turbine Exhaust Diaphragm Pressure - High	8	2	1, 2, 3	22 F
3.e d. RCIC Equipment Room Temperature - High	8	1	1, 2, 3	22 F
3.g e. RCIC Steam Line Tunnel Temperature - High	8	1	1, 2, 3	22 F
3.h f. RCIC Steam Line Tunnel Δ Temperature - High	8	1	1, 2, 3	22 F
3.i g. Drywell Pressure - High	9[(g)]	2	1, 2, 3	22 F
3.f h. RCIC Equipment Room Δ Temperature - High	8	1	1, 2, 3	22 F

LA.5

add proposed Function 3.b

M.3

A.1

ITS 3.3.6.1

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Table 3.3.6.1-1

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

Note 2 to Surveillance Req'ments

Function TRIP FUNCTION	LA.5 VALVE GROUPS OPERATED BY SIGNAL	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM (b)	APPLICABLE OPERATIONAL CONDITION	ACTION
~~5. DELETED~~				
5. 6. RHR SYSTEM SHUTDOWN COOLING MODE ISOLATION		M.4 add proposed Note (c)	M.4 4 and 5	
5.a a. Reactor Vessel Water Level - Low, Level 3	LA.5 6	2	L.6 1/2, 3	L.8 25 J
5.b b. Reactor Vessel (RHR Cut-in Permissive) Pressure - High	6	1	1, 2, 3	L.7 25 F
~~c. RHR Pump Suction Flow - High~~	~~6~~	~~1~~	~~1, 2, 3~~	~~25~~ LA.8
A.5 B. MANUAL INITIATION		(2) M.5 for group 1	moved to ITS 3.3.6.2	
1.f, 2.g, 4.m, 5.c 1. ~~Inboard Valves~~ LA.5	~~1, 2, 5, 6, 7~~	(1)/group	1, 2, 3	26 G
1.f, 2.g, 4.m, 5.c 2. ~~Outboard Valves~~	1, 2, 5, 6	(1)/group	1, 2, 3	26
2.g 3. ~~Inboard Valves~~	4(c)(e) A.6 moved to ITS 3.3.6.2	1/group	1, 2, 3 A.6 and **,#	26
2.g 4. ~~Outboard Valves~~	4(c)(e)	1/group	1, 2, 3 and **,#	26
L.10 ~~5. Inboard Valves~~	~~4, 8, 9~~	~~1/valve~~	~~1, 2, 3~~	~~26~~
~~6. Outboard Valves~~	~~3, 8, 9~~	~~1/valve~~	~~1, 2, 3~~	~~26~~
3.j 7. ~~Outboard Valve~~	8(h) footnote (b) LA.5	1/group	1, 2, 3	26 G L.9

include Group 10 with ITS Function 2.g M.7

A6 moved to ITS 3.3.6.2

A.1

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ITS 3.3.6.1

A.1

ITS 3.3.6.1

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

add proposed Required Action D.1 L.2

ACTION STATEMENTS

ACTIONS D,F, and H — ACTION 20 - Be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours. add proposed ACTION F L.1

ACTION D — ACTION 21 - ~~Be in at least STARTUP~~ with the associated isolation valves closed within ~~6~~ 12 hours or be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours. L.3 add proposed Required Action I.1 L.11

ACTIONS F and I — ACTION 22 - Close the affected system isolation valves within 1 hour ~~and declare the affected system inoperable~~. A.8

ACTION E — ACTION 23 - Be in at least STARTUP within 6 hours.

A.6 moved to ITS 3.3.6.2

ACTION 24 - Establish SECONDARY CONTAINMENT INTEGRITY with the standby gas treatment system operating within 1 hour.

L.7 close

ACTIONS F and J — ACTION 25 - ~~Lock~~ the affected system isolation valves closed within 1 hour ~~and declare the affected system inoperable~~. L.8 A.8 add proposed Required Actions J.1 and J.2

ACTION 26 - ~~Provided that the manual initiation function is OPERABLE for each other group valve, inboard or outboard, as applicable, in each line,~~ L.9

ACTION G — restore the manual initiation function to OPERABLE status within 24 hours; ~~otherwise, restore the manual initiation function to OPERABLE status within 8 hours;~~ otherwise:

ACTION H — a. Be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours, or

ACTION G — b. Close the affected system isolation valves ~~within the next hour~~ ~~and declare the affected system inoperable~~. A.8

TABLE NOTATIONS

Table 3.3.6.1-1 Footnote (a)

* May be bypassed with all turbine stop valves not full open.

** When handling irradiated fuel in the secondary containment and during CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

\# During CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

~~(a) Deleted.~~

Note 2 to Surveillance Requirement

(b) A channel may be placed in an inoperable status for up to 6 hours for required surveillance without placing the channel in the tripped condition provided ~~at least one other OPERABLE channel in the same trip system is monitoring that parameter. In addition for those trip systems with a design providing only one channel per trip system, the channel may be placed in an inoperable status for up to 8 hours for required surveillance testing without placing the channel in the tripped condition provided that the redundant isolation valve, inboard or outboard, as applicable, in each line is operable and all required actuation instrumentation for that redundant valve is OPERABLE, or place the trip system in the tripped condition.~~ the associated Function maintains isolation capability LB.2

A.6 moved to ITS 3.3.6.2

(c) Also actuates the standby gas treatment system.

(d) ~~A channel is OPERABLE if 2 of 4 instruments in that channel are OPERABLE.~~ M.1

(e) Also actuates secondary containment ventilation isolation dampers per Table 3.6.5.2-1.

Table 3.3.6.1 footnote (b) (f) ~~Closes only RWCU system inlet outboard valve.~~ only inputs into one of two trip systems LA.5

A.1

ITS 3.3.6.1

TABLE 3.3.2-1 (Continued)

NOTES (Continued)

LA.5

Table 3.3.6.1-1 footnote (b)

(g) Requires RCIC steam supply pressure-low coincident with drywell pressure-high.

(h) Manual initiation isolates 2E51-F008 only and only with a coincident reactor vessel water level-low, level 2, signal.

LA.5

Notes 2 and 3 to ACTIONS

(i) Both channels of each trip system may be placed in an inoperable status for up to 4 hours for required reactor building ventilation system corrective maintenance, filter changes, damper cycling and surveillance tests, other than Surveillance Requirement 4.6.5.1.c, without placing the trip system in the tripped condition.

(j) Both channels of each trip system may be placed in an inoperable status for up to 12 hours due to loss of reactor building ventilation or for performance of Surveillance Requirement 4.6.5.1.c without placing the trip system in the tripped condition.

Only inputs into one of two trip systems

Table 3.3.6.1-1

TABLE 3.3.2-2

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

A.5 1, 2

A.6 moved to ITS 3.3.6.2

M.3 add proposed Function 4.b

LA.1 LF.1 A.1 A.11

Function TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
~~A. AUTOMATIC INITIATION~~		
1. PRIMARY CONTAINMENT ISOLATION		
a. Reactor Vessel Water Level		
2.f 1) Low, Level 3	≥ 12.5 inches*	≥ 11.0 inches
2.a 2) Low Low, Level 2	≥ -50 inches*	≥ -57 inches
1.a, 2.e 3) Low Low Low, Level 1	≥ -129 inches*	≥ -136 inches
2.b b. Drywell Pressure - High	≤ 1.69 psig	≤ 1.89 psig
c. Main Steam Line		
1) DELETED		
1.b 2) Pressure - Low	≥ 854 psig	≥ 834 psig
1.c 3) Flow - High	≤ 111 psid	≤ 116 psid
d. DELETED		
1.e e. Main Steam Line Tunnel Δ Temperature - High	≤ 65°F	≤ 70°F
1.d f. Condenser Vacuum - Low	> 7 inches Hg vacuum	≥ 5.5 inches Hg vacuum
2. SECONDARY CONTAINMENT ISOLATION		
2.c a. Reactor Building Vent Exhaust Plenum Radiation - High	≤ 10 mr/h	≤ 15 mr/h
2.b b. Drywell Pressure - High	≤ 1.69 psig	≤ 1.89 psig
2.a c. Reactor Vessel Water Level - Low Low, Level 2	≥ -50 inches*	≥ -57 inches
2.d d. Fuel Pool Vent Exhaust Radiation - High	≤ 10 mr/h	≤ 15 mr/h
4 3. REACTOR WATER CLEANUP SYSTEM ISOLATION		
4.a a. ΔFlow - High	≤ 70 gpm	≤ 87.5 gpm
4.c b. Heat Exchanger Area Temperature - High	≤ 149°F	≤ 156.8°F
4.d c. Heat Exchanger Area Ventilation ΔT - High	≤ 33°F	≤ 40.3°F
4.l d. SLCS Initiation	N.A.	N.A.
4.k e. Reactor Vessel Water Level - Low Low, Level 2	≥ -50 inches*	> -57 inches

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ITS 3.3.6.1

Table 3.3.6.1-1

TABLE 3.3.2-2 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

Function TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
4.e f. Pump and Valve Area Temperature - High	≤ 201°F	≤ 209°F
4.f g. Pump and Valve Area Ventilation ΔT - High	≤ 86°F	≤ 92.5°F
4.g h. Holdup Pipe Area Temperature - High	≤ 201°F	≤ 209°F
4.h i. Holdup Pipe Area Ventilation ΔT - High	≤ 86°F	≤ 92.5°F
4.i j. Filter/Demineralizer Valve Room Area Temperature - High	≤ 201°F	≤ 209°F
4.j k. Filter/Demineralizer Valve Room Area Ventilation ΔT - High	≤ 86°F	≤ 92.5°F
~~l. Pump Suction Flow - High~~	~~≤ 560 gpm~~	~~≤ 610 gpm~~

LA.1

LF.1

LA.9

A.1

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ITS 3.3.6.1

Table 3.3.6.1-1

TABLE 3.3.2-2 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

Function TRIP FUNCTION	~~TRIP SETPOINT~~ LA.1	ALLOWABLE VALUE LF.1
3 4. REACTOR CORE ISOLATION COOLING SYSTEM ISOLATION		
3.a a. RCIC Steam Line Flow - High	~~≤ 290% of rated flow, 178" H_2O~~	≤ ~~295% of rated flow~~ A.7 185" H_2O
3.c b. RCIC Steam Supply Pressure - Low	~~≥ 57 psig~~	≥ 53 psig
3.d c. RCIC Turbine Exhaust Diaphragm Pressure - High	~~≤ 10.0 psig~~	≤ 20.0 psig
3.e d. RCIC Equipment Room Temperature - High	~~≤ 200°F~~	≤ 206°F
3.g e. RCIC Steam Line Tunnel Temperature - High	~~≤ 200°F~~	≤ 206°F
3.h f. RCIC Steam Line Tunnel Δ Temperature - High	~~≤ 117°F~~	≤ 123°F
3.i g. Drywell Pressure - High	~~≤ 1.69 psig~~	≤ 1.89 psig
3.f h. RCIC Equipment Room ΔT Temperature - High	~~≤ 120°F~~	≤ 126°F

5. DELETED

add proposed Function 3.b M.3

A.1

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ITS 3.3.6.1

Table 3.3.6.1-1

TABLE 3.3.2-2 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

Function TRIP FUNCTION		TRIP SETPOINT	ALLOWABLE VALUE
5	6. RHR SYSTEM SHUTDOWN COOLING MODE ISOLATION		
5.a	a. Reactor Vessel Water Level - Low, Level 3	≥ 12.5 inches* LA.1	≥ 11.0 inches* A.11
5.b	b. Reactor Vessel (RHR Cut-in Permissive) Pressure - High	≤ 135 psig**	≤ 145 psig** LA.6
	c. ~~RHR Pump Suction Flow - High~~	~~≤ 180" H_2O~~	~~≤ 186" H_2O~~ LA.8
A.5	B. ~~MANUAL INITIATION~~	N.A. LA.1	N.A.
5.c, 1.f, 2.g, 4.m	1. Inboard Valves 2. Outboard Valves		
2.g	3. Inboard Valves 4. Outboard Valves		
L.10	5. Inboard Valves 6. Outboard Valves		
3.j	7. Outboard Valve		

A.11 ~~*See Bases Figure B 3/4 3-1~~

LA.6 ~~**Corrected for cold water head with reactor vessel flooded.~~

N.A. - Not Applicable.

A.1

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ITS 3.3.6.1

A.1

ITS 3.3.6.1

TABLE 3.3.2-3

ISOLATION SYSTEM INSTRUMENTATION RESPONSE TIME

TRIP FUNCTION	RESPONSE TIME (Seconds)# — Note to SR 3.3.6.1.6
A. AUTOMATIC INITIATION	
1. PRIMARY CONTAINMENT ISOLATION	
a. Reactor Vessel Water Level	
1) Low, Level 3	N/A
2) Low Low, Level 2	N/A
3) Low Low Low, Level 1	≤ 1.0*,#
b. Drywell Pressure - High	N/A
c. Main Steam Line	
1) DELETED	
2) Pressure - Low	≤ 2.0*,#
3) Flow - High	≤ 0.5*,#
d. DELETED	
e. Condenser Vacuum - Low	N/A
f. Main Steam Line Tunnel ΔTemperature - High	N/A
2. SECONDARY CONTAINMENT ISOLATION	N/A
a. Reactor Building Vent Exhaust Plenum Radiation - High	
b. Drywell Pressure - High	
c. Reactor Vessel Water Level - Low, Level 2	
d. Fuel Pool Vent Exhaust Radiation - High	
3. REACTOR WATER CLEANUP SYSTEM ISOLATION	N/A
a. ΔFlow - High	
b. Heat Exchanger Area Temperature - High	
c. Heat Exchanger Area Ventilation ΔT-High	
d. SLCS Initiation	
e. Reactor Vessel Water Level - Low Low, Level 2	
f. Pump and Valve Area Temperature - High	
g. Pump and Valve Area Ventilation ΔT - High	
h. Holdup Pipe Area Temperature - High	
i. Holdup Pipe Area Ventilation ΔT - High	

A.1

TABLE 3.3.2-3 (Continued)

ISOLATION SYSTEM INSTRUMENTATION RESPONSE TIME

TRIP FUNCTION	RESPONSE TIME (Seconds)#
j. Filter/Demineralizer Valve Room Area Temperature - High	
k. Filter/Demineralizer Valve Room Area Ventilation ΔT - High	
l. Pump Suction Flow - High	
4. REACTOR CORE ISOLATION COOLING SYSTEM ISOLATION	N/A
a. RCIC Steam Line Flow - High	
b. RCIC Steam Supply Pressure - Low	
c. RCIC Turbine Exhaust Diaphragm Pressure - High	
d. RCIC Equipment Room Temperature - High	
e. RCIC Steam Line Tunnel Temperature - High	
f. RCIC Steam Line Tunnel ΔTemperature - High	
g. Drywell Pressure - High	
h. RCIC Equipment Room ΔTemperature - High	
5. DELETED	
6. RHR SYSTEM SHUTDOWN COOLING MODE ISOLATION	N/A
a. Reactor Vessel Water Level - Low, Level 3	
b. Reactor Vessel (RHR Cut-In Permissive) Pressure - High	
c. RHR Pump Suction Flow - High	
B. MANUAL INITIATION	N/A
1. Inboard Valves	
2. Outboard Valves	
3. Inboard Valves	
4. Outboard Valves	
5. Inboard Valves	
6. Outboard Valves	
7. Outboard Valve	

LA.2

L.10

TABLE NOTATIONS

LA.2

SR 3.3.6.1.6 * Isolation system instrumentation response time for MSIVs only. No diesel generator delays assumed.

\# Isolation system instrumentation response time specified for the Trip Function actuating the MSIVs shall be added to MSIV isolation time to obtain ISOLATION SYSTEM RESPONSE TIME for each valve. LA.2

Note to SR 3.3.6.1.6 ## Sensor is eliminated from response time testing for the MSIV actuation logic circuits. Response time testing and conformance to the administrative limits for the remaining channel including trip unit and relay logic are required. LA.7

N/A Not Applicable. LA.2

Table 3.3.6.1-1

TABLE 3.2.1-1

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

ITS	Function TRIP FUNCTION	SR 3.3.6.1.1 CHANNEL CHECK	SR 3.3.6.1.2 CHANNEL FUNCTIONAL TEST	SR 3.3.6.1.3 SR 3.3.6.1.4 CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
A.5	A. AUTOMATIC INITIATION				
1, 2	1. PRIMARY CONTAINMENT ISOLATION				
	a. Reactor Vessel Water Level			24 months LE.1	
2.f	1) Low, Level 3	S	Q	4 - R	1, 2, 3
2.a	2) Low Low, Level 2	NA	Q	4 - R	1, 2, 3
1.a, 2.e	3) Low Low Low, Level 1	S	Q	4 - R	1, 2, 3
2.b	b. Drywell Pressure - High	NA	Q	4 - Q	1, 2, 3
	c. Main Steam Line				1, 2, 3
	1) DELETED				
1.b	2) Pressure - Low	NA	Q	3 - Q	1
1.c	3) Flow - High	NA	Q	3 - R 92 days M.6	1, 2, 3
1.d	d. DELETED				
1.e	e. Condenser Vacuum - Low	NA	Q	4 - R	1, 2*, 3*
	f. Main Steam Line Tunnel Δ Temperature - High	NA	Q	4 - R	1, 2, 3
A.6 moved to ITS 3.3.6.2	2. SECONDARY CONTAINMENT ISOLATION			24 months LE.1	
2.c	a. Reactor Building Vent Exhaust Plenum Radiation - High	S	Q	4 - R	1, 2, 3 and **
2.b	b. Drywell Pressure - High	NA	Q	4 - R	1, 2, 3
2.a	c. Reactor Vessel Water Level - Low Low, Level 2	NA	Q	4 - R	1, 2, 3, and #
2.d	d. Fuel Pool Vent Exhaust Radiation - High	S	Q	4 - R	1, 2, 3 and **
M.3 add proposed Function 4.b 4	3. REACTOR WATER CLEANUP SYSTEM ISOLATION			24 months LE.1	A.6 moved to ITS 3.3.6.2
4.a	a. Δ Flow - High	S	Q	4 - R	1, 2, 3
4.c	b. Heat Exchanger Area Temperature - High	NA	Q	4 - R	1, 2, 3
4.d	c. Heat Exchanger Area Ventilation ΔT - High	NA	Q	4 - R	1, 2, 3
4.l	d. SLCS Initiation	NA	R A.12 24 months LD.1	NA	1, 2, 3 L.4
4.k	e. Reactor Vessel Water Level - Low Low, Level 2	NA	Q	4 - R 24 months LE.1	1, 2, 3

A.1

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3.3.6.1-1

TABLE 4.3.2.1-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Function	TRIP FUNCTION	SR 3.3.6.1.1 CHANNEL CHECK	SR 3.3.6.1.2 CHANNEL FUNCTIONAL TEST	SR 3.3.6.1.3 SR 3.3.6.1.4 CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
4.e	f. Pump and Valve Area Temperature - High	NA	Q	4-Q	1, 2, 3
4.f	g. Pump and Valve Area Ventilation ΔT - High	NA	Q	4-Q	1, 2, 3
4.g	h. Holdup Pipe Area Temperature - High	NA	Q	4-Q	1, 2, 3
4.h	i. Holdup Pipe Area Ventilation ΔT - High	NA	Q	4-Q	1, 2, 3
4.i	j. Filter/Demineralizer Valve Room Area Temperature - High	NA	Q	4-Q	1, 2, 3
4.j	k. Filter/Demineralizer Valve Room Area Ventilation ΔT - High	NA	Q	4-Q	1, 2, 3
	~~l. Pump Suction Flow - High~~	~~S~~	~~Q~~	~~R~~	~~1, 2, 3~~
3	4. REACTOR CORE ISOLATION COOLING SYSTEM ISOLATION				
3.a	a. RCIC Steam Line Flow - High	NA	Q	Q-3	1, 2, 3
3.b	b. RCIC Steam Supply Pressure - Low	NA	Q	4-Q	1, 2, 3
3.d	c. RCIC Turbine Exhaust Diaphragm Pressure - High	NA	Q	4-Q	1, 2, 3
3.e	d. RCIC Equipment Room Temperature - High	NA	Q	4-Q	1, 2, 3
3.g	e. RCIC Steam Line Tunnel Temperature - High	NA	Q	4-Q	1, 2, 3
3.h	f. RCIC Steam Line Tunnel Δ Temperature - High	NA	Q	4-Q	1, 2, 3
3.i	g. Drywell Pressure - High	NA	Q	4-Q	1, 2, 3
3.f	h. RCIC Equipment Room Δ Temperature - High	NA	Q	4-Q	1, 2, 3

~~5. DELETED~~

24 months LE.1

24 months LE.1

LA.9

A.1

M.3 add proposed Function 3.b

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ITS 3.3.6.1

3.3.6.1-1

TABLE 4.3.2.1-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Function TRIP FUNCTION	SR 3.3.6.1.1 CHANNEL CHECK	SR 3.3.6.1.2 CHANNEL FUNCTIONAL TEST	SR 3.3.6.1.3 SR 3.3.6.1.4 CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
5 6. RHR SYSTEM SHUTDOWN COOLING MODE ISOLATION				
5.a a. Reactor Vessel Water Level - Low, Level 3	S	Q	4 ~~R~~ 24 months LE.1	L.6 ~~1, 2~~ 3 ~~4, 5~~ M.4
5.b b. Reactor Vessel (RHR Cut-in Permissive) Pressure-High	NA	Q	4 ~~Q~~	1, 2, 3
~~c. RHR Pump Suction Flow-High~~	~~NA~~	~~Q~~	~~Q~~	~~1, 2, 3~~ LA.8
A.5 ~~B. MANUAL INITIATION~~				
5.c, 1.f, 2.g, 4.m 1. Inboard Valves	NA	~~R~~ 24 months LD.1 A.12	NA	1, 2, 3
2. Outboard Valves	NA	~~R~~	NA	1, 2, 3
2.g 3. Inboard Valves	NA	~~R~~	NA	1, 2, 3 and **, #
4. Outboard Valves	NA	~~R~~	NA	1, 2, 3 and **, #
L.10 ~~5. Inboard Valves~~	~~NA~~	~~R~~	~~NA~~	~~1, 2, 3~~
~~6. Outboard Valves~~	~~NA~~	~~R~~	~~NA~~	~~1, 2, 3~~
3.j 7. Outboard Valve	NA	~~R~~ 24 months LD.1 A.12	NA	1, 2, 3

A.6 moved to ITS 3.3.6.2

D.1

Footnote (a)

* Not required when all turbine stop valves are not full open.

** When handling irradiated fuel in the secondary containment and during CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

\# During CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

A.6 moved to ITS 3.3.6.2

ADMINISTRATIVE

A.1 In the conversion of the LaSalle 1 and 2 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1434, Rev. 1 (i.e., the Improved Standard Technical Specifications (ISTS)).

A.2 This proposed change to the CTS 3.3.2 Actions provides more explicit instructions for proper application of the Actions for Technical Specification compliance. In conjunction with the proposed Specification 1.3, "Completion Times," the ITS 3.3.6.1 ACTIONS Note ("Separate Condition entry is allowed for each....") and the wording for ACTION A ("One or more channels...") and ACTION B ("One or more automatic Functions...") provides direction consistent with the intent of the existing Actions for an inoperable isolation instrumentation channel. It is intended that each inoperable channel is allowed a certain time to complete the Required Actions. Since this change only provides more explicit direction of the current interpretation of the existing specifications, this change is considered administrative.

A.3 CTS 4.3.2.3 states to demonstrate the response time for "each" isolation Trip Function. The response times for most of the Primary Containment Isolation Functions (all except CTS Table 3.3.2-3 Trip Functions A.1.a.3), A.1.c.2), and A.1.c.3)) are listed as "N/A" in CTS Table 3.3.2-3. Therefore, these response time tests have been deleted (by not referencing the proposed response time SR to these Functions), and their deletion is considered administrative since explicit response times are not included for these Functions in CTS Table 3.3.2-3.

A.4 The statement concerning the details on the frequency of performing CTS 4.3.2.3, the Isolation System Response Time test, has been deleted since it is covered by the definition of STAGGERED TEST BASIS, in Section 1.1, Definitions.

A.5 The Section A, Automatic Initiation, and Section B, Manual Initiation, titles in CTS Table 3.3.2-1, 3.3.2-2, and 4.3.2.1-1 have been deleted and the appropriate automatic and manual Functions have been grouped along with the appropriate type of primary containment isolation as indicated in proposed Table 3.3.6.1-1. In addition, Section A.1, Primary Containment Isolation, in CTS Tables 3.3.2-1, 3.3.2-2, and 4.3.2.1-1 are divided into two sections: Main Steam Line Isolation (Function 1), and Primary Containment Isolation (Function 2) in ITS Table

ADMINISTRATIVE

A.5 (cont'd) 3.3.6.1-1. The appropriate individual Functions are placed with the proper isolation. Since the current requirements are maintained (except as addressed in the Discussion of Changes below). This change is considered to be administrative in nature.

A.6 The requirements identified in CTS Tables 3.3.2-1, 3.3.2-2, 3.3.2-3, and 4.3.2.1-1 related to Secondary Containment Isolation (as described in footnotes (c), (e), **, and # to Table 3.3.2-1 and footnotes ** and # to Table 4.3.2.1-1) have been moved to ITS 3.3.6.2, Secondary Containment Isolation Instrumentation. Any technical changes to these requirements are addressed in the Discussion of Changes for ITS 3.3.6.2.

A.7 CTS Table 3.3.2-2 identifies the Allowable Value for the RCIC Steam Line Flow — High trip function as "$\leq$ 295% of rated flow, 185" H_2O". These are equivalent values and considered redundant. Only the "185" H2O" is retained for ITS Table 3.3.6.1-1, Function 3.a. This value provides sufficient detail to ensure adequate health and safety of the public. Since there is no change in requirement, this is a change in presentation only and is considered administrative.

A.8 An action to "declare the affected system inoperable," as presented in CTS Table 3.3.2-1 Actions 22, 25, and 26, is an unnecessary reminder that other Technical Specifications may be affected. This is essentially a "cross reference" between Technical Specifications that has been determined to be adequately provided through training. In addition, the definition of "OPERABILITY in ITS Section 1.1 would also ensure that the affected systems rendered inoperable by isolation of an affected line are declared inoperable. Therefore, this deletion is administrative.

A.9 CTS Table 3.3.2-1 for SLCS Initiation does not specify the minimum OPERABLE channels per trip system. The specified value in the Table is NA. Since two channels (one from each SLC pump) provide input into the logic circuit, 2 channels have been included in proposed ITS Table 3.3.6.1-1 (Function 4.l), however footnote (b) has been added which states that the channels only input into one of two trip systems, consistent with CTS Table 3.3.2-1 footnote (f). This logic arrangement will ensure that no single instrument failure can preclude the isolation function since the LaSalle 1 and 2 accident analysis requires both SLC pumps to be manually started to inject boron. Since this addition simply clarifies the current interpretation of the existing requirement, this change is considered administrative.

ADMINISTRATIVE (continued)

A.10 Not used.

A.11 CTS Table 3.3.2-2 Footnote * refers to Bases Figure 3/4.3-1. This Figure is providing information as to what reactor vessel water level the various reactor water instruments actuate, in comparison to one another. This information is already essentially contained in the Allowable Value column of this Table. Therefore, this reference is being deleted and is considered administrative.

A.12 The CHANNEL FUNCTIONAL TEST (CFT) requirement for CTS Table 4.3.2.1-1 Trip Function A.3.d, SLCS Initiation, and for the Manual Initiation Trip Function B, have been deleted since they are redundant to the LOGIC SYSTEM FUNCTIONAL TEST (LSFT). The SLC System Initiation and the Manual Initiation channels have no adjustable setpoints, but are based on switch manipulation. The LSFT (proposed SR 3.3.6.1.5), which applies to ITS Table 3.3.6.1-1 Function 4.l (SLC System Initiation) and Manual Initiation Functions 1.f, 2.g, 3.j, 4.m, and 5.c (Manual Initiation), tests all contacts and will provide proper testing of the channels tested by a CFT. Therefore, this deletion is considered administrative.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 CTS 3.3.2-1 Function A.1.c.3), Main Steam Line Flow—High requires 2 channels per trip system for each main steam line. However, CTS Table 3.3.2-1 footnote (d) specifies that a channel is OPERABLE if 2 of 4 instruments in that channel are OPERABLE. This Note has been deleted since 2 channels per steam line are required to be OPERABLE in each trip system to ensure the single failure criteria is preserved. This Function is credited in the main steam line break accident and all channels must be OPERABLE to support this event. Since this change deletes the allowances of the Note, this change is considered more restrictive on plant operations, however necessary to ensure the safety analysis is met.

M.2 CTS Table 3.3.2-1 ACTION 24 for Trip Functions A.2.a, A.2.b, A.2.c, and A.2.d provides no actions for the Group 4 primary containment isolation valves (PCIVs) that are affected. It only provides actions for the secondary containment isolation valves and SGT System. Therefore, appropriate actions (proposed ITS 3.3.6.1 ACTIONS F and H) have been added. ACTION H applies to the Reactor Vessel Water Level—Low Low, Level 2 and Drywell

TECHNICAL CHANGES - MORE RESTRICTIVE

M.2 (cont'd) Pressure—High Functions. ACTION H will require the plant to be in MODE 3 in 12 hours and MODE 4 in 36 hours. ACTION F applies to the Reactor Building Ventilation Exhaust Radiation—High and the Fuel Pool Ventilation Exhaust Radiation—High Functions. ACTION F will require the isolation of the affected penetration flow path(s) within 1 hour. These proposed actions are appropriate based on the penetrations for which these Functions provide isolation. This change is an additional restriction on plant operation and is consistent with NUREG-1434, Rev. 1.

M.3 Two additional Functions have been added, ITS Table 3.3.6.1-1 Function 3.b and Function 4.b. These Functions are Timer Functions that delay initiation of the RCIC Steam Flow—High and RWCU Differential Flow—High Functions, respectively. Currently, these Functions isolate the RCIC or RWCU PCIVs, as applicable only after a time delay. The actual time delay Allowable Value is currently controlled in plant procedures. Appropriate ACTIONS and Surveillance Requirements have also been added. This change is an additional restriction on plant operation necessary to prevent false RCIC isolation during system startup transients.

M.4 The CTS Tables 3.3.2-1 and 4.3.2.1-1 Trip Function A.6.a Applicability for the Reactor Vessel Water Level—Low, Level 3 Function has been changed to include MODES 4 and 5. This Function isolates the RHR Shutdown Cooling (SDC) System valves (Group 6) and these new Applicabilities will protect against potential draining of the reactor vessel through the RHR SDC suction line during shutdown conditions, which is when the RHR SDC System is normally operated. In addition, when RHR System integrity is maintained in MODES 4 and 5, only one of the two low water level instrumentation trip systems will be required. This is provided in ITS Table 3.3.6.1-1 Note (c). With the piping intact and no maintenance being performed that has a potential for draining the reactor vessel through the RHR System, both trip systems are not required since one trip system can isolate the suction piping (by closing one of the suction isolation valves). An appropriate ACTION (ITS 3.3.6.1 ACTION J) has also been added for when the channel(s) of the Function is inoperable in MODES 4 and 5. This is an additional restriction on plant operations and is consistent with the BWR ISTS, NUREG-1434, Rev. 1.

TECHNICAL CHANGES - MORE RESTRICTIVE (continued)

M.5 The number of required channels for the Group 1 MSIV Manual Initiation Function (CTS Table 3.3.2-1 Trip Function B.1 and B.2) has been increased from "1" per trip system to "2" per trip system in ITS Table 3.3.6.1-1 Function 1.f. The design of the Group 1 logic for MSIVs includes two manual push buttons per trip system, with one from each trip system being required to actuate the MSIVs. Currently, only one channel per trip system is required. Therefore, this part of the change is more restrictive on plant operation and will ensure MSIVs can be manually actuated.

M.6 CTS Table 4.3.2-1 specifies "R" (i.e., once per 18 months) for the CHANNEL CALIBRATION of Function A.1.c.3), Primary Containment Isolation - Main Steam Line Flow—High. ITS Table 3.3.6.1-1 requires a CHANNEL CALIBRATION of this same Function (ITS Table 3.3.6.1-1 Function 1.c) every 92 days. This change is required as a result of a surveillance history review performed to support surveillance interval extensions to 24 months. The differential pressure switches associated with this Function were shown to have a history of failures. Therefore, the CHANNEL CALIBRATION of the channels of this Function is currently being performed once per 92 days. This change represents an additional restriction on plant operation necessary to ensure the subject Function is maintained OPERABLE between CHANNEL CALIBRATIONS.

M.7 CTS Table 3.3.2-1, Trip Functions B.1 and B.2 require the Manual Initiation function for primary containment isolation valves in Groups 1, 2, 5, 6 and 7. Group 10 is added to be included with ITS Table 3.3.6.1-1 Function 2.g. The two channels associated with this Manual Initiation concurrently isolate Groups 2, 4, 7 and 10. Of these, only Groups 2, 4 and 7 are currently identified in CTS. Therefore, this change is more restrictive on plant operation and will ensure these PCIVs are included in the manual actuation capability.

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

LA.1 CTS 3.3.2 requires the Trip Setpoints to be set consistent with the values shown in the Trip Setpoint column of Table 3.3.2-2. CTS 3.3.2 Action a requires inoperable channels to be restored to OPERABLE status with trip setpoints adjusted consistent with the Trip Setpoint values. Trip Setpoints are operational details that are not directly related to the OPERABILITY of the instrumentation.

TECHNICAL CHANGES - LESS RESTRICTIVE

LA.1 (cont'd) These details are to be relocated to the Technical Requirements Manual (TRM) and the references to these setpoints in CTS 3.3.2 are deleted. The Allowable Value is the required limitation for the associated Function and this value is retained in the Technical Specifications. These relocated Trip Setpoints are not required to be in the Technical Specifications to provide adequate protection of the public health and safety. The TRM will be incorporated into the LaSalle 1 and 2 UFSAR at ITS implementation. Any changes to the relocated Trip Setpoints in the TRM will be controlled by the provisions of 10 CFR 50.59.

LA.2 CTS Table 3.3.2-3, isolation System Instrumentation Response Times, and associated "*" and "#" footnotes are to be relocated to the Technical Requirements Manual (TRM). The response times and associated information included in CTS Table 3.3.2-3 are details of Isolation System Instrumentation OPERABILITY. The relocation of the Isolation System Instrumentation Response Time Table to the TRM will not alter the requirement for Isolation System Instrumentation response times to be maintained within limits and is consistent with NRC Generic Letter 93-08, "Relocation of Technical Specification Tables of Instrument Response Time Limits." ITS LCO 3.3.6.1 requires the Isolation System Instrumentation to be OPERABLE and SR 3.3.6.1.6 requires that Isolation System Instrumentation response times be periodically verified to be within limits. Therefore, the requirements of ITS 3.3.6.1 and the associated Surveillance Requirements are adequate to ensure the Isolation System Instrumentation is maintained OPERABLE. As such, these relocated details are not necessary to be in the ITS to provide adequate protection of the public health and safety. The TRM will be incorporated by reference into the LaSalle 1 and 2 UFSAR at ITS implementation. Changes to the TRM will be controlled by the provisions of 10 CFR 50.59.

LA.3 Details of the methods for performing Required Actions, regarding placing channels in trip or which trip system to trip, in the "*", "**", and "***" footnotes to CTS 3.3.2 ACTIONS are proposed to be relocated to the Bases. These details represent operational considerations and are not required in the associated action to assure equipment is placed in a safe condition in the event a primary containment isolation instrumentation channel becomes inoperable. As such, these details do not represent limits, conditions for establishing equipment OPERABILITY, or remedial actions or instructions necessary to establish limits, conditions, or remedial actions. These details are not necessary to be included in Technical Specifications to ensure actions are taken to restore isolation capability. The ACTIONS of ITS 3.3.6.1 are adequate to ensure action is taken

TECHNICAL CHANGES - LESS RESTRICTIVE

LA.3 (cont'd) to restore isolation capability (including tripping one of the affected trip systems). As such, the relocated details are not required to be in Technical Specifications to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the Bases Control Program described in Chapter 5 of the ITS.

LA.4 The detail in CTS 4.3.2.2 relating to methods (simulated automatic operations) for performing the LOGIC SYSTEM FUNCTIONAL TESTS are proposed to be relocated to the Bases. This detail is not necessary to ensure the OPERABILITY of the primary containment isolation instrumentation. The requirements of ITS 3.3.6.1 and proposed SR 3.3.6.1.5 are adequate to ensure the primary containment isolation instrumentation is maintained OPERABLE. Therefore, the relocated detail is not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

LA.5 System design and operational details in CTS Table 3.3.2-1 (the Value Groups operated by signal column, the logic description in Notes f, g, and h, and that the Manual Initiation Functions isolate the inboard and outboard valves) are proposed to be relocated to the Bases. However, a statement that the channels only input into one trip system is maintained as footnote (b) to ITS Table 3.3.6.1-1. Details relating to system design and operation are unnecessary in the LCO. These details are not necessary to ensure the OPERABILITY of the primary containment isolation instrumentation. The requirements of ITS 3.3.6.1 and the associated Surveillance Requirements are adequate to ensure the primary containment isolation instrumentation is maintained OPERABLE. Therefore, the relocated details are not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

LA.6 The CTS Table 3.3.2-2 detail that the Allowable Value for the Reactor Vessel Pressure—High is corrected for cold water head with reactor vessel flooded (footnote "**") is proposed to be relocated to the Bases. These details are not necessary to be included in the Technical Specifications to ensure the OPERABILITY of the primary containment isolation instrumentation. The OPERABILITY requirements are adequately addressed in ITS 3.3.6.1 and the specified Allowable Values. Therefore, the relocated detail is not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the Bases Control Program described in Chapter 5 of the ITS.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

LA.7 The detail in CTS Table 3.3.2-3 footnote "##" (that the response time testing and conformance to the administrative limits for the remaining channel including trip unit and relay logic are required) are proposed to be relocated to the Bases. The purpose of this detail is to ensure that conformance with administrative limits for channel response times are satisfied. These details are not necessary to be included in the Technical Specifications to ensure the OPERABILITY of the primary containment isolation instrumentation. The OPERABILITY requirements are adequately addressed in ITS 3.3.6.1 including the associated Surveillance Requirements. The definition of ISOLATION SYSTEM RESPONSE TIME and SR 3.3.6.1.6 require verification that the time interval, from when the monitored parameter exceeds its isolation initiation setpoint at the channel sensor until the isolation valves travel to their required position, is within limits. The Note to SR 3.3.6.1.6 allows the sensor response time to be the design sensor response time. Therefore, the requirements of ITS ensure that the response time and conformance to the administrative limits for the remaining portion of the channel are satisfied. As a result, this relocated detail is not necessary for ensuring the OPERABILITY of the associated channels. As such, this relocated detail is not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of ITS.

LA.8 CTS 3.3.2, Trip Function 6.c, RHR Pump Suction Flow—High instrumentation, is proposed to be relocated to the Technical Requirements Manuel (TRM). The following paragraphs describe the RHR SDC system leak detection instrumentation and provide justification for deleting the high flow isolation instrumentation from the Technical Specifications. The high flow isolation instrumentation is not needed to mitigate design basis events; however, for reasons of equipment protection, the instrumentation will be retained as part of the RHR SDC isolation system.

The LaSalle 1 and 2 RHR SDC system contains five isolation valves that are part of the primary containment isolation system. The five valves are members of the Isolation Group 6. The following signals isolate the Group 6 valves:

- Reactor vessel water level - low, level 3
- Reactor vessel (RHR cut-in permissive) pressure - high
- RHR pump suction flow - high
- Manual initiation

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LA.8 (cont'd)

This proposed change deals only with the RHR Pump Suction Flow—High instrumentation. Accidents and events described in the UFSAR do not credit the RHR Pump Suction Flow—High instrumentation to mitigate any accident or event. The current requirement for this instrumentation requires 2 channels (one per trip system) to be OPERABLE in MODES 1, 2, and 3. The RHR System is maintained isolated while in MODE 1 and MODES 2 and 3 above the RHR SDC cut-in permissive pressure by the reactor vessel pressure—high isolation (with an Allowable Value of ≤ 145 psig). The reactor vessel pressure—high instrumentation is designed to be single failure proof, and is required to be OPERABLE by the proposed Technical Specifications. The reactor vessel pressure—high instrumentation ensures the Group 6 valves cannot be opened above this pressure. Therefore, the RHR pump suction flow—high instrumentation is not necessary to provide an isolation signal during these MODES and conditions.

The proposed Technical Specifications require all ECCS subsystems to be OPERABLE during MODES 1, 2, and 3 (proposed LCO 3.5.1). The LPCI subsystems (LPCI is a mode of the RHR System, similar to SDC being a mode of the RHR System) cannot be OPERABLE in MODE 1 or 2 unless the LPCI subsystems are aligned in the standby mode for LPCI operation. This precludes the RHR SDC isolation valves from being open. Therefore, when changing from MODE 3 to MODE 2 with reactor pressure less than the RHR cut-in permissive pressure, proposed LCO 3.0.4 and SR 3.0.4 will ensure that the MODE change (from MODE 3 to MODE 2) is not made unless LPCI is OPERABLE, including alignment in the standby mode for LPCI operation. Therefore, the RHR SDC isolation valves will be maintained closed during MODE 2 with reactor pressure less than the RHR cut-in permissive pressure.

The proposed Technical Specifications also require the Reactor Vessel Water Level—Low, Level 3 instrumentation to be OPERABLE in MODES 3, 4, and 5. A break in the RHR SDC system piping outside containment will be mitigated by this instrumentation as discussed in the UFSAR safety analysis.

Therefore, since at all times that RHR SDC is in operation, containment isolation will be accomplished/maintained via the other safety related instrumentation, the RHR pump suction flow—high instrumentation is not needed to provide adequate protection of the public health and safety, and has been proposed to be relocated to the TRM. The TRM will be incorporated into the LaSalle 1 and 2 UFSAR at ITS implementation. Any changes to the relocated trip function will be controlled by the provisions of 10 CFR 50.59.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

LA.9 CTS 3.3.2, Trip Function 3.1, RWCU Pump Suction Flow - High isolation instrumentation, is proposed to be relocated to the Technical Requirements Manual (TRM).

The LaSalle 1 and 2 RWCU System contains 2 valves that are part of the primary containment isolation system. The 2 valves are members of Isolation Group 5, the RWCU pump suction valves. There are 10 automatic isolation signals, the SLCS Initiation signal, and the Manual Initiation signal which are currently required by the CTS to support the isolation of these valves. The automatic signals include reactor vessel water level, differential flow, various area temperatures, and various area differential temperatures.

The proposed change deals only with the RWCU Pump Suction Flow - High instrumentation. Accidents and events described in the UFSAR do not credit the RWCU Pump Suction Flow - High instrumentation to mitigate any accident or event. This Function provides protection against pipe breaks on the RWCU pump suction piping. However, the Reactor Vessel Water Level - Low Low Function also provides this protection and it is being retained in the ITS. Both of these Functions are not explicitly credited in the accident analysis since bounding analysis are performed for large break MSLBs. The setpoint of the Reactor Vessel Water Level - Low Low Function will ensure the penetration is isolated prior to any core uncovery from breaks within the drywell and breaks in the RWCU piping inside or outside the drywell.

The RWCU Pump Suction Flow—High function is not needed to mitigate design basis events, and is provided for reasons of equipment protection. Therefore, the relocated function is not required to be in the Technical Specifications to provide adequate protection of the public health and safety, and are proposed to be relocated to the TRM. The TRM will be incorporated into the LaSalle 1 and 2 UFSAR ITS implementation. Any changes to the relocated trip function requirements will be controlled by the provisions 10 CFR 50.59.

LB.1 CTS 3.3.2 Action b.1.a) requires that, when the number of OPERABLE channels is less than required by the Minimum OPERABLE Channels per Trip System requirement for one Trip System, the inoperable channel(s) must be placed in the tripped condition within 1 hour for trip functions without an OPERABLE channel. In addition, CTS 3.3.2 Action b.1 footnote "*" requires a channel to be restored to OPERABLE status within 6 hours if placing an inoperable channel in trip causes the Trip Function to occur. CTS 3.3.2 Action c.2.a)1) requires that, when the number of OPERABLE channels is less than

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LB.1 (cont'd) required by the Minimum OPERABLE Channels per Trip System requirement for both trip systems, then after placing the inoperable channel(s) in one trip system in the tripped condition in 1 hour (CTS 3.3.2 Action c.1), the inoperable channel(s) in the remaining trip system must be placed in the tripped condition within 1 hour for trip functions without an OPERABLE channel. In addition, CTS 3.3.2 Action c.1 and Action c.2.a footnote "***" require the inoperable channel to be restored to OPERABLE status within 1 hour, if placing the inoperable channel in trip causes the Trip Function to occur. ITS 3.3.6.1 does not include these requirements. ITS 3.3.6.1 ACTION A establishes the requirement to place the inoperable channel(s) in trip within either 12 or 24 hours, which is consistent with CTS 3.3.2 Actions b.1.b), b.1.c), c.2.a)2), and c.2.a)3), irrespective of the number of inoperable channels in a trip system. For some Functions, two channels are required per trip system and are combined in a two-out-of-two logic. Thus, when one channel is inoperable, the trip system will not actuate to close the associated PCIV. Therefore, having a second channel inoperable is essentially the same as one channel inoperable, the associated valve will not receive an isolation signal. ITS 3.3.6.1 ACTION B continues to ensure that the isolation capability of a penetration is not lost for greater than 1 hour. In addition, for those trip systems that have only one channel, the CTS unnecessarily restricts the restoration time to 1 hour (since when one channel is inoperable, the trip system has no OPERABLE channels). These conditions (loss of all channels in a trip system) were evaluated in the reliability analyses of NEDC-30851-P-A, Supplement 2, March 1989, and NEDC-31677-P-A, July 1990, and found to be acceptable. These analyses are the basis for the current 12 hour and 24 hour restoration times in the CTS 3.3.2 Actions. The results of the NRC review of these generic reliability analyses as it relates to LaSalle 1 and 2 is documented in the NRC Safety Evaluation Report (SER) dated August 2, 1995. The SER concluded that the generic reliability analyses are acceptable to LaSalle 1 and 2 and that LaSalle 1 and 2 meets all requirements of the NRC SERs accepting the generic reliability analyses.

LB.2 CTS Table 3.3.2-1 footnote (b), which allows a delay in entering the associated Action statement during performance of Surveillances, has been clarified to provide direct indication of the intent of the current wording and to be consistent with the reliability analyses of NEDC-31677-P-A, July 1990, and NEDC-30857-P-A, Supplement 2, March 1982. The CTS allows a channel to be placed in an inoperable status for up to 6 hours for required surveillance without placing the channel in the tripped condition provided at least one other OPERABLE channel in the same trip system is monitoring the parameters. In addition, for those trip systems with a design providing only one channel per trip system, the channel

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LB.2 (cont'd) may be placed in an inoperable status for up to 8 hours for required surveillance testing without placing the channel in the tripped condition provided that the redundant isolation valve, inboard or outboard, as applicable, in each line is OPERABLE and all required actuation instrumentation for that redundant valve is OPERABLE, or place the trip system in the tripped condition. The current words "provided at least one other OPERABLE channel in the same trip system is monitoring that parameter" are intended to ensure that the trip capability of the Function is maintained. However, it does not provide this assurance for all logic system designs. In addition, for those trips systems that have only one channel, the 8 hour allowance has been reduced to 6 hours and the wording has been simplified to require trip capability of the Function to be maintained. The reduction in the allowed out of service time from 8 hours to 6 hours is consistent with the specified reliability analyses. Therefore, the Note has been modified in ITS 3.3.6.1 (Note 2 to the Surveillance Requirements) to state "provided the associated Function maintains isolation capability." This is the intent of the current Note and is based on previously conducted reliability analyses (NEDC-31677-P-A, July 1990, and NEDC-30851-P-A, Supplement 2, March 1989). The results of the NRC review of these generic reliability analyses as it relates to LaSalle 1 and 2 is documented in the NRC Safety Evaluation Report (SER) dated August 2, 1995. The SER concluded that the generic reliability analyses are acceptable to LaSalle 1 and 2 and that LaSalle 1 and 2 meets all requirements of the NRC SERs accepting the generic reliability analyses.

LD.1 The Frequency for performing the LOGIC SYSTEM FUNCTIONAL TEST (LSFT) of CTS 4.3.2.2 (proposed SR 3.3.6.1.5), the ISOLATION SYSTEM RESPONSE TIME test of CTS 4.3.2.3 (proposed SR 3.3.6.1.6), and the CHANNEL FUNCTIONAL TEST (CFT) for the RWCU Initiation Function and the Manual Initiation Functions specified in CTS Table 4.3.2.1-1 (changed to LSFT in Discussion of Change A.12 above) has been extended from 18 months to 24 months. These SRs ensures that Isolation Actuation Instrumentation logic will function as designed to ensure proper response during an analyzed event. The proposed change will allow these Surveillances to extend their Surveillance Frequency from the current 18 month Surveillance frequency (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2) to a 24-month Surveillance Frequency (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2). This proposed change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical maintenance and surveillance

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LD.1 (cont'd) data have shown that these tests normally pass their surveillances at the current frequency. An evaluation has been performed using this data and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal.

Most instrument channels are tested on a more frequent basis during the operating cycle in accordance with CTS 4.3.2.1, the CFT. This testing of the isolation instrumentation ensures that a significant portion of the Isolation Actuation Instrumentation circuitry is operating properly and will detect significant failures of this circuitry. The PCIVs including the actuating logic is designed to be single failure proof and therefore, is highly reliable.

Based on the inherent system and component reliability and the testing performed during the operating cycle, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 24 month Surveillance Frequencies, if performed at the maximum interval allowed by proposed SR 3.0.2 (30 months) do not invalidate any assumptions in the plant licensing basis.

Furthermore, as stated in the NRC Safety Evaluation Report (dated August 2, 1993) relating to extension of the Peach Bottom Atomic Power Station, Unit Numbers 2 and 3 surveillance intervals from 18 to 24 months:

"Industry reliability studies for boiling water reactors (BWRs), prepared by the BWR Owners Group (NEDC-30936P) show that the overall safety systems' reliabilities are not dominated by the reliabilities of the logic system, but by that of the mechanical components, (e.g., pumps and valves), which are consequently tested on a more frequent basis. Since the probability of a relay or contact failure is small relative to the probability of mechanical component failure, increasing the Logic System Functional Test interval represents no significant change in the overall safety system unavailability."

Based on the above discussion, the impact, if any, of this change on system availability is minimal.

LE.1 The Frequency for performing the CHANNEL CALIBRATION Surveillance of current Surveillance 4.3.2.1 and Table 4.3.2.1-1 for trip functions A.1.a.1), A.1.a.2), A.1.a.3), A.1.b, A.1.e, A.1.f, A.2.a, A.2.b, A.2.c, A.2.d, A.3.a, A.3.b, A.3.c, A.3.e, A.3.f, A.3.g, A.3.h, A.3.i, a.3.j, A.3.k, A.4.b, A.4.c, A.4.d, A.4.e, A.4.f, A.4.g, A.4.h, A.6.a, and A.6.b have been extended to 24 months. The proposed change will allow this Surveillance to extend the

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LE.1 (cont'd) Surveillance Frequency to a 24 month Surveillance Frequency (i.e., a maximum of 30 months accounting for the allowable grace period specified in proposed SR 3.0.2). The subject SR ensures that the Isolation instruments will function as designed during an analyzed event. Extending the SR Frequency is acceptable because the Primary Containment Isolation System along with the Isolation initiation logic is designed to be single failure proof and, therefore, is highly reliable. Furthermore, the impacted Isolation instrumentation has been evaluated based on make, manufacturer and model number to determine that the instrumentation's actual drift falls within the design allowance in the associated setpoint calculation. The following paragraphs, listed by CTS Trip Function number, identify by make, manufacturer and model number the evaluations performed:

Trip Function A.1.a.1), A.6.a: Reactor Vessel Water Level - Low, Level 3 (currently 18 months)

This function is performed by Rosemount 1153DB4 Transmitters and 710DU Master and Slave Trip Units. The Rosemount transmitters' and trip units' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Trip Function A.1.a.2), A.2.c, A.3.e: Reactor Vessel Water Level - Low Low, Level 2 (currently 18 months)

This function is performed by Rosemount 1153DB5 Transmitters and 710DU Master and Slave Trip Units. The Rosemount transmitters' and trip units' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

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LE.1 (cont'd)

Trip Function A.1.a.3): Reactor Vessel Water Level - Low Low Low, Level 1 (currently 18 months)

This function is performed by Rosemount 1153DB5 Transmitters and 710DU Master and Slave Trip Units. The Rosemount transmitters' and trip units' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Trip Functions A.1.b, A.2.b: Drywell Pressure - High (currently 92 days)

This function is performed by Static-O-Ring 12N6-BX-NX-C1A-JJTTX7 pressure switches. The Static-O-Ring pressure switches' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Trip Functions A.1.e: Condenser Vacuum - Low (currently 92 days)

This function is performed by Static-O-Ring 54N6-B118-NX-C1A-JJTTX7 pressure switches. The Static-O-Ring pressure switches' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Trip Function A.1.f: Main Steam Line Tunnel Differential Temperature - High (currently 18 months)

This function is performed by thermocouples and Riley 86VEFF temperature switches. The thermocouples are not calibratable, therefore, no drift evaluation was performed. The Riley instruments' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

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LE.1 (cont'd)

Trip Function A.2.a: Reactor Building Vent Exhaust Plenum Radiation - High (currently 18 months)

This function is performed by GE 194X927G01 detectors and GE 129B2802G011 radiation monitors. These instruments were evaluated utilizing a qualitative analysis (i.e., engineering judgment). The results of the analysis support a 24 month fuel cycle surveillance interval extension.

Trip Function A.2.d: Fuel Pool Vent Exhaust Radiation—High (currently 18 months)

This function is performed by GE 194X927G01 detectors, GE 129B2802G011 radiation monitors and Yokogawa 4156-500-32 recorder. These instruments were evaluated utilizing a qualitative analysis (i.e., engineering judgment). The results of the analysis support a 24 month fuel cycle surveillance interval extension.

Trip Function A.3.a: RWCU System Differential Flow - High (currently 18 months)

This function is performed by Rosemount 1153DB4, 1153DB5 Transmitters, Bailey 750 Square Root Extractors, Bailey 752 Summers, Bailey 745 Flow Switches and GE type 180 indicators. The Bailey 750 and 752 instruments and the GE 180 indicators were evaluated utilizing a qualitative analysis (i.e., engineering judgment). The Rosemount Transmitters' and Bailey 745 Flow Switches' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Trip Function A.3.b: RWCU Heat Exchanger Area Temperature - High (currently 92 days)

This function is performed by thermocouples and Riley 86PEGF and 86VEFF temperature switches. The thermocouples are not calibratable, therefore, no drift evaluation was performed. The Riley instruments' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

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LE.1 (cont'd)

Trip Function A.3.c: RWCU Heat Exchanger Area Ventilation Differential Temperature - High (currently 92 days)

This function is performed by thermocouples and Riley 86PEGF and 86VEFF temperature switches. The thermocouples are not calibratable, therefore, no drift evaluation was performed. The Riley instruments' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Trip Function A.3.f: RWCU Pump and Valve Area Temperature - High (currently 92 days)

This function is performed by thermocouples and Riley 86PEGF temperature switches. The thermocouples are not calibratable, therefore, no drift evaluation was performed. The Riley instruments' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Trip Function A.3.g: RWCU Pump and Valve Area Ventilation Differential Temperature - High (currently 92 days)

This function is performed by thermocouples and Riley 86VEFF temperature switches. The thermocouples are not calibratable, therefore, no drift evaluation was performed. The Riley instruments' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

LE.1 (cont'd)

Trip Function A.3.h: RWCU Holdup Pipe Area Temperature - High (currently 92 days)

This function is performed by thermocouples and Riley 86PEGF temperature switches. The thermocouples are not calibratable, therefore, no drift evaluation was performed. The Riley instruments' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Trip Function A.3.i: RWCU Holdup Pipe Area Ventilation Differential Temperature - High (currently 92 days)

This function is performed by thermocouples and Riley 86VEFF temperature switches. The thermocouples are not calibratable, therefore, no drift evaluation was performed. The Riley instruments' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Trip Function A.3.j: RWCU Filter/Demineralizer Valve Room Area Temperature - High (currently 92 days)

This function is performed by thermocouples and Riley 86PEGF temperature switches. The thermocouples are not calibratable, therefore, no drift evaluation was performed. The Riley instruments' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

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LE.1 (cont'd)

Trip Function A.3.k: RWCU Filter/Demineralizer Valve Room Area Ventilation Differential Temperature - High (currently 92 days)

This function is performed by thermocouples and Riley 86VEFF temperature switches. The thermocouples are not calibratable, therefore, no drift evaluation was performed. The Riley instruments' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Trip Functions A.4.b: RCIC Steam Supply Pressure - Low (currently 92 days)

This function is performed by Static-O-Ring 6N6-B5-NX-C1A-JJTTX7 pressure switches. The Static-O-Ring pressure switches' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Trip Functions A.4.c: RCIC Turbine Exhaust Diaphragm Pressure - High (currently 92 days)

This function is performed by Static-O-Ring 6N6-B5-NX-C1A-JJTTX7 pressure switches. The Static-O-Ring pressure switches' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Trip Function A.4.d: RCIC Equipment Room Temperature - High (currently 92 days)

This function is performed by thermocouples and Riley 86PEGF and 86VEFF temperature switches. The thermocouples are not calibratable, therefore, no drift evaluation was performed. The Riley instruments' drift was determined by quantitative analysis. The drift value determined will be used in the development

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LE.1 (cont'd)

of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Trip Function A.4.e: RCIC Steam Line Tunnel Temperature - High (currently 92 days)

This function is performed by thermocouples and Riley 86PEGF and 86VEFF temperature switches. The thermocouples are not calibratable, therefore, no drift evaluation was performed. The Riley instruments' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Trip Function A.4.f: RCIC Steam Line Tunnel Differential Temperature - High (currently 92 days)

This function is performed by thermocouples and Riley 86PEGF and 86VEFF temperature switches. The thermocouples are not calibratable, therefore, no drift evaluation was performed. The Riley instruments' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Trip Functions A.4.g: RCIC Isolation Drywell Pressure - High (currently 92 days)

This function is performed by Static-O-Ring 12N6-B4-NX-C1A-JJTTX7 pressure switches. The Static-O-Ring pressure switches' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

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LE.1 (cont'd)

Trip Function A.4.h: RCIC Equipment Room Differential Temperature - High (currently 92 days)

This function is performed by thermocouples and Riley 86PEGF and 86VEFF temperature switches. The thermocouples are not calibratable, therefore, no drift evaluation was performed. The Riley instruments' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Trip Functions A.6.b: Reactor Vessel (RHR Cut-in Permissive) Pressure - High (currently 92 days)

This function is performed by Static-O-Ring 5N6-BX-NX-C1A-JJTTX7 pressure switches. The Static-O-Ring pressure switches' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Based on the design of the instrumentation and the drift evaluations, it is concluded that the impact, if any, on system availability is minimal as a result of the change in the surveillance test interval.

A review of the surveillance test history was performed to validate the above conclusion. This review of the surveillance test history demonstrates that there are no failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24 month surveillance frequency. In addition, the proposed 24 month Surveillance Frequencies, if performed at the maximum interval allowed by proposed SR 3.0.2 (30 months) do not invalidate any assumptions in the plant licensing basis.

LF.1

This change revises the Current Technical Specifications (CTS) Allowable Values to the Improved Technical Specifications (ITS) Allowable Values. ITS Section 3.3 reflects Allowable Values consistent with the philosophy of BWR ISTS, NUREG-1434, Rev. 1. These Allowable Values have been established consistent with the methods described in ComEd's Instrument Setpoint

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LF.1 (cont'd)

Methodology (Nuclear Engineering Standard NES-EIC-20.04, "Analysis of Instrument Channel Setpoint Error and Instrument Loop Accuracy"). For most cases, the Allowable Value determinations were calculated using plant specific operating and surveillance trend data or an allowance as provided for by the Instrument Setpoint Methodology. For all other cases, vendor documented performance specifications for drift were used. The Allowable Value verification used actual plant operating and surveillance trend information to ensure the validity of the developed Allowable Value. All changes to safety analysis limits applied in the methodologies were evaluated and confirmed as ensuring safety analysis licensing acceptance limits are maintained. All design limits applied in the methodologies were confirmed as ensuring that applicable design requirements of the associated systems and equipment are maintained. The methodologies used have been compared with the guidance of ANSI/ISA S67.04-Part I-1994 and ANSI/ISA RP67.04-Part II-1994. Plant calibration procedures will ensure that the assumptions regarding calibration accuracy, measurement and test equipment accuracy, and setting tolerance are maintained. Setpoints for each design or safety analysis limit have been established by accounting for the applicable instrument accuracy, calibration and drift uncertainties, environmental effects, power supply fluctuations, as well as uncertainties related to process and primary element measurement accuracy using the Instrument Setpoint Methodology. The Allowable Values have been established from each design or safety analysis limit by combining the errors associated with channel/instrument calibration (e.g., device accuracy, setting tolerance, and drift) with the calculated Nominal Trip Setpoint also using the Instrument Setpoint Methodology.

Additionally, each applicable channel/instrument has been evaluated and analyzed to support a fuel cycle extension to a 24 month interval. These evaluations and analyses have been performed utilizing the guidance provided in EPRI TR-103335, "Guidelines for Instrument Calibration Extension/Reduction Programs, Revision 1. The EPRI guidance was used to demonstrate that the data collected by the operating plant (from surveillance testing) has remained acceptable and reasonable with regard to the manufacturers design specifications.

Use of the previously discussed methodologies for determining Allowable Values, instrument setpoints, and analyzing channel/instrument performance ensure that the design basis and associated safety limits will not be exceeded during plant operation. These evaluations, determinations, and analyses now form a portion of the plants design bases.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

"Specific"

L.1 CTS Table 3.3.2-1 Action 20, which requires a unit shutdown, is required to be taken when a Reactor Vessel Water Level—Low, Level 3 (Function A.1.a.1) or a Reactor Vessel Water Level — Low Low Low, Level 1 (Function A.1.a.3) channel is not placed in trip as required by CTS 3.3.2 Actions b and c. Function A.1.a.1 actuates TIP Guide Tube Ball Valves while Function A.1.a.3 actuates Drywell Pneumatic Valves. ITS 3.3.6.1 ACTION F has been added to allow isolation of the affected penetration instead of requiring a unit shutdown, when only these valves are affected. Isolation of the affected penetration performs the safety function of the instruments. When these Function channels are inoperable, and only the TIP Guide Tube Ball Valves or Drywell Pneumatic Valves are affected, operation can continue with these valves isolated. If the penetration is not isolated within 1 hour (as provided in ITS 3.3.6.1 ACTION F), the plant must be placed in MODES 3 and 4 in accordance with ITS 3.3.6.1 ACTION H.

L.2 CTS Table 3.3.2-1 Action 20, which requires a unit shutdown, is required to be taken when a Reactor Vessel Water Level — Low Low Low, Level 1 channel is not placed in trip as required by CTS 3.3.2 Actions b and c. ITS 3.3.6.1 Required Action D.1 is proposed to be added to allow isolation of the affected main steam line in lieu of shutting down the unit. Some conditions may affect the isolation logic for only some of the main steam lines. In these cases, it is not necessary to require a shutdown of the unit; rather, isolation of the affected lines returns the system to a status where it can perform the remainder of its isolation function, and continued operation is allowed (although it may be at a reduced power level in MODE 2.)

L.3 CTS Table 3.3.2-1 Action 21, which requires the unit to be in STARTUP (Mode 2) with the associated isolation valves closed within 6 hours, is being changed in ITS 3.3.6.1 ACTION D to only require isolation of the associated main steam line within 12 hours. The requirement to isolate the affected main steam lines is a sufficient action with the Main Steam Line Flow — High, Main Steam Line Tunnel Differential Temperature—High, and Condenser Vacuum—Low Functions inoperable and will normally require being in MODE 2 to avoid a scram. The requirement to be in MODE 2 is therefore implicit and is deleted from ITS 3.3.6.1 Required Action D.1. In addition, some conditions may affect the isolation logic for only one main steam line. In these cases, it is not necessary to require a shutdown of the unit; rather, isolation of the affected line returns the system to a status where it can perform the remainder of the isolation

TECHNICAL CHANGES - LESS RESTRICTIVE

L.3 (cont'd) function, and continued operation is allowed. The time allowed to isolate the associated main steam lines is extended from the CTS time of 6 hours to 12 hours in ITS 3.3.6.1 Required Action D.1. The additional time is provided to allow for more orderly power reduction.

L.4 The Applicability of the Standby Liquid Control System Initiation Function has been modified from MODES 1, 2, and 3 to MODES 1 and 2, only. The reduction in the Applicability is acceptable since with the unit in MODE 3 the reactor will be shutdown with all control rods inserted. Therefore, the additional shutdown requirements of the Standby Liquid Control System will not be necessary to mitigate an ATWS event. The proposed Applicability is consistent with the Applicability of ITS 3.1.7 for the Standby Liquid Control System.

L.5 Not used.

L.6 The MODE 1 and 2 Applicability requirements for CTS Tables 3.3.2-1 and 4.3.2.1-1 Trip Function A.6.a, Reactor Vessel Water Level—Low, Level 3, have been deleted for the RHR SDC System Group 6 valves. Trip Function A.6.b (ITS Table 3.3.6.1-1 Function 5.b), Reactor Vessel Pressure—High, ensures that the RHR SDC System valves are isolated in MODE 1 and MODE 2 when above the RHR cut-in permissive pressure setpoint, since this Function isolates the valves when above the setpoint. When in MODE 2 below the setpoint, other Technical Specification requirements essentially ensure that RHR Shutdown Cooling is not in service (ITS 3.5.1 requires all LPCI to be OPERABLE in MODE 2, and with RHR aligned to the shutdown cooling mode, LPCI will be inoperable). In addition, plant procedures require that RHR be aligned to the LPCI mode, and the recirculation pumps to operating (which would necessitate securing the shutdown cooling mode) prior to entering MODE 2. Therefore, the MODE 1 and 2 requirements for these Functions have been deleted.

L.7 CTS Table 3.3.2-1 Action 25 requires locking the affected system isolation valves closed when the CTS Table 3.3.2-1 Trip Function A.6.b (Reactor Vessel Pressure—High) is inoperable. ITS 3.3.6.1 Required Action F.1 only requires closure of the valve, i.e., isolating the penetration; locking is not required. The requirement to lock the valve is an additional administrative requirement to assist in ensuring the valve remains isolated. This requirement is not necessary to be in the ITS to ensure the valve remains closed. ITS LCO 3.0.2 states that when an LCO is not met, the Required Actions must be met. Thus, when the valve is closed (to isolate the affected penetration flow path), the valve must remain

TECHNICAL CHANGES - LESS RESTRICTIVE

L.7 (cont'd) closed to comply with the Required Action. In addition, inadvertent movement of a closed valve is an unlikely occurrence since plant administrative controls are in place that govern operation of these valves. Plant personnel would only operate a closed valve using a plant procedure, and these procedures are controlled by ITS 5.4.1.a. Therefore, these procedures will also help ensure a closed valve is not inadvertently opened.

L.8 The CTS 3.3.2-1 ACTION 25 requirement, associated with the Reactor Vessel Water Level—Low, Level 3 Function (CTS 3.3.2-1 Trip Function A.6.a), to lock the affected system isolation valves within one hour and declare the affected system inoperable has been modified to immediately initiate action to restore channel to OPERABLE status or initiate action to isolate the Residual Heat Removal (RHR) Shutdown Cooling System (ITS 3.3.6.1 Required Action J.1 and J.2, respectively). The current actions are overly restrictive and may not always be the safest action. Isolating the RHR suction pathway will place the system in a state in which it cannot be used. Therefore, the ability of the plant to remove decay heat is reduced. As a result, the proposed Actions are designed to require the most prudent action. The actions will be required to be initiated immediately and continue until the channels are restored or the RHR Shutdown Cooling System is isolated. When the RHR Shutdown Cooling System is isolated it must be declared inoperable and further actions will be required to provide alternate decay heat removal methods as required by ITS 3.4.9 during MODE 3. ITS 3.4.10 during MODE 4, and ITS 3.9.8 and 3.9.9 during MODE 5 operations. If Required Action J.1 is chosen prudent action must be taken to restore the channels, however the system can remain in operation to support the decay heat removal requirements.

L.9 CTS Table 3.3.2-1 ACTION 26 allows 24 hours to restore the manual initiation function to OPERABLE status, provided that the manual initiation function is OPERABLE for each other group valve, inboard or outboard, as applicable, in each line, otherwise the manual initiation function must be restored to OPERABLE status within 8 hours. The restrictions of the allowed out of service time have been deleted and the Manual Initiation Functions (CTS Table 3.3.2-1 Function B) are allowed to be restored to OPERABLE status in 24 hours as indicated in ITS 3.3.6.1 ACTION G, regardless of the status of the manual isolation function of the other valve group (outboard or inboard). The time allowed in CTS Table 3.3.2-1 ACTION 26 to isolate the associated penetration if a Manual Isolation Function is inoperable has been extended from 9 hours (8 hours to restore the channel and 1 hour to isolate the penetration) to 24 hours in ITS 3.3.6.1 ACTION G. The current time is considered overly conservative

TECHNICAL CHANGES - LESS RESTRICTIVE

L.9 (cont'd) since the Manual Isolation Function is not assumed in any accident or transient analysis in the UFSAR; automatic Functions are the Functions assumed to isolate the penetration. In additions, other means exist in the control room for operators to isolate the affected penetrations (e.g., individual control switches). This change is consistent with the BWR ISTS, NUREG-1434, Rev. 1.

L.10 CTS Table 3.3.2-1 requires a Manual Initiation channel (one channel per valve) to be OPERABLE for Groups 3, 8 and 9 inboard and outboard valves. These Function channels are currently being satisfied via each valve's individual control switch. The only RCIC Manual initiation Function available is for the Group 8 outboard isolation valves and this Function only operates with a coincident Reactor Vessel Water Level—Low Level 2 signal (CTS Table 3.3.2-1 Trip Function B.7) as indicated in footnote (h). The Manual Initiation Function for this Group 8 outboard Function is retained in ITS 3.3.6.1 as indicated in Table 3.3.6.1-1 Function 3.j and footnote (b) which indicates that only one channel is available and that it only inputs into one of two trip systems. The requirements for individual control switches are not credited in any design bases accident or transient analysis. These types of control are not typically included in the Technical Specifications and are not included in proposed ITS 3.3.6.1. This change is consistent with BWR ISTS, NUREG-1434, Rev. 1.

L.11 A Required Action has been added to CTS Table 3.3.2-1, Action 22 (ITS 3.3.6.1 Required Action I.1), which allows the associated SLC subsystem to be declared inoperable in lieu of isolating the RWCU System. The purpose of the SLC System Initiation Function of the RWCU System (ITS Table 3.3.6.1-1 Function 4.l) is to ensure the SLC subsystems function properly and the injected boron is not removed from the Reactor Coolant System). With the RWCU System isolated, the SLC System remains capable of performing its function. With the RWCU System not isolated and the SLC System Initiation Function inoperable, the SLC System cannot perform its function. With the SLC System declared inoperable, the Actions of CTS 3.1.5 (ITS 3.1.7), which have been previously approved by the NRC, would apply. Therefore, the change is considered acceptable.

RELOCATED SPECIFICATIONS

None

LIMITING CONDITION FOR OPERATION

LCO 3.3.6.2 3.3.2 The isolation actuation instrumentation channels shown in Table 3.3.2-1 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.2-2 and with ISOLATION SYSTEM RESPONSE TIME as shown in Table 3.3.2-3. LA.1 A.2

APPLICABILITY: As shown in Table 3.3.2-1.

ACTION: add proposed ACTIONS Note A.3

ACTIONS A and B a. With an isolation actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.2-2, declare the channel inoperable until the channel is restored to OPERABLE status with its trip setpoint adjusted consistent with the Trip Setpoint value. LA.1

ACTION A b. With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System Requirement for one trip system, either

1. Place the inoperable channel(s) and/or trip system in the tripped condition* within

a) 1 hour for trip functions without an OPERABLE channel LB.1
b) 12 hours for trip functions common to RPS Instrumentation, and
c) 24 hours for trip functions not common to RPS Instrumentation,

or

ACTION C 2. Take the ACTION required by Table 3.3.2-1.

ACTION B c. With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement for both trip systems,

1. Place at least one trip system** in the tripped condition*** within one hour, and

ACTION A 2. a) Place the inoperable channel(s) in the remaining trip system in the tripped condition*** within

1) 1 hour for trip functions without an OPERABLE channel LB.1
2) 12 hours for trip functions common to RPS Instrumentation, and
3) 24 hours for trip functions not common to RPS Instrumentation,

or

ACTION C b) Take the ACTION required by Table 3.3.2-1.

LA.2

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

** If more channels are inoperable in one trip system than in the other, select that trip system to place in the tripped condition except when this would cause the Trip Function to occur.

*** An inoperable channel need not be placed in the tripped condition where this would cause the Trip Function to occur. In these cases, the LA.2
ACTION B inoperable channel shall be restored to OPERABLE status within 1 hour or LB.1
ACTION C the ACTION required by Table 3.3.2-1 for that Trip Function shall be taken.

A.1

ITS 3.3.6.2

SURVEILLANCE REQUIREMENTS

Note 1 to Surveillance Requirements

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

LA.3

SR 3.3.6.2.4

4.3.2.2 LOGIC SYSTEM FUNCTIONAL TESTS ~~and simulated automatic operation~~ of all channels shall be performed at least once per ~~18~~ 24 months.

LD.1

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

A.2

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Table 3.3.6.2-1

TABLE 3.3.2-1

ISOLATION ACTUATION INSTRUMENTATION

A.4 LA.4

Function TRIP FUNCTION	~~VALVE GROUPS OPERATED BY SIGNAL~~	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM (b)	APPLICABLE OPERATIONAL CONDITION	ACTION
A. ~~AUTOMATIC INITIATION~~				
1. PRIMARY CONTAINMENT ISOLATION				
a. Reactor Vessel Water Level				
(1) Low, Level 3	7	2	1, 2, 3	20
(2) Low Low, Level 2	2, 3	2	1, 2, 3	20
(3) Low Low Low, Level 1	1, 10	2	1, 2, 3	20
b. Drywell Pressure - High	2, 7, 10	2	1, 2, 3	20
c. Main Steam Line				
1) DELETED				
2) Pressure - Low	1	2	1	23
3) Flow - High	1	2/line[d]	1, 2, 3	21
d. DELETED				
e. Main Steam Line Tunnel ΔTemperature - High	1	2	1[(i)(j)], 2[(i)(j)], 3[(i)(j)]	21
f. Condenser Vacuum - Low	1	2	1, 2*, 3*	21
2. SECONDARY CONTAINMENT ISOLATION				
3 a. Reactor Building Vent Exhaust Plenum Radiation - High	~~4(c)(e)~~	2	1, 2, 3 and **	24 C
2 b. Drywell Pressure - High	~~4(c)(e)~~	2	1, 2, 3	24 C
1 c. Reactor Vessel Water Level - Low Low, Level 2	~~4(c)(e)~~	2	1, 2, 3, and #	24 C
4 d. Fuel Pool Vent Exhaust Radiation - High	~~4(c)(e)~~	2	1, 2, 3, and **	24 C

<see ITS 3.3.6.1>

A.1

LA.4

Notes (a) and (b) to Table 3.3.6.2-1

Note (a) to Table 3.3.6.2-1

<See ITS 3.3.6.1>

Notes (a) and (b) to Table 3.3.6.2-1

ITS 3.3.6.2

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Table 3.3.6.2-1

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

Function TRIP FUNCTION	VALVE GROUPS OPERATED BY SIGNAL	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM (b)	APPLICABLE OPERATIONAL CONDITION	ACTION
5. Deleted.	LA.4			
6. RHR SYSTEM SHUTDOWN COOLING MODE ISOLATION				see ITS 3.3.6.1
a. Reactor Vessel Water Level - Low, Level 3	6	2	1, 2, 3	25
b. Reactor Vessel (RHR Cut-in Permissive) Pressure - High	6	1	1, 2, 3	25
c. RHR Pump Suction Flow - High	6	1	1, 2, 3	25
5. B. MANUAL INITIATION				
1. Inboard Valves	1, 2, 5, 6, 7	1/group	1, 2, 3	26
2. Outboard Valves	1, 2, 5, 6	1/group	1, 2, 3	26
5. 3. Inboard Valves LA.4 <see ITS 3.3.6.1>	4(c)(e) LA.4	1/group	1, 2, 3 and **,#	26 C
5 4. Outboard Valves	4(c)(e)	1/group	1, 2, 3 and **,#	26 C
5. Inboard Valves	3, 8, 9	1/valve	1, 2, 3	26
6. Outboard Valves	3, 8, 9	1/valve	1, 2, 3	26
7. Outboard Valve	8(h)	1/group	1, 2, 3	26

Notes (a) and (b)

A.1

ITS 3.3.6.2

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A.1

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

add proposed Required Actions C.1.1 and C.2.2 L.1

ACTION

<See ITS 3.3.6.1>

ACTION 20 - Be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.

ACTION 21 - Be in at least STARTUP with the associated isolation valves closed within 6 hours or be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.

ACTION 22 - Close the affected system isolation valves within 1 hour and declare the affected system inoperable.

ACTION 23 - Be in at least STARTUP within 6 hours.

ACTION C — ACTION 24 - ~~Establish SECONDARY CONTAINMENT INTEGRITY with the standby gas treatment system operating within 1 hour.~~ A.5

ACTION 25 - Lock the affected system isolation valves closed within 1 hour and declare the affected system inoperable. <see ITS 3.3.6.1>

M.1 ACTION 26 - ~~Provided that the manual initiation function is OPERABLE for each other group valve, inboard or outboard, as applicable, in each line, restore the manual initiation function to OPERABLE status within 24 hours; otherwise, restore the manual initiation function to OPERABLE status within 8 hours;~~ otherwise:

a. ~~Be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours, or~~ A.9

ACTION C — b. Close the affected system isolation valves within the next hour ~~and~~ or declare the affected system inoperable. L.4 L.2 Add proposed Required Action C.2.1

NOTES

* May be bypassed with all turbine stop valves not full open. <See ITS 3.3.6.1>

Notes (a) and (b) to Table 3.3.6.2-1 — ** When handling irradiated fuel in the secondary containment and during CORE ALTERATIONS and operations with a potential for draining the reactor vessel. L.3

Note (a) to Table 3.3.6.2-1 — # During CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

(a) Deleted.

Note 2 to Surveillance Requirements — (b) A channel may be placed in an inoperable status for up to 6 hours for required surveillance without placing the channel in the tripped condition provided ~~at least one other OPERABLE channel in the same trip system is monitoring that parameter. In addition for those trip systems with a design providing only one channel per trip system, the channel may be placed in an inoperable status for up to 8 hours for required surveillance testing without placing the channel in the tripped condition provided that the redundant isolation valve, inboard or outboard, as applicable, in each line is operable and all required actuation instrumentation for that redundant valve is OPERABLE, or place the trip system in the tripped condition.~~ maintains isolation capability LB.2

~~(c) Also actuates the standby gas treatment system.~~ LA.4

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

~~(e) Also actuates secondary containment ventilation isolation dampers per Table 3.6.5.2-1.~~

(f) Closes only RWCU system inlet outboard valve. <see ITS 3.3.6.1>

<see ITS 3.3.6.1>

Table 3.3.6.2-1

TABLE 3.3.2-2

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

A.4

Function ~~TRIP~~ FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
A. AUTOMATIC INITIATION		
1. PRIMARY CONTAINMENT ISOLATION		
a. Reactor Vessel Water Level		
1) Low, Level 3	≥ 12.5 inches*	≥ 11.0 inches*
2) Low Low, Level 2	≥ -50 inches*	≥ -57 inches*
3) Low Low Low, Level 1	≥ -129 inches*	≥ -136 inches*
b. Drywell Pressure - High	≤ 1.69 psig	≤ 1.89 psig
c. Main Steam Line		
1) DELETED		
2) Pressure - Low	≥ 854 psig	≥ 834 psig
3) Flow - High	≤ 111 psid	≤ 116 psid
d. DELETED		
e. Main Steam Line Tunnel Δ Temperature - High	≤ 65°F	≤ 70°F
f. Condenser Vacuum - Low	> 7 inches Hg vacuum	> 5.5 inches Hg vacuum
2. SECONDARY CONTAINMENT ISOLATION		
3 a. Reactor Building Vent Exhaust Plenum Radiation - High	~~≤ 10 mr/hr~~	≤ 15 mr/hr
2 b. Drywell Pressure - High	~~≤ 1.69 psig~~	≤ 1.89 psig
1 c. Reactor Vessel Water Level - Low Low, Level 2	~~≥ -50 inches*~~	≥ -57 inches~~*~~
4 d. Fuel Pool Vent Exhaust Radiation - High	~~≤ 10 mr/hr~~	≤ 15 mr/hr
3. REACTOR WATER CLEANUP SYSTEM ISOLATION		
a. Δ Flow - High	≤ 70 gpm	≤ 87.5 gpm
b. Heat Exchanger Area Temperature - High	≤ 149°F	≤ 156.8°F
c. Heat Exchanger Area Ventilation ΔT - High	≤ 33°F	≤ 40.3°F
d. SLCS Initiation	NA	NA
e. Reactor Vessel Water Level - Low Low, Level 2	≥ -50 inches*	≥ -57 inches*

LA.1

<See ITS 3.3.6.1>

LF.1

LA.1

A.6

<See ITS 3.3.6.1>

A.1

ITS 3.3.6.2

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ITS 3.3.6.2-1

TABLE 3.3.2-2 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

Function TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
6. RHR SYSTEM SHUTDOWN COOLING MODE ISOLATION		
a. Reactor Vessel Water Level - Low, Level 3	≥ 12.5 inches*	≥ 11.0 inches*
b. Reactor Vessel (RHR Cut-in Permissive) Pressure - High	≤ 135 psig**	≤ 145 psig**
c. RHR Pump Suction Flow - High	≤ 180" H_2O	≤ 186" H_2O
5. B. MANUAL INITIATION	Not Applicable	Not Applicable
1. Inboard Valves		
2. Outboard Valves		
5 3. Inboard Valves		
5. 4. Outboard Valves		
5. Inboard Valves		
6. Outboard Valves		
7. Outboard Valve		

LA.4

<See ITS 3.3.6.1>

* See Bases Figure B 3/4 3-1.

** Corrected for cold water head with reactor vessel flooded.

A.6

<See ITS 3.3.6.1>

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ITS 3.3.6.2

TABLE 3.3.2-3

ISOLATION SYSTEM INSTRUMENTATION RESPONSE TIME

TRIP FUNCTION	RESPONSE TIME (Seconds)#
A. AUTOMATIC INITIATION	
1. PRIMARY CONTAINMENT ISOLATION	
a. Reactor Vessel Water Level	
1) Low, Level 3	N/A
2) Low Low, Level 2	N/A
3) Low Low Low, Level 1	≤ 1.0*, ##
b. Drywell Pressure - High	N/A
c. Main Steam Line	
1) DELETED	
2) Pressure - Low	≤ 2.0*, ##
3) Flow - High	≤ 0.5*, ##
d. DELETED	
e. Condenser Vacuum - Low	N/A
f. Main Steam Line Tunnel ΔTemperature - High	N/A
2. SECONDARY CONTAINMENT ISOLATION	N/A
a. Reactor Building Vent Exhaust Plenum Radiation - High	
b. Drywell Pressure - High	
c. Reactor Vessel Water Level - Low, Level 2	
d. Fuel Pool Vent Exhaust Radiation - High	
3. REACTOR WATER CLEANUP SYSTEM ISOLATION	N/A
a. ΔFlow - High	
b. Heat Exchanger Area Temperature - High	
c. Heat Exchanger Area Ventilation ΔT-High	
d. SLCS Initiation	
e. Reactor Vessel Water Level - Low Low, Level 2	
f. Pump and Valve Area Temperature - High	
g. Pump and Valve Area Ventilation ΔT - High	
h. Holdup Pipe Area Temperature - High	
i. Holdup Pipe Area Ventilation ΔT - High	
j. Filter/Demineralizer Valve Room Area Temperature - High	
k. Filter/Demineralizer Valve Room Area Ventilation ΔT - High	
l. Pump Suction Flow - High	
4. REACTOR CORE ISOLATION COOLING SYSTEM ISOLATION	N/A
a. RCIC Steam Line Flow - High	
b. RCIC Steam Supply Pressure - Low	
c. RCIC Turbine Exhaust Diaphragm Pressure - High	
d. RCIC Equipment Room Temperature - High	
e. RCIC Steam Line Tunnel Temperature - High	
f. RCIC Steam Line Tunnel ΔTemperature - High	
g. Drywell Pressure - High	
h. RCIC Equipment Room ΔTemperature - High	
5. Deleted.	

A.2

<See ITS 3.3.6.1>

Table 3.3.6.2-1

TABLE 4.3.2.1-1

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

A.4

Function TRIP FUNCTION	SR 3.3.6.2.1 CHANNEL CHECK	SR 3.3.6.2.2 CHANNEL FUNCTIONAL TEST	SR 3.3.6.2.3 CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
A. AUTOMATIC INITIATION				
1. PRIMARY CONTAINMENT ISOLATION				
a. Reactor Vessel Water Level				
1) Low, Level 3	S	Q	R	1, 2, 3
2) Low Low, Level 2	NA	Q	R	1, 2, 3
3) Low Low Low, Level 1	S	Q	R	1, 2, 3
b. Drywell Pressure - High	NA	Q	Q	1, 2, 3
c. Main Steam Line				
1) DELETED				
2) Pressure - Low	NA	Q	Q	1
3) Flow - High	NA	Q	R	1, 2, 3
d. DELETED				
e. Condenser Vacuum - Low	NA	Q	Q	1, 2*, 3*
f. Main Steam Line Tunnel Δ Temperature - High	NA	Q	R	1, 2, 3
2. SECONDARY CONTAINMENT ISOLATION			24 months LE.1	Notes (a) and (b) to Table 3.3.6.2-1
3 a. Reactor Building Vent Exhaust Plenum Radiation - High	S	Q	R	1, 2, 3 and **
2 b. Drywell Pressure - High	NA	Q	R	1, 2, 3 Note (a) to Table 3.3.6.2-1
1 c. Reactor Vessel Water Level - Low Low, Level 2	NA	Q	R	1, 2, 3, and #
4 d. Fuel Pool Vent Exhaust Radiation - High	S	Q	R 24 months LE.1	1, 2, 3 and **
3. REACTOR WATER CLEANUP SYSTEM ISOLATION				
a. Δ Flow - High	S	Q	R	1, 2, 3
b. Heat Exchanger Area Temperature - High	NA	Q	Q	1, 2, 3
c. Heat Exchanger Area Ventilation ΔT - High	NA	Q	Q	1, 2, 3
d. SLCS Initiation	NA	R	NA	1, 2, 3
e. Reactor Vessel Water Level - Low Low, Level 2	NA	Q	R	1, 2, 3

<See ITS 3.3.6.1>

<See ITS 3.3.6.1>

A.1

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ITS 3.3.6.2

Table 3.3.6.2-1

TABLE 4.3.2.1-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Function TRIP FUNCTION	SR 3.3.6.2.1 CHANNEL CHECK	SR 3.3.6.2.2 CHANNEL FUNCTIONAL TEST	SR 3.3.6.2.3 CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
6. RHR SYSTEM SHUTDOWN COOLING MODE ISOLATION				
a. Reactor Vessel Water Level Low, Level 3	S	Q	R	1, 2, 3
b. Reactor Vessel (RHR Cut-in Permissive) Pressure-High	NA	Q	Q	1, 2, 3
c. RHR Pump Suction Flow-High	NA	Q	Q	1, 2, 3
B. MANUAL INITIATION				
1. Inboard Valves	NA	R	NA	1, 2, 3
2. Outboard Valves	NA	R	NA	1, 2, 3
5. 3. Inboard Valves	NA	R 24 months	NA	1, 2, 3 and **,#
5 4. Outboard Valves	NA	R	NA	1, 2, 3 and **,#
5. Inboard Valves	NA	R	NA	1, 2, 3
6. Outboard Valves	NA	R	NA	1, 2, 3
7. Outboard Valve	NA	R	NA	1, 2, 3

<See ITS 3.3.6.1>

LA.4

A.7

LD.1

Notes (a) and (b) to Table 3.3.6.2-1

<See ITS 3.3.6.1>

* Not required when all turbine stop valves are not full open.

Notes (a) and (b) to Table 3.3.6.2-1 — ** When handling irradiated fuel in the secondary containment and during CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

Notes (a) to Table 3.3.6.2-1 — # During CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

L.3

A.1

ITS 3.3.6.2

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b. Perform required standby gas treatment filter testing in accordance with, and at the frequency specified by, the Ventilation Filter Testing Program.

c. Deleted.

LD.1

d. At least once per ~~18~~ 24 months by:

1. Deleted.

2. Verifying that the filter train starts and isolation dampers open on each of the following test signals:

A.8

SR 3.3.6.2.4 for Functions 1,2,3 and 4

   a. Reactor Building exhaust plenum radiation - high,

   b. Drywell pressure - high,

   c. Reactor vessel water level - low low, level 2, and

   d. Fuel pool vent exhaust radiation - high.

3. Deleted.

<See ITS 3.6.4.3>

ITS 3.3.6.2

A.1

3/4.3.2 ISOLATION ACTUATION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

LCO 3.3.6.2 3.3.2 The isolation actuation instrumentation channels shown in Table 3.3.2-1 shall be OPERABLE ~~with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.2-2~~ ~~and with ISOLATION SYSTEM RESPONSE TIME as shown in Table 3.3.2-3~~. LA.1 A.2

APPLICABILITY: As shown in Table 3.3.2-1.

ACTION: add proposed ACTIONS Note A.3

a. With an isolation actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.2-2, declare the channel inoperable until the channel is restored to OPERABLE status ~~with its trip setpoint adjusted consistent with the Trip Setpoint value~~. LA.1

ACTIONS A and B

b. With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System Requirement for one trip system, either

ACTION A

1. Place the inoperable channel(s) and/or trip system in the tripped condition* within

~~a) 1 hour for trip functions without an OPERABLE channel.~~ LB.1
b) 12 hours for trip functions common to RPS Instrumentation, and
c) 24 hours for trip functions not common to RPS Instrumentation,

or

ACTION C 2. Take the ACTION required by Table 3.3.2-1.

ACTION B

c. With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement for both trip systems,

1. Place at least one trip system** in the tripped condition*** within one hour, and

ACTION A

2. a) Place the inoperable channel(s) in the remaining trip system in the tripped condition*** within

~~1) 1 hour for trip functions without an OPERABLE channel~~ LB.1
2) 12 hours for trip functions common to RPS Instrumentation, and
3) 24 hours for trip functions not common to RPS Instrumentation,

or

ACTION C b) Take the ACTION required by Table 3.3.2-1.

LA.2

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

** If more channels are inoperable in one trip system than in the other, select that trip system to place in the tripped condition except when this would cause the Trip Function to occur.

*** 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 1 hour or the ACTION required by Table 3.3.2-1 for that Trip Function shall be taken. LA.2 LB.1

ACTION B
ACTION C

ITS 3.3.6.2

A.1

SURVEILLANCE REQUIREMENTS

Note 1 to Surveillance Requirements

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

SR 3.3.6.2.4

4.3.2.2 LOGIC SYSTEM FUNCTIONAL TESTS ~~and simulated automatic operation~~ of all channels shall be performed at least once per ~~18~~ 24 months. LA.3 LD.1

~~4.3.2.3 The ISOLATION SYSTEM RESPONSE TIME of each isolation trip function shown in Table 3.3.2-3 shall be demonstrated to be within its limit at least once per 18 months. Each test shall include at least one channel per trip system such that all channels are tested at least once every N times 18 months, where N is the total number of redundant channels in a specific isolation trip system.~~ A.2

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Table 3.3.6.2-1

TABLE 3.3.2-1

ISOLATION ACTUATION INSTRUMENTATION

Function TRIP FUNCTION	~~VALVE GROUPS OPERATED BY SIGNAL~~ LA.4	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM (b)	APPLICABLE OPERATIONAL CONDITION	ACTION
A. AUTOMATIC INITIATION A.4				See ITS 3.3.6.1
1. PRIMARY CONTAINMENT ISOLATION				
a. Reactor Vessel Water Level				
(1) Low, Level 3	7	2	1, 2, 3	20
(2) Low Low, Level 2	2, 3	2	1, 2, 3	20
(3) Low Low Low, Level 1	1, 10	2	1, 2, 3	20
b. Drywell Pressure - High	2, 7, 10	2	1, 2, 3	20
c. Main Steam Line				
1) DELETED				
2) Pressure - Low	1	2	1	23
3) Flow - High	1	2/line(d)	1, 2, 3	21
d. DELETED				
e. Main Steam Line Tunnel ΔTemperature - High	1	2	1(i)(j), 2(i)(j), 3(i)(j)	21
f. Condenser Vacuum - Low	1	2	1, 2*, 3*	21
2. SECONDARY CONTAINMENT ISOLATION				
3 a. Reactor Building Vent Exhaust Plenum Radiation - High	~~4(c)(e)~~ LA.4	2	1, 2, 3 and **	24C
2 b. Drywell Pressure - High	~~4(c)(e)~~	2	1, 2, 3	24C
1 c. Reactor Vessel Water Level - Low Low, Level 2	~~4(c)(e)~~	2	1, 2, 3, and #	24C
4 d. Fuel Pool Vent Exhaust Radiation - High	~~4(c)(e)~~	2	1, 2, 3, and **	24 C

See ITS 3.3.6.1

(Notes (a) and (b) to Table 3.3.6.2-1

Note (a) to Table 3.3.6.2-1

Notes (a) and (b) to Table 3.3.6.2-1

A.1

ITS 3.3.6.2

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Table 3.3.6.2-1

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

Function TRIP FUNCTION	VALVE GROUPS OPERATED BY SIGNAL	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM (b)	APPLICABLE OPERATIONAL CONDITION	ACTION
5. DELETED				
6. RHR SYSTEM SHUTDOWN COOLING MODE ISOLATION				
a. Reactor Vessel Water Level - Low, Level 3	6	2	1, 2, 3	25
b. Reactor Vessel (RHR Cut-in Permissive) Pressure - High	6	1	1, 2, 3	25
c. RHR Pump Suction Flow - High	6	1	1, 2, 3	25
5. B. MANUAL INITIATION				
1. Inboard Valves	1, 2, 5, 6, 7	1/group	1, 2, 3	26
2. Outboard Valves	1, 2, 5, 6	1/group	1, 2, 3	26
5. 3. ~~Inboard Valves~~	4 ~~(c)(e)~~	1/group	1, 2, 3 and ~~**, #~~	26
5. 4. ~~Outboard Valves~~	4 ~~(c)(e)~~	1/group	1, 2, 3 and ~~**, #~~	26
5. Inboard Valves	3, 8, 9	1/valve	1, 2, 3	26
6. Outboard Valves	3, 8, 9	1/valve	1, 2, 3	26
7. Outboard Valve	8(m)	1/group	1, 2, 3	26

See ITS 3.3.6.1

LA.4

LA.4 See ITS 3.3.6.1 LA.4

A.1

Notes (a) and (b)

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ITS 3.3.6.2

A.1

ITS 3.3.6.2

TABLE 3.3.2-1 (Continued)
ISOLATION ACTUATION INSTRUMENTATION L.1

add proposed Required Actions C.1.2 and C.2.2

<See ITS 3.3.6.1>

ACTION STATEMENTS

ACTION 20 - Be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.

ACTION 21 - Be in at least STARTUP with the associated isolation valves closed within 6 hours or be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.

ACTION 22 - Close the affected system isolation valves within 1 hour and declare the affected system inoperable.

ACTION 23 - Be in at least STARTUP within 6 hours.

A.5

ACTION C ACTION 24 - Establish SECONDARY CONTAINMENT INTEGRITY with the standby gas treatment system operating within 1 hour.

<See ITS 3.3.6.1> ACTION 25 - Lock the affected system isolation valves closed within 1 hour and declare the affected system inoperable.

ACTION 26 - Provided that the manual initiation function is OPERABLE for each other group valve, inboard or outboard, as applicable, in each line, restore the manual initiation function to OPERABLE status within 24 hours; otherwise, restore the manual initiation function to OPERABLE status within 8 hours; otherwise: M.1

a. ~~Be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours~~, or A.9

ACTION C — b. Close the affected system isolation valves within the next hour ~~and~~ or L.4 declare the affected system inoperable. L.2

add proposed Required Action C.2.1

<See ITS 3.3.6.1>

TABLE NOTATIONS

* May be bypassed with all turbine stop valves not full open.

Notes (a) and (b) to Table 3.3.6.2-1 ** When handling irradiated fuel in the secondary containment and during CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

Note (a) to Table 3.3.6.2-1 # During CORE ALTERATIONS and operations with a potential for draining the reactor vessel. L.3

(a) Deleted.

maintains isolation capability

Note 2 to Surveillance Requirements (b) A channel may be placed in an inoperable status for up to 6 hours for required surveillance without placing the channel in the tripped condition provided at least one other OPERABLE channel in the same trip system is monitoring that parameter. In addition for those trip systems with a design providing only one channel per trip system, the channel may be placed in an inoperable status for up to 8 hours for required surveillance testing without placing the channel in the tripped condition provided that the redundant isolation valve, inboard or outboard, as applicable, in each line is operable and all required actuation instrumentation for that redundant valve is OPERABLE, or place the trip system in the tripped condition. LB.2

(c) ~~Also actuates the standby gas treatment system.~~

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

(e) ~~Also actuates secondary containment ventilation isolation dampers per Table 3/6.5.2-1.~~

(f) Closes only RWCU system inlet outboard valve.

<See ITS 3.3.6.1>

Table 3.3.6.2-1

TABLE 3.3.2-2
ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

Function TRIP FUNCTION [A.4]	~~TRIP SETPOINT~~ [LA.1]	ALLOWABLE VALUE
~~A. AUTOMATIC INITIATION~~		
1. PRIMARY CONTAINMENT ISOLATION <see ITS 3.3.6.1>		
a. Reactor Vessel Water Level		
1) Low, Level 3	≥ 12.5 inches*	≥ 11.0 inches*
2) Low Low, Level 2	≥ -50 inches*	≥ -57 inches*
3) Low Low Low, Level 1	≥ -129 inches*	≥ -136 inches*
b. Drywell Pressure - High	≤ 1.69 psig	≤ 1.89 psig
c. Main Steam Line		
1) DELETED		
2) Pressure - Low	≥ 854 psig	≥ 834 psig
3) Flow - High	≤ 111 psid	≤ 116 psid
d. DELETED		
e. Main Steam Line Tunnel Δ Temperature - High	≤ 65°F	≤ 70°F
f. Condenser Vacuum - Low	> 7 inches Hg vacuum	> 5.5 inches Hg vacuum
2. SECONDARY CONTAINMENT ISOLATION		[LF.1]
3 a. Reactor Building Vent Exhaust Plenum Radiation - High	~~≤ 10 mr/h~~ [LA.1]	≤ 15 mr/h
2 b. Drywell Pressure - High	~~≤ 1.69 psig~~	≤ 1.89 psig
1 c. Reactor Vessel Water Level - Low Low, Level 2	~~≥ -50 inches*~~	≥ -57 inches~~*~~ [A.6]
4 d. Fuel Pool Vent Exhaust Radiation - High	~~≤ 10 mr/h~~	≤ 15 mr/h
~~3. REACTOR WATER CLEANUP SYSTEM ISOLATION~~ <see ITS 3.3.6.1>		
~~a. ΔFlow - High~~	~~≤ 70 gpm~~	~~≤ 87.5 gpm~~
~~b. Heat Exchanger Area Temperature - High~~	~~≤ 149°F~~	~~≤ 156.8°F~~
~~c. Heat Exchanger Area Ventilation ΔT - High~~	~~≤ 33°F~~	~~≤ 40.3°F~~
~~d. SLCS Initiation~~	~~N.A.~~	~~N.A.~~
~~e. Reactor Vessel Water Level - Low Low, Level 2~~	~~≥ -50 inches*~~	~~≥ -57 inches*~~

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ITS 3.3.6.2

Table 3.3.6.2-1

TABLE 3.3.2-2 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

Function TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
6. RHR SYSTEM SHUTDOWN COOLING MODE ISOLATION		
a. Reactor Vessel Water Level - Low, Level 3	≥ 12.5 inches*	≥ 11.0 inches*
b. Reactor Vessel (RHR Cut-in Permissive) Pressure - High	≤ 135 psig**	≤ 145 psig**
c. RHR Pump Suction Flow - High	≤ 180" H_2O	≤ 186" H_2O
5. B. MANUAL INITIATION	N.A.	N.A.
1. Inboard Valves		
2. Outboard Valves		
5. 3. ~~Inboard Valves~~		
5 4. ~~Outboard Valves~~		
5. Inboard Valves		
6. Outboard Valves		
7. Outboard Valve		

LA.4

<see ITS 3.3.6.1>

A.6

~~*See Bases Figure B 3/4 3-1.~~

**Corrected for cold water head with reactor vessel flooded. <see ITS 3.3.6.1>

N.A. - Not Applicable.

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TABLE 3.3.2-3

ITS 3.3.6.2

ISOLATION SYSTEM INSTRUMENTATION RESPONSE TIME

TRIP FUNCTION	RESPONSE TIME (Seconds)#
A. AUTOMATIC INITIATION	
1. PRIMARY CONTAINMENT ISOLATION	
a. Reactor Vessel Water Level	
1) Low, Level 3	N/A
2) Low Low, Level 2	N/A
3) Low Low Low, Level 1	≤ 1.0*,**
b. Drywell Pressure - High	N/A
c. Main Steam Line	
1) DELETED	
2) Pressure - Low	≤ 2.0*,**
3) Flow - High	≤ 0.5*,**
d. DELETED	
e. Condenser Vacuum - Low	N/A
f. Main Steam Line Tunnel ΔTemperature - High	N/A
~~2. SECONDARY CONTAINMENT ISOLATION~~	~~N/A~~
~~a. Reactor Building Vent Exhaust Plenum Radiation - High~~	
~~b. Drywell Pressure - High~~	
~~c. Reactor Vessel Water Level - Low, Level 2~~	
~~d. Fuel Pool Vent Exhaust Radiation - High~~	
3. REACTOR WATER CLEANUP SYSTEM ISOLATION	N/A
a. ΔFlow - High	
b. Heat Exchanger Area Temperature - High	
c. Heat Exchanger Area Ventilation ΔT-High	
d. SLCS Initiation	
e. Reactor Vessel Water Level - Low Low, Level 2	
f. Pump and Valve Area Temperature - High	
g. Pump and Valve Area Ventilation ΔT - High	
h. Holdup Pipe Area Temperature - High	
i. Holdup Pipe Area Ventilation ΔT - High	

A.2

See ITS 3.3.6.1

Table 3.3.6.2-1

TABLE 4.3.2.1-1

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

A.4

Function TRIP FUNCTION	SR 3.3.6.2.1 CHANNEL CHECK	SR 3.3.6.2.2 CHANNEL FUNCTIONAL TEST	SR 3.3.6.2.3 CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
A. AUTOMATIC INITIATION				
1. PRIMARY CONTAINMENT ISOLATION				
a. Reactor Vessel Water Level				
1) Low, Level 3	S	Q	R	1, 2, 3
2) Low Low, Level 2	NA	Q	R	1, 2, 3
3) Low Low Low, Level 1	S	Q	R	1, 2, 3
b. Drywell Pressure - High	NA	Q	Q	1, 2, 3
c. Main Steam Line				
1) DELETED				
2) Pressure - Low	NA	Q	Q	1
3) Flow - High	NA	Q	R	1, 2, 3
d. DELETED				
e. Condenser Vacuum - Low	NA	Q	Q	1, 2*, 3*
f. Main Steam Line Tunnel Δ Temperature - High	NA	Q	R	1, 2, 3
2. SECONDARY CONTAINMENT ISOLATION				
3 a. Reactor Building Vent Exhaust Plenum Radiation - High	S	Q	R 24 months	1, 2, 3 and ** Notes (a) and (b) to Table 3.3.6.2-1
2 b. Drywell Pressure - High	NA	Q	R	1, 2, 3
1 c. Reactor Vessel Water Level - Low Low, Level 2	NA	Q	R	1, 2, 3, and # Note (a) to Table 3.3.6.2-1
4 d. Fuel Pool Vent Exhaust Radiation - High	S	Q	R 24 months	1, 2, 3 and ** Notes (a) and (b) to Table 3.3.6.2-1
3. REACTOR WATER CLEANUP SYSTEM ISOLATION				
a. Δ Flow - High	S	Q	R	1, 2, 3
b. Heat Exchanger Area Temperature - High	NA	Q	Q	1, 2, 3
c. Heat Exchanger Area Ventilation ΔT - High	NA	Q	Q	1, 2, 3
d. SLCS Initiation	NA	Q	Q	1, 2, 3
e. Reactor Vessel Water Level - Low Low, Level 2	NA	R	NA	1, 2, 3
	NA	Q	R	1, 2, 3

See ITS 3.3.6.1

See ITS 3.3.6.1

LE.1

A.1

Table 3.3.6.2-1

TABLE 4.3.2.1-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Function TRIP FUNCTION	SR 3.3.6.2.1 CHANNEL CHECK	SR 3.3.6.2.2 CHANNEL FUNCTIONAL TEST	SR 3.3.6.2.3 CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
6. RHR SYSTEM SHUTDOWN COOLING MODE ISOLATION				
a. Reactor Vessel Water Level - Low, Level 3	S	Q	R	1, 2, 3
b. Reactor Vessel (RHR Cut-in Permissive) Pressure-High	NA	Q	Q	1, 2, 3
c. RHR Pump Suction Flow-High	NA	Q	Q	1, 2, 3
5. B. MANUAL INITIATION				
1. Inboard Valves	NA	R	NA	1, 2, 3
2. Outboard Valves	NA	R	NA	1, 2, 3
5. 3. Inboard Valves	NA	R 24 months	NA	1, 2, 3 and **,#
5. 4. Outboard Valves	NA	R	NA	1, 2, 3 and **,#
5. Inboard Valves	NA	R	NA	1, 2, 3
6. Outboard Valves	NA	R	NA	1, 2, 3
7. Outboard Valve	NA	R	NA	1, 2, 3

See ITS 3.3.6.1

LA.4

A.7

LD.1

A.1

Notes (a) and (b) to Table 3.3.6.2-1

see ITS 3.3.6.1

* Not required when all turbine stop valves are not full open.

Notes (a) and (b) to Table 3.3.6-2-1

** When handling irradiated fuel in the secondary containment and during CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

Notes (a) to Table 336.2-1

\# During CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

L.3

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SURVEILLANCE REQUIREMENTS (Continued)

b. Perform required standby gas treatment filter testing in accordance with, and at the frequency specified by, the Ventilation Filter Testing Program.

c. Deleted. 24 LD.1

d. At least once per ~~18~~ months by:

1. Deleted. A.8

2. Verifying that the filter train starts and isolation dampers open on each of the following test signals:

SR 3.3.6.2.4 for Functions 1, 2, 3 and 4

a. Reactor Building exhaust plenum radiation - high,

b. Drywell pressure - high,

c. Reactor vessel water level - low low, level 2, and

d. Fuel pool vent exhaust radiation - high.

3. Deleted.

<See ITS 3.6.4.3>

ADMINISTRATIVE

A.1 In the conversion of the LaSalle 1 and 2 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1434, Rev. 1 (i.e., the Improved Standard Technical Specifications (ISTS)).

A.2 CTS 3.3.2 and CTS 4.3.2.3 requires the ISOLATION SYSTEM RESPONSE TIME of each Function to be demonstrated. However, there are no instrumentation response times for Secondary Containment Isolation Instrumentation Functions as identified in CTS Table 3.3.2-3, which contains the response time limits (the table lists "N/A" as the response time limit). Therefore, the references to ISOLATION SYSTEM RESPONSE in CTS 3.3.2 has been deleted and CTS 4.3.2.3 is deleted.

A.3 This proposed change to the CTS 3.3.2 Actions provides more explicit instructions for proper application of the Actions for Technical Specification compliance. In conjunction with the proposed Specification 1.3, "Completion Times," the ITS 3.3.6.2 ACTIONS Note ("Separate Condition entry is allowed for each....") and the wording for ACTION A ("One or more channels...") and ACTION B ("One or more automatic Functions...") provide direction consistent with the intent of the existing Action for an inoperable isolation instrumentation channel. It is intended that each inoperable channel is allowed a certain time to complete the Required Actions. Since this change only provides more explicit direction of the current interpretation of the existing specifications, this change is considered administrative.

A.4 Section A, Automatic Initiation title in CTS Tables 3.3.2-1, 3.3.2-2, and 4.3.2.1-1 has been deleted since only the secondary containment isolation functions are being included in proposed ITS 3.3.6.2. Since the current requirements are maintained (except as addressed in the discussion of changes below), this change is considered to be administrative in nature.

A.5 CTS Table 3.3.2-1 Action 24 has been changed by replacing the use of the term SECONDARY CONTAINMENT INTEGRITY with the elements of that term and clarifies the need to isolate SCIVs and start the associated SGT subsystem(s). The change is editorial in that all the individual requirements are specifically addressed by ITS 3.3.6.2 Required Actions C.1.1 and C.2.1. Therefore the

ADMINISTRATIVE

A.5 (cont'd) change is a presentation preference adopted by the BWR ISTS, NUREG-1434, Rev. 1. Refer also to the Discussion of Changes associated with the Definitions Section which addresses deletion of the SECONDARY CONTAINMENT INTEGRITY definition.

A.6 CTS Table 3.3.2-2 Footnote * refers to Bases Figure 3/4.3-1. This Figure is providing information as to what reactor vessel water level the various reactor water instruments actuate, in comparison to one another. This information is already essentially contained in the Allowable Value column of this Table. Therefore, this reference is being deleted and is considered administrative.

A.7 The CHANNEL FUNCTIONAL TEST (CFT) requirement for CTS Table 4.3.2.1-1 Trip Functions B.3 and B.4, Manual Initiation, has been deleted since it is redundant to the LOGIC SYSTEM FUNCTIONAL TEST (LSFT). The Manual Initiation Function channels have no adjustable setpoints, but are based on switch manipulation. The LSFT (proposed SR 3.3.6.2.4) tests all contacts and will provide proper testing of the channels tested by the CFT. Therefore, this deletion is considered administrative.

A.8 The technical content of CTS 4.6.5.3.d.2 was divided into two Surveillances. The majority of this Surveillance is performed as proposed SR 3.3.6.2.4, a LOGIC SYSTEM FUNCTIONAL TEST (LSFT). The LSFT verifies that each automatic signal functions properly. The actual system functional test portion is performed in the ITS 3.6.4.3 Surveillance Requirements. This will ensure that the entire system is tested with proper overlap.

A.9 The shutdown requirement of CTS Table 3.3.2-1 Action 26.a has been deleted since the requirements of Action 26.b (ITS 3.3.6.2 ACTION C) can always be taken. Therefore, deletion of this requirement is considered administrative.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 For the manual initiation function of secondary containment isolation actuation instrumentation, CTS Table 3.3.2-1 Action 26 provides an additional 8 hours or 24 hours (after the 24 hours allowed by CTS 3.3.2 Actions b and c) of operation before isolation of the valves or a shutdown is required. ITS 3.3.6.2 ACTION A will allow only 24 hours before ACTION C would require isolation of the valves. Twenty-four hours provides sufficient time for restoration of the channel. However, this represents a more restrictive change for plant operation.

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

LA.1 CTS 3.3.2 requires the Trip Setpoints to be set consistent with the values shown in the Trip Setpoint column of Table 3.3.2-2. CTS 3.3.2 Action a requires inoperable channels to be restored to OPERABLE status with trip setpoints adjusted consistent with the Trip Setpoint values. Trip setpoints are operational details that are not directly related to the OPERABILITY of the instrumentation. These details are to be relocated to the Technical Requirements Manual (TRM) and the references to these setpoints in CTS 3.3.2 are deleted. The Allowable Value is the required limitation for the associated Function and this value is retained in the Technical Specifications. These relocated Trip Setpoints are not required to be in the Technical Specifications to provide adequate protection of the public health and safety. The TRM will be incorporated into the LaSalle 1 and 2 UFSAR at ITS implementation. Any changes to the relocated Trip Setpoints in the TRM will be controlled by the provisions of 10 CFR 50.59.

LA.2 Details of the methods for performing Required Actions, regarding placing channels in trip or which trip system to trip, in the "*", "**", and "***" footnotes to CTS 3.3.2 ACTIONS are proposed to be relocated to the Bases. These details represent operational considerations and are not required in the associated action to assure equipment is placed in a safe condition in the event a secondary containment isolation instrumentation channel becomes inoperable. As such, these details do not represent limits, conditions for establishing equipment OPERABILITY, or remedial actions or instructions necessary to establish limits, conditions, or remedial actions. These details are not necessary to be included in Technical Specifications to ensure actions are taken to restore isolation capability. The ACTIONS of ITS 3.3.6.2 are adequate to ensure action is taken to restore isolation capability (including tripping one of the affected trip systems). As such, the relocated details are not required to be in Technical Specifications to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the Bases Control Program described in Chapter 5 of the ITS.

LA.3 The detail in CTS 4.3.2.2 relating to method for performing the LOGIC SYSTEM FUNCTIONAL TEST (simulated automatic operation) is proposed to be relocated to the Bases. This detail is not necessary to ensure the OPERABILITY of the secondary containment isolation instrumentation. The requirements of ITS 3.3.6.2 and the associated Surveillance Requirements are adequate to ensure the secondary containment isolation instruments are maintained OPERABLE. Therefore, the relocated details are not required to be

TECHNICAL CHANGES - LESS RESTRICTIVE

LA.3 (cont'd) in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

LA.4 System design and operational details of current Table 3.3.2-1 Notes (c) and (e) and that the Manual Initiation Function isolates the inboard and outboard valves are proposed to be relocated to the Bases. Details relating to system design and operation (e.g., specific valves and systems affected) are unnecessary in the LCO. These details are not necessary to ensure the OPERABILITY of the secondary containment isolation instrumentation. The requirements of ITS 3.3.6.2 and the associated Surveillance Requirements are adequate to ensure the secondary containment isolation instruments are maintained OPERABLE. Therefore, the relocated details are not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

LB.1 CTS 3.3.2 Action b.1.a) requires that, when the number of OPERABLE channels is less than required by the Minimum OPERABLE Channels per Trip System requirement for one Trip System, the inoperable channel(s) must be placed in the tripped condition within 1 hour for trip functions without an OPERABLE channel. In addition, CTS 3.3.2 Action b.1 footnote * requires a channel to be restored to OPERABLE status within 6 hours if placing an inoperable channel in trip causes the Trip Function to occur. CTS 3.3.2 Action c.2.a)1) requires that, when the number of OPERABLE channels is less than required by the Minimum OPERABLE Channels per Trip System requirement for both trip systems, then after placing the inoperable channel(s) in one trip system in the tripped condition in 1 hour (CTS 3.3.2 Action c.1), the inoperable channel(s) in the remaining trip system must be placed in the tripped condition within 1 hour for trip functions without an OPERABLE channel. In addition, CTS 3.3.2 Action c.2.a) footnote "***" requires the inoperable channel to be restored to OPERABLE status within 1 hour, if placing the inoperable channel in trip causes the Trip Function to occur. ITS 3.3.6.2 does not include these requirements. ITS 3.3.6.2 ACTION A establishes the requirement to place the inoperable channel(s) in trip within either 12 or 24 hours, which is consistent with CTS 3.3.2 ACTIONS b.1.b), b.1.c), c.2.a)2), and c.2.a)3), irrespective of the number of inoperable channels in a trip system. For most Functions, two channels are required per trip system and are combined in a two-out-of-two logic. Thus, when one channel is inoperable, the trip system will not actuate to close the associated SCIVs and start the associated SGT subsystem. Therefore,

TECHNICAL CHANGES - LESS RESTRICTIVE

LB.1 (cont'd) having a second channel inoperable is essentially the same as one channel inoperable, the associated valve will not receive an isolation signal. ITS 3.3.6.2 ACTION B continues to ensure that the isolation capability of a penetration is not lost for greater than 1 hour. In addition, for those trip systems that have only one channel, the CTS unnecessarily restricts the restoration time to 1 hour (since when one channel is inoperable, the trip system has no OPERABLE channels). These conditions (loss of all channels in a trip system) was evaluated in the reliability analyses of NEDC-30851-P-A, Supplement 2, March 1989 and NEDC-31677-P-A, July 1990, and found to be acceptable. These analyses are the basis for the current 12 hour and 24 hour restoration times in the CTS 3.3.2 Actions. The results of the NRC review of these generic reliability analyses as it relates to LaSalle 1 and 2 is documented in the NRC Safety Evaluation Report (SER) dated August 2, 1995. The SER concluded that the generic reliability analyses are acceptable to LaSalle 1 and 2 and that LaSalle 1 and 2 meets all requirements of the NRC SERs accepting the generic reliability analyses. Under these conditions, the other Trip System maintains the isolation capability.

LB.2 CTS Table 3.3.2-1 footnote (b), which allows a delay in entering the associated Action statement during performance of Surveillances, has been clarified to provide direct indication of the intent of the current wording and to be consistent with the reliability analysis of NEDC-31677-P-A, July 1990, and NEDC-30857-P-A, Supplement 2, March 1989. The CTS allows a channel to be placed in an inoperable status for up to 6 hours for required surveillance without placing the channel in the tripped condition provided at least one other OPERABLE channel in the same trip system is monitoring the parameter. In addition, for those trip systems with a design providing only one channel per trip system, the channel may be placed in an inoperable status for up to 8 hours for required surveillance testing without placing the channel in the tripped condition provided that the redundant isolation valves, inboard or outboard, as applicable, in each line is OPERABLE and all required actuation instrumentation for that redundant valve is OPERABLE, or place the trip system in the tripped condition. The current words "provided at least one other OPERABLE channel in the same trip system is monitoring that parameter" are intended to ensure that the trip capability of the Function is maintained. However, it does not provide this assurance for all logic system designs. In addition, for those trip systems that have only one channel, the 8 hour allowance has been reduced to 6 hours and the wording has been simplified to require trip capability of the Function to be maintained. The reduction in the allowed out of service time from 8 hours to 6 hours is consistent

TECHNICAL CHANGES - LESS RESTRICTIVE

LB.2 (cont'd) with the specified reliability analyses. Therefore, the Note has been modified in ITS 3.3.6.2 (Note 2 to the Surveillance Requirements) to state "provided the associated Function maintains isolation capability." This is the intent of the current Note and is based on previously conducted reliability analyses (NEDC-31677-P-A, July 1990, and NEDC-30851-P-A, Supplement 2, March 1989). The results of the NRC review of these generic reliability analyses as it relates to LaSalle 1 and 2 is documented in the NRC Safety Evaluation Report (SER) dated August 2, 1995. The SER concluded that the generic reliability analyses are acceptable to LaSalle 1 and 2 and that LaSalle 1 and 2 meets all requirements of the NRC SERs accepting the generic reliability analyses.

LD.1 The Frequency for performing the LOGIC SYSTEM FUNCTIONAL TEST of CTS 4.3.2.2 and CTS 4.6.5.3.d.2 (proposed SR 3.3.6.2.4) and the CHANNEL FUNCTIONAL TEST (CFT) for the Manual Initiation Function specified in CTS Table 4.3.2.1-1 (changed to LSFT in Discussion of Change A.7 above) have been extended from 18 months to 24 months. These SRs ensure that Secondary Containment Isolation Instrumentation and Standby Gas Treatment (SGT) actuation logic will function as designed to ensure proper response during an analyzed event. The proposed change will allow these Surveillances to extend their Surveillance Frequency from the current 18 month Surveillance Frequency (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2) to a 24 month Surveillance Frequency (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2). This proposed change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical maintenance and surveillance data have shown that these tests normally pass their Surveillances at the current Frequency. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. The SCIVs and SGT System including the automatic actuating logic is designed to be single failure proof, and therefore, is highly reliable. In addition, major deviations in the instrumentation during the operating cycle will be detected since other surveillances are performed such as the CHANNEL CHECK and CHANNEL FUNCTIONAL TEST (proposed SRs 3.3.6.2.1 and 3.3.6.2.2) at a more frequent basis.

TECHNICAL CHANGES - LESS RESTRICTIVE

LD.1 (cont'd) Based on the inherent system and component reliability and the testing performed during the operating cycle, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 24-month Surveillance Frequencies, if performed at the maximum interval allowed by proposed SR 3.0.2 (30 months) do not invalidate any assumptions in the plant licensing basis.

Furthermore, as stated in the NRC Safety Evaluation Report (dated August 2, 1993) relating to extension of the Peach Bottom Atomic Power Station, Unit Numbers 2 and 3 surveillance intervals from 18 to 24 months:

"Industry reliability studies for boiling water reactors (BWRs), prepared by the BWR Owners Group (NEDC-30936P) show that the overall safety systems' reliabilities are not dominated by the reliabilities of the logic system, but by that of the mechanical components, (e.g., pumps and valves), which are consequently tested on a more frequent basis. Since the probability of a relay or contact failure is small relative to the probability of mechanical component failure, increasing the Logic System Functional Test interval represents no significant change in the overall safety system unavailability."

Based on the above discussion, the impact, if any, of this change on system availability is minimal.

LE.1 The Frequency for performing the CHANNEL CALIBRATIONS of CTS 4.3.2.1 as specified in CTS Table 4.3.2.1-1 has been extended to 24 months. The subject SR ensures that the Secondary Containment isolation instrumentation and Standby Gas Actuation Instrumentation will function as designed during an analyzed event. The proposed change will allow these Surveillances to a 24 month Surveillance Frequency (i.e., a maximum of 30 months accounting for the allowable grace period specified in proposed SR 3.0.2). This proposed change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Extending the SR Frequency is acceptable because the isolation initiation logic is designed to be single failure proof, and therefore, is highly reliable. Furthermore, the impacted isolation instrumentation has been evaluated based on make, manufacturer, and model number to determine that the instrumentation's actual drift falls within the design allowance in the associated setpoint calculation. The following paragraphs, listed by CTS Trip Function number, identify by make, manufacturer and model number the drift evaluations performed:

TECHNICAL CHANGES - LESS RESTRICTIVE

LE.1 (cont'd)

Trip Functions A.2.a, A.2.d: Reactor Building Vent Exhaust Plenum Radiation—High and Fuel Pool Vent Exhaust Radiation—High (currently 18 months)

This function is performed by GE 194X927G01 detectors and GE 129B2802G011 radiation monitors. These instruments were evaluated utilizing a qualitative analysis (i.e., engineering judgment). The results of the analysis support a 24 month fuel cycle surveillance interval extension.

Trip Functions A.2.b: Drywell Pressure - High (currently 92 days)

This function is performed by Static-O-Ring 12N6-BX-NX-C1A-JJTTX7 pressure switches. The Static-O-Ring pressure switches' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Trip Function A.2.c: Reactor Vessel Water Level - Low Low, Level 2 (currently 18 months)

This function is performed by Rosemount 1153DB5 Transmitters and 710DU Master and Slave Trip Units. The Rosemount transmitters' and trip units' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Based on the design of the instrumentation and the drift evaluations, it is concluded that the impact, if any, on system availability is minimal as a result of the change in the surveillance test interval.

A review of the surveillance test history was performed to validate the above conclusion. This review of the surveillance test history demonstrates that there are no failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month surveillance frequency. In addition, the proposed 24-month Surveillance Frequencies, if performed at the maximum interval allowed by proposed SR 3.0.2 (30 months) do not invalidate any assumptions in the plant licensing basis.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

LF.1 This change revises the Current Technical Specifications (CTS) Allowable Values to the Improved Technical Specifications (ITS) Allowable Values. ITS Section 3.3 reflects Allowable Values consistent with the philosophy of BWR ISTS, NUREG-1434, Rev. 1. These Allowable Values have been established consistent with the methods described in ComEd's Instrument Setpoint Methodology (Nuclear Engineering Standard NES-EIC-20.04, "Analysis of Instrument Channel Setpoint Error and Instrument Loop Accuracy"). For most cases, the Allowable Value determinations were calculated using plant specific operating and surveillance trend data or an allowance as provided for by the Instrument Setpoint Methodology. For all other cases, vendor documented performance specifications for drift were used. The Allowable Value verification used actual plant operating and surveillance trend information to ensure the validity of the developed Allowable Value. All changes to safety analysis limits applied in the methodologies were evaluated and confirmed as ensuring safety analysis licensing acceptance limits are maintained. All design limits applied in the methodologies were confirmed as ensuring that applicable design requirements of the associated systems and equipment are maintained. The methodologies used have been compared with the guidance of ANSI/ISA S67.04-Part I-1994 and ANSI/ISA RP67.04-Part II-1994. Plant calibration procedures will ensure that the assumptions regarding calibration accuracy, measurement and test equipment accuracy, and setting tolerance are maintained. Setpoints for each design or safety analysis limit have been established by accounting for the applicable instrument accuracy, calibration and drift uncertainties, environmental effects, power supply fluctuations, as well as uncertainties related to process and primary element measurement accuracy using the Instrument Setpoint Methodology. The Allowable Values have been established from each design or safety analysis limit by combining the errors associated with channel/instrument calibration (e.g., device accuracy, setting tolerance, and drift) with the calculated Nominal Trip Setpoint also using the Instrument Setpoint Methodology.

Additionally, each applicable channel/instrument has been evaluated and analyzed to support a fuel cycle extension to a 24 month interval. These evaluations and analyses have been performed utilizing the guidance provided in EPRI TR-103335, "Guidelines for Instrument Calibration Extension/Reduction Programs, Revision 1. The EPRI guidance was used to demonstrate that the data collected by the operating plant (from surveillance testing) has remained acceptable and reasonable with regard to the manufacturers design specifications.

TECHNICAL CHANGES - LESS RESTRICTIVE

LF.1 (cont'd) Use of the previously discussed methodologies for determining Allowable Values, instrument setpoints, and analyzing channel/instrument performance ensure that the design basis and associated safety limits will not be exceeded during plant operation. These evaluations, determinations, and analyses now form a portion of the plants design bases.

"Specific"

L.1 New Required Actions have been added to CTS Table 3.3.2-1 Action 24 (ITS 3.3.6.2 Required Actions C.1.2 and C.2.2) to require declaring the affected components inoperable and taking the appropriate actions in the associated Secondary Containment Isolation Valve (SCIV) or SGT Systems Specification if the associated penetrations and SGT subsystems are not placed in the proper condition within 1 hour. Currently, if the SCIV(s) and SGT subsystem(s) are not placed in the proper condition, a CTS 3.0.3 entry would be required, since no further Actions are provided. Since this instrumentation provides a signal for the SCIVs and SGT System (i.e., it supports SCIVs and SGT System OPERABILITY), it is appropriate that the proper action would be to declare the associated SCIVs and SGT subsystems inoperable. The current requirements are overly restrictive, in that if the associated SCIVs and SGT subsystems were inoperable for other reasons, a much longer restoration time is provided.

L.2 CTS Table 3.3.2-1 Action 26 allows 24 hours to restore an inoperable Manual Initiation channel associated with one group if the other Manual Initiation channel is OPERABLE, otherwise only 8 hours is allowed to restore the channels. If this cannot be met the plant must be in MODE 3 in 12 hours and MODE 4 within the following 24 hours (CTS Table 3.3.2-1 ACTION 26.a), or the affected system isolation valves must be closed within an hour and the affected systems must be declared inoperable (CTS Table 3.3.2-1 ACTION 26.b). An additional option has been added to place the associated standby gas treatment (SGT) subsystem(s) in operation (ITS 3.3.6.2 Required Action C.2.1) in lieu of requiring it to be declared inoperable. This action performs the intended function of the instrumentation and therefore plant operations should be allowed to continue. In addition, the Bases state that the method used to place the SGT subsystem in operation must provide for automatically reinitiating the subsystem upon restoration of power following a loss of power to the SGT subsystem. This will ensure the system will automatically start during a design bases event without OPERABLE instrumentation.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

L.3 CTS Tables 3.3.2-1 and 4.3.2.1-1, Trip Function A.2.c, Reactor Vessel Water Level—Low Low, Level 2, is required to be Operable during CORE ALTERATIONS and operations with a potential for draining the reactor vessel as stated in footnote "#" to the Tables. Automatic secondary containment isolation capabilities on reactor vessel water level decreases are not necessary during CORE ALTERATIONS. CORE ALTERATIONS do not result in any increased potential for vessel draindown. If ongoing activities do involve a potential for draining the reactor vessel, the Applicability of ITS Table 3.3.6.2-1 Function 1 will still require the Reactor Vessel Water Level—Low Low, Level 2 Function to be Operable. Therefore, the ITS will not include the Applicability of CORE ALTERATIONS for this Function.

L.4 CTS Table 3.3.2-1 ACTION 26.b for Manual Initiation (Trip Functions B.3 and B.4) requires the affected system isolation valves to be closed and to declare the affected system inoperable. For this Specification these actions are considered to be applicable to the Secondary Containment Isolation Valves (SCIVs) and Standby Gas Treatment (SGT) System. The proposed Required Actions (ITS 3.3.6.2 Required Actions C.1.1 and C.1.2) as they relate to the SCIVs (the SGT System is discussed in Discussion of Change L.2 above) allow either of these actions; declaring the affected components inoperable and taking the appropriate actions in the associated system Specification (SCIVs) or isolating the associated penetration flow path(s). The current requirements are overly restrictive, in that once the SCIVs are closed, they are performing their intended function. There is no reason to require the SCIVs to also be declared inoperable. Alternately, it is acceptable to leave the SCIVs open, provided the SCIVs are declared inoperable. This condition is equivalent to the SCIVs being inoperable for other reasons and is covered by the ACTIONS of the SCIV Specification.

RELOCATED SPECIFICATIONS

None

A.1

ITS 3.3.7.1

INSTRUMENTATION

3/4.3.7 MONITORING INSTRUMENTATION

~~RADIATION MONITORING~~ Control Room Area Filtration (CRAF) INSTRUMENTATION A.2

LIMITING CONDITION FOR OPERATION

LCO 3.3.7.1 3.3.7.1 The ~~radiation monitoring~~ CRAF System instrumentation channels shown in Table 3.3.7.1-1 shall be OPERABLE ~~with their alarm/trip setpoints within the specified limits~~. A.2

APPLICABILITY: As shown in Table 3.3.7.1-1.

ACTION: add proposed ACTIONS NOTE A.3

ACTION A a. With a radiation monitoring instrumentation channel ~~alarm/trip setpoint~~ exceeding the value shown in Table 3.3.7.1-1, ~~adjust the setpoint to within the limit within 4 hours or~~ declare the channel inoperable. M.1

ACTION A b. With one or more ~~radiation monitoring~~ CRAF System channels inoperable, take the ACTION required by Table 3.3.7.1-1. A.2

~~c. The provisions of Specification 3.0.3 are not applicable.~~ A.4

SURVEILLANCE REQUIREMENTS

4.3.7.1 Each of the above required ~~radiation monitoring~~ CRAF System instrumentation channels shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations for the conditions and at the frequencies shown in Table 4.3.7.1-1. A.2

SR 3.3.7.1.1
SR 3.3.7.1.2
SR 3.3.7.1.3

A.5

~~*The normal or emergency power source may be inoperable in OPERATIONAL CONDITION 4 or 5 or when defueled.~~

Allowable Value A.2

TABLE 3.3.7.1-1

RADIATION MONITORING INSTRUMENTATION

SR 3.3.7.1.3

LA.1

INSTRUMENTATION	MINIMUM CHANNELS OPERABLE	APPLICABLE CONDITIONS	~~ALARM/TRIP SETPOINT~~	~~MEASUREMENT RANGE~~	ACTION
LCO 3.3.7.1 a. Main Control Room Atmospheric Control System Radiation Monitoring Subsystem	2 per trip system/train (intake)**	1,2,3,~~5~~ and *	3.5 mR/hr	~~0.1 to 10,000 mR/hr~~	~~70~~ A,B

L.1 LF.1

add proposed 3rd and 4th Applicability

D.1

NOTES

2nd Applicability *When irradiated fuel is being handled in the secondary containment.

Note to Surveillance Requirements **A channel may be placed in an inoperable status for up to 6 hours for required surveillance testing without placing the Trip System in the tripped condition, ~~provided at least one other operable channel in the same Trip System is monitoring that Trip Function.~~

M.2

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ITS 3.3.7.1

ITS 3.3.7.1

TABLE 3.3.7.1-1 (Continued)

RADIATION MONITORING INSTRUMENTATION

ACTION

place in trip in 6 hours L.2

add proposed Required Action A.1

ACTION A

ACTION 70 -

a. With the number of OPERABLE channels per trip system one less than the minimum required, place the inoperable channel in the tripped condition within one hour. 3 6 LB.1

b. With both channels in a trip system inoperable, ~~declare the trip system inoperable. Restore the inoperable trip system to OPERABLE status within 7 days,~~ or, within the next 8 1 hours, initiate and maintain operation of the control room emergency filtration system in the pressurization mode of operation. L.2

ACTION B

c. Otherwise, initiate and maintain operation of the control room emergency filtration system in the pressurization mode of operation within 1 hour.

add proposed Required Action B.2 L.2

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TABLE 4.3.7.1-1

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

		INSTRUMENTATION	SR 3.3.7.1.1 CHANNEL CHECK	SR 3.3.7.1.2 CHANNEL FUNCTIONAL TEST	SR 3.3.7.1.3 CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
LCO 3.3.7.1	a.	Main Control Room Atmospheric Control System Radiation Monitoring Subsystem	S	Q	R 24 months LE.1	L.1 1,2,3,5 and *

add proposed 3rd and 4th Applicability

A.1

NOTES

2nd Applicability (* When irradiated fuel is being handled in the secondary containment.

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ITS 3.3.7.1

ITS 3.3.7.1

SURVEILLANCE REQUIREMENTS (Continued)

(see ITS 3.7.4)

b. Perform required control room and auxiliary electric equipment room filter testing in accordance with, and at the frequency specified by, the Ventilation Filter Testing Program.

24 LD.1

c. Deleted.

SR 3.3.7.1.4 d. At least once per 18 months by:

1. Deleted.

Applicability change L.1

A.1

ITS 3.3.7.1

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.3.7.1.4

A.6

2. ~~Verifying that on each of the below pressurization mode actuation test signals the emergency train automatically switches to the pressurization mode of operation.~~ Manually initiate flow through the control room and auxiliary electric equipment room recirculation filters line and then verify that the control room and auxiliary electric equipment rooms are maintained at a positive pressure of greater than or equal to 1/8 inch W.G. relative to the adjacent areas during emergency train operation at a flow rate less than or equal to 4000 cfm:

   a) Outside air smoke detection, and (see ITS 3.7.4)

   b) Air intake radiation monitors.

3. Deleted.

e. Deleted.

f. Deleted.

A.1

ITS 3.3.7.1

3/4.3.7 MONITORING INSTRUMENTATION

~~RADIATION MONITORING~~ INSTRUMENTATION Control Room Area Filtration (CRAF) A.2

LIMITING CONDITION FOR OPERATION

CRAF System

LCO 3.3.7.1 3.3.7.1 The ~~radiation monitoring~~ instrumentation channels shown in Table 3.3.7.1-1 shall be OPERABLE* ~~with their alarm/trip setpoints within the specified limits~~. A.2

APPLICABILITY: As shown in Table 3.3.7.1-1.

ACTION: add proposed ACTIONS NOTE A.3

ACTION A a. With a radiation monitoring instrumentation channel ~~alarm/trip setpoint~~ exceeding the value shown in Table 3.3.7.1-1, ~~adjust the setpoint to within the limit within 4 hours or~~ declare the channel inoperable. M.1

CRAF System A.2

ACTION A b. With one or more ~~radiation monitoring~~ channels inoperable, take the ACTION required by Table 3.3.7.1-1.

~~c. The provisions of Specification 3.0.3 are not applicable.~~ A.4

CRAF System A.2

SURVEILLANCE REQUIREMENTS

4.3.7.1 Each of the above required ~~radiation monitoring~~ instrumentation channels shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations for the conditions and at the frequencies shown in Table 4.3.7.1-1.

SR 3.3.7.1.1
SR 3.3.7.1.2
SR 3.3.7.1.3

A.5

~~*The normal or emergency power source may be inoperable in OPERATIONAL CONDITION 4 or 5 or when defueled.~~

A.2

TABLE 3.3.7.1-1

RADIATION MONITORING INSTRUMENTATION

Allowable Value

SR 3.3.7.1.3

LA.1

L(O 3.3.7.1

INSTRUMENTATION	MINIMUM CHANNELS OPERABLE	APPLICABLE CONDITIONS	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
a. Main Control Room Atmospheric Control System Radiation Monitoring Subsystem	2 per trip system/train (intake)**	1,2,3,5 and *	3.5 mR/hr	0.1 to 10,000 mR/hr	70 A, B

L.1 LF.1

add proposed 3rd and 4th Applicability

A.1

TABLE NOTATIONS

2nd Applicability *When irradiated fuel is being handled in the secondary containment.

Note to Surveillance Requirements **A channel may be placed in an inoperable status for up to 6 hours for required surveillance testing without placing the Trip System in the tripped condition, ~~provided at least one other operable channel in the same Trip System is monitoring that Trip Function~~.

M.2

place in trip in 6 hours L.2 ACTION STATEMENT

add proposed Required Action A.1

ACTION A

ACTION 70 -

a. With the number of OPERABLE channels per trip system one less than the minimum required, place the inoperable channel in the tripped condition within one hour. 6 5 LB.1

ACTION B

L.2

b. With both channels in a trip system inoperable, ~~declare the trip system inoperable~~. Restore the inoperable trip system to OPERABLE status within 7 days, or, within the next 6 hours, initiate and maintain operation of the control room emergency filtration system in the pressurization mode of operation. 1 L.2

c. Otherwise, initiate and maintain operation of the control room emergency filtration system in the pressurization mode of operation within 1 hour.

add proposed Required Action B.2

L.2

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ITS 3.3.7.1

TABLE 4.3.7.1-1

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

	INSTRUMENTATION	SR 3.3.7.1.1 CHANNEL CHECK	SR 3.3.7.1.2 CHANNEL FUNCTIONAL TEST	3.3.7.1.3 CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
LCO 3.3.7.1	a. Main Control Room Atmospheric Control System Radiation Monitoring Subsystem	S	Q	R 24 months LE.1	L.1 1,2,3 5 and * add proposed 3rd and 4th Applicability L.1

NOTES

2nd Applicability (*When irradiated fuel is being handled in the secondary containment.

A1

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ITS 3.3.7.1

SURVEILLANCE REQUIREMENTS (Continued)

b. Perform required control room and auxiliary electric equipment room filter testing in accordance with, and at the frequency specified by, the Ventilation Filter Testing Program.

<see ITS 3.7.4>

c. Deleted.

LD.1

SR 3.3.7.1.4 d. At least once per 18 24 months by:

1. Deleted.

Applicability change L.1

A.1

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.3.7.1.4

2. Verifying that on each of the below pressurization mode actuation test signals, the emergency train automatically switches to the pressurization mode of operation. Manually initiate flow through the control room and auxiliary electric equipment room recirculation filters and then verify that the control room and auxiliary electric equipment rooms are maintained at a positive pressure of greater than or equal to 1/8 inch W.G. relative to the adjacent areas during emergency train operation at a flow rate less than or equal to 4000 cfm:

A.6

a) Outside air smoke detection, and

⟨See ITS 3.7.4⟩

b) Air intake radiation monitors.

3. Deleted.

e. Deleted.

f. Deleted.

ADMINISTRATIVE

A.1 In the conversion of the LaSalle 1 and 2 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1434, Rev. 1 (i.e., the Improved Standard Technical Specifications (ISTS)).

A.2 CTS 3/4.3.7.1 specifies requirements on radiation monitoring instrumentation. The only instrumentation listed is the Main Control Room Atmospheric Control System Radiation Monitoring subsystem. In ITS 3.3.7.1, this instrumentation is known as the Control Room Area Filtration (CRAF) System Instrumentation. Therefore, the title, the LCO statement, Actions, Surveillance Requirement, and Tables have been modified to require this Function. In addition, the alarm/trip setpoint column in CTS Table 3.3.7.1-1 has been changed to an Allowable Value in ITS SR 3.3.7.1.3. The table has been deleted since there is only one Function associated with the CRAF System. Since this change is a presentation preference only (the value in the alarm/trip setpoint column for the control room air intake radiation monitor is the Allowable Value), it is considered administrative.

A.3 This proposed change to the CTS 3.3.7.1 Actions provides more explicit instructions for proper application of the Actions for Technical Specification compliance. In conjunction with the proposed Specification 1.3, "Completion Times," the ITS 3.3.7.1 ACTIONS Note ("Separate Condition entry is allowed for each....") and the wording for ACTION A ("One or more channels...") provide direction consistent with the intent of the existing Action for an inoperable CRAF System instrumentation channel. It is intended that each inoperable channel is allowed a certain time to complete the Required Actions. Since this change only provides more explicit direction of the current interpretation of the existing specifications, this change is considered administrative.

A.4 The allowance in CTS 3.3.7.1 Action c, which states that the provisions of Specification 3.0.3 are not applicable, has been deleted. The proposed Conditions and Required Actions of ITS 3.3.7.1 will adequately cover all potential conditions for inoperable equipment in the system and as such, the statement that Specification 3.0.3 is not applicable is unnecessary. This is considered to be a change in presentation only and therefore an administrative change.

ADMINISTRATIVE (continued)

A.5 The information in the "*" footnote of CTS 3.3.7.1 is now provided by the definition of OPERABLE-OPERABILITY located in ITS Section 1.1 "Definitions" and therefore, it is not necessary to repeat it here. As such, this footnote is deleted as an administrative change.

A.6 The technical content of CTS 4.7.2.d.2 was divided into two Surveillances. The majority of this Surveillance is performed as proposed SR 3.3.7.1.4, a LOGIC SYSTEM FUNCTIONAL TEST (LSFT). The LSFT verifies that each signal functions properly. The actual system functional test portion is performed in the ITS 3.7.4 Surveillance Requirements. This will ensure that the entire system is tested with proper overlap.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 The current allowance in CTS 3.3.7.1 ACTION a that provides 4 hours to adjust an Allowable Value (changed from Alarm/Trip Setpoint as described in Discussion of Change A.2 above) to within its limit prior to declaring the channel inoperable has been deleted. When the setpoint is not within its Allowable Value, the channel will be declared inoperable immediately. This will ensure the proper actions for an inoperable channel are taken, and is an additional restriction on plant operation.

M.2 CTS Table 3.3.7-1 Note "**", which allows a delay in entering the associated Action statement during performance of Surveillances, has been clarified to provide direct indication of the intent of the current wording. The current words "provided at least one other operable channel in the same Trip System is monitoring that Trip Function" are intended to ensure that the trip capability of the Function is maintained. However, it does not provide this assurance for this logic system design. The trip system is two-out-of-two, thus when one channel is inoperable, the trip system is not capable of starting the associated CRAF subsystem. However, the current note allows this to occur to both trip systems simultaneously. Therefore, the note has been modified in ITS 3.3.7.1 (Note to the Surveillance Requirements) to state "provided the associated Function maintains CRAF subsystem initiation capability." This is the intent of the current note and is based on previously conducted reliability analyses (GENE-770-06-1-A, December 1992). The logic design of the instrumentation is bounded by that analyzed in the reliability analysis and the conclusions of the analysis are applicable to the LaSalle 1 and 2 design. The results of the NRC review of this generic reliability analysis as it relates to LaSalle 1 and 2 is

TECHNICAL CHANGES - MORE RESTRICTIVE

M.2 (cont'd) documented in the NRC Safety Evaluation Report (SER) dated August 2, 1995. The SER concluded that the generic reliability analysis is applicable to LaSalle 1 and 2, and that LaSalle 1 and 2 meets all requirements of the NRC SER accepting the generic reliability analysis.

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

LA.1 The measurement range of the Main Control Room Atmospheric Control System Radiation Monitoring System channels in CTS Table 3.3.7.1-1 is proposed to be relocated to the UFSAR. This is a design detail that is not necessary to be included in the Technical Specifications to ensure the OPERABILITY of the CRAF System instrumentation. The OPERABILITY requirements, which include the Allowable Value, are adequately addressed in ITS 3.3.7.1 and the associated Surveillance Requirements. Therefore, the relocated details are not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the UFSAR will be controlled by the provisions of 10 CFR 50.59.

LB.1 CTS Table 3.3.7.1-1 Action 70.a requires an inoperable channel to be placed in trip within one hour, if the number of OPERABLE channels per trip system is one less than the minimum required. This time has been extended to 6 hours (ITS 3.3.7.1 Required Action A.2), provided the CRAF subsystem initiation capability in both trip systems is not lost (ITS 3.3.7.1 Required Action A.1). The 6 hours has been shown to be acceptable to permit restoration of any of any inoperable channel to OPERABLE status. However, this out of service time is only acceptable provided the associated Function is still maintaining CRAF subsystem initiation capability. The CRAF System instrumentation is considered to be maintaining subsystem initiation capability when sufficient channels are OPERABLE or in trip, such that one trip system will generate an initiation signal on a valid air intake high radiation signal. The proposed change in the CTS action to allow 6 hours (as long as isolation capability is maintained) to place a channel(s) in trip is supported by the reliability analysis of GENE-770-06-1-A, December 1992, and NEDC-31677-P-A, July 1990. The results of the NRC review of this generic reliability analysis as it relates to LaSalle 1 and 2 is documented in the NRC Safety Evaluation Report (SER) dated August 2, 1995. The SER concluded that the generic reliability analysis is acceptable to LaSalle 1 and 2 and that LaSalle 1 and 2 meets all requirements of the NRC SER accepting the generic reliability analysis.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

LD.1 The Frequency for performing the LOGIC SYSTEM FUNCTIONAL TEST portion of CTS 4.7.2.d.2 (proposed SR 3.3.7.1.4) has been extended from 18 months to 24 months. This SR ensures that CRAF System Instrumentation logic will function as designed to ensure proper response during an analyzed event. The proposed change will allow this Surveillance to extend its Surveillance Frequency from the current 18 month Surveillance Frequency (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2) to a 24 month Surveillance Frequency (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2). This proposed change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical maintenance and surveillance data have shown that these tests normally pass their Surveillances at the current Frequency. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. The CRAF System including the actuating logic is designed to be single failure proof, and therefore, is highly reliable. In addition, major deviations in the instrumentation during the operating cycle will be detected since other surveillances are performed such as the CHANNEL CHECK and CHANNEL FUNCTIONAL TEST (proposed SRs 3.3.7.1.1 and 3.3.7.1.2) at a more frequent basis.

Based on the inherent system and component reliability and the testing performed during the operating cycle, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 24-month Surveillance Frequencies, if performed at the maximum interval allowed by proposed SR 3.0.2 (30 months) do not invalidate any assumptions in the plant licensing basis.

Furthermore, as stated in the NRC Safety Evaluation Report (dated August 2, 1993) relating to extension of the Peach Bottom Atomic Power Station, Unit Numbers 2 and 3 surveillance intervals from 18 to 24 months:

"Industry reliability studies for boiling water reactors (BWRs), prepared by the BWR Owners Group (NEDC-30936P) show that the overall safety systems' reliabilities are not dominated by the reliabilities of the logic system, but by that of the mechanical components, (e.g., pumps and valves), which are consequently tested on a more frequent basis. Since the probability of a relay or contact failure is small relative to the probability of mechanical component failure, increasing the Logic System Functional Test interval represents no significant change in the overall safety system unavailability."

TECHNICAL CHANGES - LESS RESTRICTIVE

LD.1 (cont'd) Based on the above discussion, the impact, if any, of this change on system availability is minimal.

LE.1 The Frequency for performing the CHANNEL CALIBRATION of CTS 4.3.7.1 as specified in Table 4.3.7.1-1 (proposed SR 3.3.7.1.3) has been extended from 18 months to 24 months. The subject SR ensures that the CRAF control room air intake radiation monitors will function as designed during an analyzed event. The proposed change will allow these Surveillances to extend their Surveillance Frequency from the current 18 month Surveillance Frequency (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2) to a 24 month Surveillance Frequency (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2). This proposed change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Extending the SR Frequency is acceptable because the isolation initiation logic is designed to be single failure proof, and therefore, is highly reliable.

Instrumentation 1: Main Control Room Atmospheric Control System Radiation Monitor

This function is performed by General Atomics RP-1A radiation monitoring system and Tracor WESTRONICS M11E recorder. These instruments were evaluated utilizing a qualitative analysis (i.e., engineering judgment). The results of the analysis support a 24 month fuel cycle surveillance interval extension.

A review of the surveillance test history was performed to validate the above conclusion. This review of the surveillance test history demonstrates that there are no failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month surveillance frequency. In addition, the proposed 24-month Surveillance Frequencies, if performed at the maximum interval allowed by proposed SR 3.0.2 (30 months) do not invalidate any assumptions in the plant licensing basis.

LF.1 This change revises the Current Technical Specifications (CTS) Allowable Values to the Improved Technical Specifications (ITS) Allowable Values. ITS Section 3.3 reflects Allowable Values consistent with the philosophy of BWR ISTS, NUREG-1434, Rev. 1. These Allowable Values have been established

TECHNICAL CHANGES - LESS RESTRICTIVE

LF.1 (cont'd) consistent with the methods described in ComEd's Instrument Setpoint Methodology (Nuclear Engineering Standard NES-EIC-20.04, "Analysis of Instrument Channel Setpoint Error and Instrument Loop Accuracy"). For most cases, the Allowable Value determinations were calculated using plant specific operating and surveillance trend data or an allowance as provided for by the Instrument Setpoint Methodology. For all other cases, vendor documented performance specifications for drift were used. The Allowable Value verification used actual plant operating and surveillance trend information to ensure the validity of the developed Allowable Value. All changes to safety analysis limits applied in the methodologies were evaluated and confirmed as ensuring safety analysis licensing acceptance limits are maintained. All design limits applied in the methodologies were confirmed as ensuring that applicable design requirements of the associated systems and equipment are maintained. The methodologies used have been compared with the guidance of ANSI/ISA S67.04-Part I-1994 and ANSI/ISA RP67.04-Part II-1994. Plant calibration procedures will ensure that the assumptions regarding calibration accuracy, measurement and test equipment accuracy, and setting tolerance are maintained. Setpoints for each design or safety analysis limit have been established by accounting for the applicable instrument accuracy, calibration and drift uncertainties, environmental effects, power supply fluctuations, as well as uncertainties related to process and primary element measurement accuracy using the Instrument Setpoint Methodology. The Allowable Values have been established from each design or safety analysis limit by combining the errors associated with channel/instrument calibration (e.g., device accuracy, setting tolerance, and drift) with the calculated Nominal Trip Setpoint also using the Instrument Setpoint Methodology.

Additionally, each applicable channel/instrument has been evaluated and analyzed to support a fuel cycle extension to a 24 month interval. These evaluations and analyses have been performed utilizing the guidance provided in EPRI TR-103335, "Guidelines for Instrument Calibration Extension/Reduction Programs, Revision 1. The EPRI guidance was used to demonstrate that the data collected by the operating plant (from surveillance testing) has remained acceptable and reasonable with regard to the manufacturers design specifications.

Use of the previously discussed methodologies for determining Allowable Values, instrument setpoints, and analyzing channel/instrument performance ensure that the design basis and associated safety limits will not be exceeded during plant operation. These evaluations, determinations, and analyses now form a portion of the plants design bases.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

"Specific"

L.1 The Applicability of CTS 3/4.7.2 and CTS 3.3.7.1 (Tables 3.3.7.1-1 and 4.3.7.1-1) for the main control room atmospheric control system radiation monitoring subsystem (changed to Control Room Area Filtration System Instrumentation in Discussion of Change A.2) is revised from Operational Conditions 1, 2, 3, 4, and 5 (the MODE 4 applicability only applies to CTS 3/4.7.2), and when irradiated fuel is being handled in secondary containment to MODES 1, 2, and 3, during movement of irradiated fuel assemblies in secondary containment, during CORE ALTERATIONS, and during operations with the potential for draining the reactor vessel (OPDRVs) in ITS 3.3.7.1, Control Room Area Filtration (CRAF) System Instrumentation. The CRAF System is required to be OPERABLE to control operator radiation exposure during and following a design basis accident, since a design basis accident could lead to a fission product release. When the plant is in MODE 4 or 5, the probability and consequences of a design basis accident are reduced due to the temperature and pressure limitations in these MODES. However, in MODE 4 or 5, activities are conducted for which significant releases of radioactivity are postulated. Therefore, the CRAF System (and the associated supporting initiation instrumentation) is only required to be OPERABLE in MODE 4 or 5, when activities are in progress which could, if an event occurs, result is significant releases of radioactivity (during movement of irradiated fuel assemblies in secondary containment, during CORE ALTERATIONS, or during OPDRVs). This change alters the CTS 3.3.7.1 MODE 4 and 5 Applicability to only include these activities. This is considered acceptable since ITS 3.3.7.1 requires the CRAF System instrumentation to be OPERABLE when it is required to mitigate postulated events in MODE 4 or 5. The ITS 3.3.7.1 Applicability maintains and adds situations for which significant releases of radioactivity are postulated while the plant is in MODE 4 or 5. In addition, the change to the Applicability is consistent with the intent of CTS 3/4.7.2, Control Room Emergency Ventilation System ACTIONS (in MODE 4 and 5 with two subsystems inoperable, the CTS ACTIONS require suspension of those activities for which significant releases of radioactivity are postulated). This change allows operations that do not have a potential for a significant radioactive release to be performed without requiring the CRAF System (and its associated supporting initiation instrumentation) to be OPERABLE and provides additional scheduling flexibility during plant refueling outages.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

L.2 With two channels in a trip system inoperable, CTS Table 3.3.7.1-1 Action 70.b requires the trip system to be declared inoperable, and to restore the trip system within 7 days. If not restored, the CRAF System must be placed in the pressurization mode within the next 6 hours. Thus, the CTS ensures the CRAF System is in the pressurization mode within 7 days, 6 hours (total time) after two channels in a trip system are inoperable. ITS 3.3.7.1 ACTION A (6 hours to trip a channel), ITS 3.3.7.1 ACTION B (1 hour to declare the CRAF subsystem inoperable), ITS 3.7.4 ACTION A (7 days to restore an inoperable CRAF subsystem), and ITS 3.7.4 ACTION C (place CRAF subsystem in the pressurization mode immediately), provide a total time of 7 days, 7 hours before the CRAF subsystem must be in the pressurization mode. Thus, the ITS allows an additional hour for this final condition. With one channel in a trip system inoperable, CTS Table 3.3.7.1-1 Action 70.a requires the channel to be placed in trip within 1 hour (changed to 6 hours as described in Discussion of Change LB.1). If the channel is not tripped, CTS Table 3.3.7.1-1 Action 70.c would require the CRAF System to be placed in operation within 1 hour. ITS 3.3.7.1 ACTION B provides an additional allowance to declare the CRAF subsystem inoperable within 1 hour (Required Action B.2) when a channel is not tripped (as required by CTS Table 3.3.7.1-1 Action 70.a). Once declared inoperable, ITS 3.7.4 ACTION A will allow a 7 day restoration time for the CRAF subsystem. If not restored, ITS 3.7.4 ACTION C will then require the CRAF subsystem to be placed in the pressurization mode immediately. Thus, the ITS allows an additional 7 days for this final condition. The alternative action to declare the associated equipment inoperable and take the additional 1 hour or 7 days, as applicable, is acceptable since the associated CRAF System Specification (ITS 3.7.4) will provide appropriate actions that are identical to actions taken when a CRAF subsystem is inoperable for reasons other than inoperable instrumentation.

RELOCATED SPECIFICATIONS

None

 A.1 ITS 3.3.8.1

3/4.3.3 EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION A.2

LIMITING CONDITION FOR OPERATION

LCO 3.3.8.1 3.3.3 The emergency core cooling system (ECCS) actuation LOP instrumentation channels shown in Table 3.3.3-1 shall be OPERABLE ~~with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.3-2~~ LA.1 ~~and with EMERGENCY CORE COOLING SYSTEM RESPONSE TIME as shown in Table 3.3.3-3.~~ A.3

APPLICABILITY: As shown in Table 3.3.3-1. add proposed ACTIONS NOTE A.4

ACTION:

ACTION A

a. With an ~~ECCS actuation~~ LOP instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.3-2, declare the channel inoperable until the channel is restored to OPERABLE status ~~with its trip setpoint adjusted consistent with the Trip Setpoint value.~~ A.2 LA.1

b. With one or more ~~ECCS actuation~~ LOP instrumentation channels inoperable, take the ACTION required by Table 3.3.3-1. A.2

< SEE ITS 3.3.5.1 >

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

1. 7 days, provided that the HPCS and RCIC systems are OPERABLE.

2. 72 hours.

Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and reduce reactor steam dome pressure to less than or equal to 122 psig within the following 24 hours.

SURVEILLANCE REQUIREMENTS

Note 1 to Surveillances 4.3.3.1 Each ~~ECCS actuation~~ LOP instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations for the OPERATIONAL CONDITIONS and at the frequencies shown in Table 4.3.3.1-1. A.2 <see ITS 3.3.5.1>

SR 3.3.8.1.3 4.3.3.2 LOGIC SYSTEM FUNCTIONAL TESTS and simulated automatic operation of all channels shall be performed at least once per ~~18~~ 24 months. LA.2 LD.1

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

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LOP A.2 Table 3.3.8.1-1

TABLE 3.3.3-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

FUNCTION TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION[a]	APPLICABLE OPERATIONAL CONDITION	ACTION
C. DIVISION 3 TRIP SYSTEM			
1. HPCS SYSTEM			
a. Reactor Vessel Water Level - Low, Low, Level 2	4[b]	1, 2, 3, 4*, 5*	35
b. Drywell Pressure - High	4[b]	1, 2, 3	35
c. Reactor Vessel Water Level-High, Level 8	2[c]	1, 2, 3, 4*, 5*	32
d. Deleted			
e. Deleted			
f. Pump Discharge Pressure-High (Bypass)	1	1, 2, 3, 4*, 5*	31
g. HPCS System Flow Rate-Low (Permissive)	1	1, 2, 3, 4*, 5*	31
h. Manual Initiation	1/division	1, 2, 3, 4*, 5*	34

< SEE ITS 3.3.5.1 >

D. LOSS OF POWER

LA.3

	TOTAL NO. OF INSTRUMENTS	INSTRUMENTS TO TRIP	MINIMUM OPERABLE INSTRUMENTS[d]	APPLICABLE OPERATIONAL CONDITIONS	ACTION
1.a, 2.a, 2.b — 1. 4.16 kv Emergency Bus Undervoltage (Loss of Voltage)	~~2/bus~~	~~2/bus~~	2/bus	1, 2, 3, 4**, 5**	37 A
1.b, 1.c, 1.d, 2.c, 2.d, 2.e — 2. 4.16 kv Emergency Bus Undervoltage (Degraded Voltage)	~~2/bus~~	~~2/bus~~	2/bus	1, 2, 3, 4**, 5**	37 and B

M.1

< SEE ITS 3.3.5.1 >

(a) A channel instrument may be placed in an inoperable status for up to 6 hours during periods of required surveillance without placing the trip system/channel/instrument in the tripped condition provided at least one other OPERABLE channel/instrument in the same trip system is monitoring that parameter.

(b) Also actuates the associated division diesel generator.

(c) Provides signal to close HPCS pump discharge valve only on 2-out-of-2 logic.

NOTE 2 TO SURVEILLANCES (d) A channel/instrument may be placed in an inoperable status for up to 2 hours during periods of required surveillance without placing the trip system/channel/instrument in the tripped condition ~~provided at least one other OPERABLE channel/instrument in the same trip system is monitoring that parameter.~~ provided the associated Function maintains LOP initiation capability

M.2

<SEE ITS 3.3.5.1> * Applicable when the system is required to be OPERABLE per Specification 3.5.2 or 3.5.3.

Applicability ** Required when ESF equipment is required to be OPERABLE.

<SEE ITS 3.3.5.1> # Not required to be OPERABLE when reactor steam dome pressure is ≤ 122 psig.

A.1

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ITS 3.3.8.1

A.2 LOP ~~EMERGENCY CORE COOLING SYSTEM ACTUATION~~ INSTRUMENTATION

ACTION

(SEE ITS 3.3.5.1)

ACTION 30 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement:

a. With one channel inoperable, place the inoperable channel in the tripped condition within 24 hours or declare the associated system inoperable.

b. With more than one channel inoperable, declare the associated system inoperable.

ACTION 31 - With the number of OPERABLE channels less than required by the Minimum OPERABLE channels per Trip Function requirement, place the inoperable channel in the tripped condition within 24 hours; restore the inoperable channel to OPERABLE status within 7 days or declare the associated system inoperable.

ACTION 32 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, declare the associated ADS trip system or ECCS inoperable within 24 hours.

ACTION 33 - With the number of OPERABLE channels less than the Minimum OPERABLE Channels per Trip Function requirement, place the inoperable channel in the tripped condition within 24 hours.

ACTION 34 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, restore the inoperable channel to OPERABLE status within 24 hours or declare the associated ADS trip system or ECCS inoperable.

ACTION 35 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement

a. For one trip system, place that trip system in the tripped condition within 24 hours or declare the HPCS system inoperable.

b. For both trip systems, declare the HPCS system inoperable.

ACTION 36 - Deleted

ACTION 37 - With the number of OPERABLE instruments less than the Minimum Operable Instruments, place the inoperable instrument(s) in the tripped condition within 1 hour or declare the associated emergency diesel generator inoperable ~~and take the ACTION required by Specification 3.8.1.1 or 3.8.1.2 as appropriate.~~

ACTION A,

ACTION B

A.5

A.2

LOP

Table 3.3.8.1-1

TABLE 3.3.3-2 (Continued)

~~EMERGENCY CORE COOLING SYSTEM ACTUATION~~ INSTRUMENTATION SETPOINTS

FUNCTION TRIP FUNCTION	~~TRIP SETPOINT~~ LA.2	ALLOWABLE VALUE LF.1
C. DIVISION 3 TRIP SYSTEM		
1. HPCS SYSTEM		
<SEE ITS 3.3.5.1> a. Reactor Vessel Water Level - Low Low, Level 2	≥ - 50 inches*	≥ - 57 inches*
b. Drywell Pressure - High	≤ 1.69 psig	≤ 1.89 psig
c. Reactor Vessel Water Level - High, Level 8	≤ 55.5 inches*	≤ 56 inches*
d. Deleted		
e. Deleted		
f. Pump Discharge Pressure - High	≥ 120 psig	≥ 110 psig
g. HPCS System Flow Rate - Low	≥ 1000 gpm	≥ 900 gpm
h. Manual Intiation	NA	NA
D. LOSS OF POWER		
1. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage)#		
a. 4.16 kV Buses	LA.2	LF.1
1.a 1) Divisions 1 and 2	~~2625 ± 131 volts with ≤ 10 seconds time delay~~	2625 ± 262 volts with ≤ 11 seconds time delay
	~~2496 ± 125 volts with ≥ 4 seconds time delay~~	2496 ± 250 volts with ≥ 3 seconds time delay
2.a and 2.b 2) Division 3	~~2870 ± 143 volts with ≤ 10 seconds time delay~~	2870 ± 287 volts with ≥2 seconds time delay and ≤ 11 seconds time delay M.3

A.1

<SEE ITS 3.3.5.1>

*See Bases Figure B 3/4 3-1.

LA.3

~~#These are inverse time delay voltage relays or instantaneous voltage relays with a time delay. The voltages shown are the maximum that will not result in a trip. Lower voltage conditions will result in decreased trip times.~~

A.2

LOP

Table 3.3.8.1-1

TABLE 3.3.3-2 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION SETPOINTS

Function TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
2. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)		
a. 4.16 kV Buses		
1) Divisions 1, 2 and 3	~~≥3863 and ≤3877 volts with 10 ± 1 seconds time delay with LOCA signal or 5 ± 0.5 minutes time delay without LOCA signal~~	≥3814 and ≤3900 volts with 10 ± 1 seconds time delay with LOCA signal or 5 ± 0.5 minutes time delay without LOCA signal

1.b, 1.c, 1.d,
2.c, 2.d, 2.e

LA.2

LF.1

A.1

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ITS 3.3.8.1

A.1

TABLE 3.3.3-3

EMERGENCY CORE COOLING SYSTEM RESPONSE TIMES

<SEE ITS 3.3.5.1>

ECCS	RESPONSE TIME (Seconds)
1. LOW PRESSURE CORE SPRAY SYSTEM	≤ 60*, #
2. LOW PRESSURE COOLANT INJECTION MODE OF RHR SYSTEM (Pumps A, B, and C)	≤ 60*, #
3. AUTOMATIC DEPRESSURIZATION SYSTEM	NA
4. HIGH PRESSURE CORE SPRAY SYSTEM	≤ 41#
~~5. LOSS OF POWER~~	~~NA~~

A.3

<SEE ITS 3.3.5.1>

*Injection valves shall be fully OPEN within 40 seconds after receipt of the reactor vessel pressure and ECCS Injection Line Pressure Interlock signal concurrently with power source availability and receipt of an accident initiation signal.
#ECCS actuation instrumentation is eliminated from response time testing.

LOP A.2

Table 3.3.8.1-1

TABLE ~~4.3.3.1-1~~ (Continued)

~~EMERGENCY CORE COOLING SYSTEM ACTUATION~~ INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Function TRIP FUNCTION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	SR 3.3.8.1.1 SR 3.3.8.1.2 CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
C. DIVISION 3 TRIP SYSTEM				
1. HPCS SYSTEM				
a. Reactor Vessel Water Level - Low Low, Level 2	S	Q	R	1, 2, 3, 4*, 5*
b. Drywell Pressure-High	NA	Q	Q	1, 2, 3
c. Reactor Vessel Water Level-High Level 8	S	Q	R	1, 2, 3, 4*, 5*
d. Deleted				
e. Deleted				
f. Pump Discharge Pressure-High	NA	Q	Q	1, 2, 3, 4*, 5*
g. HPCS System Flow Rate-Low	NA	Q	Q	1, 2, 3, 4*, 5*
h. Manual Initiation	NA	R	NA	1, 2, 3, 4*, 5*
D. LOSS OF POWER				
1.a, 2.a, 2.b 1. 4.16 kV Emergency Bus Under-voltage (Loss of Voltage)	NA	NA	R 24 months	1, 2, 3, 4**, 5**
1.b, 1.c, 1.d, 2.c, 2.d, 2.e 2. 4.16 kV Emergency Bus Under-voltage (Degraded Voltage)	NA	NA	R 24 months	1, 2, 3, 4**, 5**

<SEE ITS 3.3.5.1>

L.D.1 L.E.1 M.1 A.1

<SEE ITS 3.3.5.1 Applicability>

\# Not required to be OPERABLE when reactor steam dome pressure is less than or equal to 122 psig.
* When the system is required to be OPERABLE after being manually realigned, as applicable, per Specification 3.5.2.
** Required when ESF equipment is required to be OPERABLE.

A.1

ITS 3.3.8.1

INSTRUMENTATION

LOP

3/4.3.3 EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

A.2

LOP

LA.1

LCO 3.3.8.1 3.3.3 The emergency core cooling system (ECCS) actuation instrumentation channels shown in Table 3.3.3-1 shall be OPERABLE ~~with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.3-2 and with EMERGENCY CORE COOLING SYSTEM RESPONSE TIME as shown in Table 3.3.3-3.~~ A.3

APPLICABILITY: As shown in Table 3.3.3-1. See proposed Actions Note A.4

ACTION: LOP A.2

ACTION A

a. With an ECCS actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.3-2, declare the channel inoperable until the channel is restored to OPERABLE status ~~with its trip setpoint adjusted consistent with the Trip Setpoint value.~~ LA.1

b. With one or more ECCS actuation instrumentation channels inoperable, take the ACTION required by Table 3.3.3-1. LOP A.2

<SEE ITS 3.3.5.1>

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

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

Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and reduce reactor steam dome pressure to less than or equal to 122 psig within the following 24 hours.

SURVEILLANCE REQUIREMENTS

A.2

LOP

Note 1 to Surveillances 4.3.3.1 Each ECCS actuation instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations for the OPERATIONAL CONDITIONS and at the frequencies shown in Table 4.3.3.1-1. <See ITS 3.3.5.1>

LA.2

SR 3.3.8.1.3 4.3.3.2 LOGIC SYSTEM FUNCTIONAL TESTS and simulated automatic operation of all channels shall be performed at least once per ~~18~~ 24 months. LD.1

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

A.3

LOP A.2

Table 3.3.8.1-1

TABLE 3.3.3-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

FUNCTION

TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION (a)	APPLICABLE OPERATIONAL CONDITIONS	ACTION
C. DIVISION 3 TRIP SYSTEM			
1. HPCS SYSTEM			
a. Reactor Vessel Water Level - Low, Low, Level 2	4 (b)	1, 2, 3, 4*, 5*	35
b. Drywell Pressure - High	4 (b)	1, 2, 3	35
c. Reactor Vessel Water Level-High, Level 8	2 (c)	1, 2, 3, 4*, 5*	32
d. Deleted			
e. Deleted			
f. Pump Discharge Pressure-High (Bypass)	1	1, 2, 3, 4*, 5*	31
g. HPCS System Flow Rate-Low (Permissive)	1	1, 2, 3, 4*, 5*	31
h. Manual Initiation	1/division	1, 2, 3, 4*, 5*	34

<SEE ITS 3.3.5.1>

D. LOSS OF POWER

LA.3

	TOTAL NO. OF INSTRUMENTS	INSTRUMENTS TO TRIP	MINIMUM OPERABLE INSTRUMENTS (d)	APPLICABLE OPERATIONAL CONDITIONS	ACTION
1.a, 2.a, 2.b — 1. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage)	2/bus	2/bus	2/bus	1, 2, 3, 4**, 5**	37
1.b, 1.c, 1.d, 2.c, 2.d, 2.e — 2. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)	2/bus	2/bus	2/bus	1, 2, 3, 4**, 5**	37

A and B

M.1

TABLE NOTATION

<SEE ITS 3.3.5.1>

(a) A channel/instrument may be placed in an inoperable status for up to 6 hours during periods of required surveillance without placing the trip system/channel/instrument in the tripped condition provided at least one other OPERABLE channel/instrument in the same trip system is monitoring that parameter.

(b) Also actuates the associated division diesel generator.

(c) Provides signal to close HPCS pump discharge valve only on 2-out-of-2 logic.

Note 2 to Surveillances

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

<SEE ITS 3.3.5.1> APPLICABILITY

* Applicable when the system is required to be OPERABLE per Specification 3.5.2 or 3.5.3.

** Required when ESF equipment is required to be OPERABLE.

<SEE ITS 3.3.5.1>

\# Not required to be OPERABLE when reactor steam dome pressure is ≤ 122 psig.

M.2

Provided the associated Function maintains LOP initiation capability

ITS 3.3.8.1 A.1

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A.2 LOP A.1 ITS 3.3.8.1

TABLE 3.3.3-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

ACTION

ACTION 30 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement:

a. With one channel inoperable, place the inoperable channel in the tripped condition within 24 hours or declare the associated system inoperable.

b. With more than one channel inoperable, declare the associated system inoperable.

ACTION 31 - With the number of OPERABLE channels less than required by the Minimum OPERABLE channels per Trip Function requirement, place the inoperable channel in the tripped condition within 24 hours; restore the inoperable channel to OPERABLE status within 7 days or declare the associated system inoperable.

SEE ITS 3.3.5.1

ACTION 32 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, declare the associated ADS trip system or ECCS inoperable within 24 hours.

ACTION 33 - With the number of OPERABLE channels less than the Minimum OPERABLE Channels per Trip Function requirement, place the inoperable channel in the tripped condition within 24 hours.

ACTION 34 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, restore the inoperable channel to OPERABLE status within 24 hours or declare the associated ADS trip system or ECCS inoperable.

ACTION 35 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement

a. For one trip system, place that trip system in the tripped condition within 24 hours or declare the HPCS system inoperable.

b. For both trip systems, declare the HPCS system inoperable.

ACTION 36 - Deleted

ACTION 37 - With the number of OPERABLE instruments less than the Minimum Operable Instruments, place the inoperable instrument(s) in the tripped condition within 1 hour or declare the associated emergency diesel generator inoperable ~~and take the ACTION required by Specification 3.8.1.1 or 3.8.1.2 as appropriate~~.

ACTION A

ACTION B

A.5

LOP A.2

Table 3.3.8.1-1

TABLE 3.3.3-2 (Continued)

~~EMERGENCY CORE COOLING SYSTEM ACTUATION~~ INSTRUMENTATION SETPOINTS

FUNCTION TRIP FUNCTION	TRIP SETPOINT LA.2	ALLOWABLE VALUE LF.1
C. DIVISION 3 TRIP SYSTEM		
1. HPCS SYSTEM		
a. Reactor Vessel Water Level - Low Low, Level 2	>- 50 inches*	>- 57 inches*
b. Drywell Pressure - High	≤ 1.69 psig	≤ 1.89 psig
c. Reactor Vessel Water Level - High, Level 8	≤ 55.5 inches*	≤ 56 inches*
d. Deleted		
e. Deleted		
f. Pump Discharge Pressure - High	> 120 psig	> 110 psig
g. HPCS System Flow Rate - Low	> 1000 gpm	> 900 gpm
h. Manual Intiation	N.A.	N.A.
D. LOSS OF POWER		
1. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage)#		
a. 4.16 kV Buses		
1.a 1) Divisions 1 and 2	~~2625 ± 131 volts with ≤ 10 second time delay~~ ~~2496 ± 125 volts with ≥ 4 second time delay~~	2625 ± 262 volts with ≤ 11 second time delay 2496 ± 250 volts with ≥ 3 second time delay
2.a and 2.b 2) Division 3	~~2870 ± 143 volts with ≤ 10 second time delay~~	2870 ± 287 volts with ≥ 2 seconds time delay and ≤ 11 second time delay M.3

<SEE ITS 3.3.5.1>

A.1

TABLE NOTATIONS

<SEE ITS 3.3.5.1>

*See Bases Figure B 3/4 3-1.

LA.3

~~#These are inverse time delay voltage relays or instantaneous voltage relays with a time delay. The voltages shown are the maximum that will not result in a trip. Lower voltage conditions will result in decreased trip times.~~

N.A. Not Applicable

<SEE ITS 3.3.5.1>

A.2

LOP

Table 3.3.8.1-1

~~TABLE 3.3.3-2~~ (Continued)

~~EMERGENCY CORE COOLING SYSTEM ACTUATION~~ INSTRUMENTATION SETPOINTS

Function TRIP FUNCTION	~~TRIP SETPOINT~~	ALLOWABLE VALUE
D. LOSS OF POWER (Continued)		
2. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)		
a. 4.16 kV Buses		
1) Divisions 1, 2 and 3 1.b, 1.c, 1.d, 2.c, 2.d, 2.e	~~≥3863 and ≤3877 volts with 10 ± 1 seconds time delay with LOCA signal or 5 ± 0.5 minutes time delay without LOCA signal~~	≥3814 and ≤3900 volts with 10 ± 1 seconds time delay with LOCA signal or 5 ± 0.5 minutes time delay without LOCA signal

LA.2

LF.1

A.1

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ITS 3.3.8.1

<SEE ITS 3.3.5.1>

TABLE 3.3.3-3 A.1 ITS 3.3.8.1

EMERGENCY CORE COOLING SYSTEM RESPONSE TIMES

ECCS	RESPONSE TIME (Seconds)
1. LOW PRESSURE CORE SPRAY SYSTEM	≤ 60*, #
2. LOW PRESSURE COOLANT INJECTION MODE OF RHR SYSTEM (Pumps A, B, and C)	≤ 60*, #
3. AUTOMATIC DEPRESSURIZATION SYSTEM	NA
4. HIGH PRESSURE CORE SPRAY SYSTEM	≤ 41#
~~5. LOSS OF POWER~~	~~NA~~

A.3

<SEE ITS 3.3.5.1>

*Injection valves shall be fully OPEN within 40 seconds after receipt of the reactor vessel pressure and ECCS Injection Line Pressure Interlock signal concurrently with power source availability and receipt of an accident initiation signal.
#ECCS actuation instrumentation is eliminated from response time testing.

LOP A.2

Table 3.3.8.1-1

TABLE 4.3.3.1-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTION / TRIP FUNCTION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	SR 3.3.8.1.1 / SR 3.3.8.1.2 CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
<SEE ITS 3.3.5.1>				
C. DIVISION 3 TRIP SYSTEM				
1. HPCS SYSTEM				
a. Reactor Vessel Water Level - Low Low, Level 2	S	Q	R	1, 2, 3, 4*, 5*
b. Drywell Pressure-High	NA	Q	Q	1, 2, 3
c. Reactor Vessel Water Level-High Level 8	S	Q	R	1, 2, 3, 4*, 5*
d. Deleted				
e. Deleted				
f. Pump Discharge Pressure-High	NA	Q	Q	1, 2, 3, 4*, 5*
g. HPCS System Flow Rate-Low	NA	Q	Q	1, 2, 3, 4*, 5*
h. Manual Initiation	NA	R	NA	1, 2, 3, 4*, 5*
D. LOSS OF POWER				
1.a, 2.a, 2.b — 1. 4.16 kV Emergency Bus Under-voltage (Loss of Voltage)	NA	NA	R 24 months	1, 2, 3, 4**, 5**
1.b, 1.c, 1.d, 2.c, 2.d, 2.e — 2. 4.16 kV Emergency Bus Under-voltage (Degraded Voltage)	NA	NA	R 24 months	1, 2, 3, 4**, 5**

LD.1 LE.1 M.1 A.1

<SEE ITS 3.3.5.1>

TABLE NOTATIONS

*Not required to be OPERABLE when reactor steam dome pressure is less than or equal to 122 psig.
*When the system is required to be OPERABLE after being manually realigned, as applicable, per Specification 3.5.2.

**Required when ESF equipment is required to be OPERABLE.

Applicability

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ITS 3.3.8.1

DISCUSSION OF CHANGES
ITS: 3.3.8.1 - LOSS OF POWER INSTRUMENTATION

ADMINISTRATIVE

A.1 In the conversion of the LaSalle 1 and 2 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1434, Rev. 1 (i.e., the Improved Standard Technical Specifications (ISTS)).

A.2 A new LCO, ITS 3.3.8.1, has been written specifically for the Loss of Power (LOP) Instrumentation. The LOP Function from the current ECCS instrumentation Specification (CTS 3/4.3.3) is incorporated into this LCO. ITS 3.3.8.1 requires the instruments listed in ITS Table 3.3.8.1-1 to be OPERABLE, and the Table has the appropriate Functions from CTS Table 3.3.3-1 listed. Since this is an organizational change, it is considered to be administrative.

A.3 CTS 3.3.3 requires the ECCS Response Time of each ECCS System to be met. CTS 4.3.3.3 requires the ECCS Response Time of each ECCS System to be demonstrated. Since there is no required Loss of Power response time (in CTS Table 3.3.3-3, the response time was listed as "NA"), the requirements regarding ECCS Response Time related to the LOP Functions were deleted to eliminate unnecessary requirements. As such, this deletion is considered administrative.

A.4 This proposed change to the CTS 3.3.3 Actions provides more explicit instructions for proper application of the Actions for Technical Specification compliance. In conjunction with the proposed Specification 1.3 - "Completion Times," the ITS 3.3.8.1 ACTIONS Note ("Separate Condition entry is allowed for each....") provides direction consistent with the intent of the existing Action for an inoperable LOP instrumentation channel. It is intended that each inoperable channel is allowed a certain time to complete the Required Actions. Since this change only provides more explicit direction of the current interpretation of the existing specifications, this change is considered administrative.

A.5 CTS Table 3.3.3-1 ACTION 37 requires the DG to be declared inoperable and to take the ACTION required by Specification 3.8.1.1 or 3.8.1.2, as appropriate, when the inoperable LOP instrumentation channel is not tripped within 1 hour. The format of the ITS does not include providing "cross references." ITS 3.8.1 and ITS 3.8.2 adequately prescribe the Required Actions

ADMINISTRATIVE

A.5 (cont'd) for an inoperable ECCS without such references. Therefore, the existing reference in CTS Table 3.3.3-1 ACTION 37 to "take the ACTION required by Specification 3.8.1.1 or 3.8.1.2" serves no functional purpose, and its removal is purely an administrative difference in presentation.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 CTS Tables 3.3.3-1 and 4.3.3.1-1 require the LOP instruments to be OPERABLE during MODES 4 and 5 only when the associated ESF equipment is required to be OPERABLE (as stated in footnote ** to Table 3.3.3-1 and Table 4.3.3.1-1). The Applicability is being changed to be when the associated DG is required to be OPERABLE by LCO 3.8.2, "AC Sources — Shutdown," which in ITS 3.3.8.1 requires the LOP instrumentation to be OPERABLE not only during MODES 4 and 5, but also during movement of irradiated fuel assemblies in the secondary containment (which could be when the unit is defueled). This will ensure the DGs can be properly actuated at all times when they are required to be OPERABLE and is an additional restriction on plant operation.

M.2 CTS Table 3.3.3-1 footnote (d) allows a delay in entering the associated Action statement during performance of Surveillances. This Note has been clarified to provide direct indication of the intent of the current wording. The current words "provide at least one other OPERABLE channel/instrument in the same trip system is monitoring that parameter" are intended to ensure that the trip capability of the Function is maintained. However, it does not provide this assurance for this logic system design (which is a two-out-of-two design). Therefore, ITS 3.3.8.1 Surveillance Requirements Note 2 will only allow the 2 hour delay from entering into the associated Conditions and Required Actions for a channel placed in an inoperable status solely for performance of required Surveillances provided the associated Function maintains initiation capability for two DGs and associated 4.16 kV emergency buses. This is a more restrictive change and will ensure accident analysis assumptions are met when the Note is being used.

M.3 CTS Table 3.3.3-2 establishes an Allowable Value upper limit of ≤ 11 seconds for the Division 3, 4.16 kV emergency bus undervoltage — loss of voltage time delay function. The CTS does not specify a lower limit Allowable Value for this function. The upper limit Allowable Value provides assurance that power is available to required equipment; however, it will not ensure sufficient time to allow the offsite power supply to recover to normal voltages. Therefore, a lower

TECHNICAL CHANGES - MORE RESTRICTIVE

M.3 (cont'd) limit Allowable Value of ≥ 2.0 seconds has been added to ITS Table 3.3.8.1-1 for the Division 3, 4.16 kV emergency bus undervoltage — loss of voltage time delay function. This change is consistent with the BWR/6 ISTS NUREG-1434, and is an additional restriction on plant operation.

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

LA.1 CTS 3.3.3 requires the Trip Setpoints to be set consistent with the values shown in the Trip Setpoint column of Table 3.3.3-2. CTS 3.3.3 Action a requires inoperable channels to be restored to OPERABLE status with trip setpoints adjusted consistent with the Trip Setpoint values. These details are to be relocated to the Technical Requirements Manual (TRM) and the references to these setpoints in CTS 3.3.3 are deleted. The Allowable Value is the required limitation for the associated Function and this value is retained in the Technical Specifications. These relocated Trip Setpoints are not required to be in the Technical Specifications to provide adequate protection of the public health and safety. The TRM will be incorporated by reference into the LaSalle 1 and 2 UFSAR at ITS implementation. Any changes to the UFSAR will be controlled by the provisions of 10 CFR 50.59.

LA.2 The detail in CTS 4.3.3.2 relating to methods (simulated automatic operation) for performing the LOGIC SYSTEM FUNCTIONAL TEST is proposed to be relocated to the Bases. This detail is not necessary to ensure the OPERABILITY of the loss of power instrumentation. The requirements of ITS 3.3.8.1 and proposed SR 3.3.8.1.3 are adequate to ensure the loss of power instruments are maintained OPERABLE. Therefore, the relocated detail is not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

LA.3 System design details in CTS Tables 3.3.3-1 and 3.3.3-2 are proposed to be relocated to the Bases. Details relating to system design (the total number of channels provided in the design, the number of channels required to generate a trip and the types of relays) are unnecessary in the LCO. These details are not necessary to ensure the OPERABILITY of the loss of power instrumentation. The requirements of ITS 3.3.8.1 and the associated Surveillance Requirements are adequate to ensure the loss of power instruments are maintained OPERABLE. Therefore, the relocated details are not required to be in the ITS

TECHNICAL CHANGES - LESS RESTRICTIVE

LA.3 (cont'd) to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

LD.1 The Frequency for performing the LOGIC SYSTEM FUNCTIONAL TEST of CTS 4.3.3.2 and CHANNEL FUNCTIONAL TEST of CTS 4.3.3.1 (as part of the CHANNEL CALIBRATION requirement) has been extended from 18 months to 24 months in proposed SR 3.3.8.1.3 and SR 3.3.8.1.1 respectively. These SRs ensures that LOP Instrumentation logic will function as designed to ensure proper response during an analyzed event. The proposed change will allow these Surveillances to extend their Surveillance Frequency from the current 18 month Surveillance Frequency (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2) to a 24 month Surveillance Frequency (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2). This proposed change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical maintenance and surveillance data have shown that these tests normally pass their Surveillances at the current Frequency. An evaluation has been performed using this data, and it has been determined that the effect on safety due to the extended Surveillance Frequency will be minimal. The LOP instrumentation including the actuating logic is designed to be single failure proof and therefore, is highly reliable.

Based on the inherent system and component reliability, the impact, if any, on system availability is minimal as a result of the change in the surveillance test interval. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 24 month Surveillance Frequencies, if performed at the maximum interval allowed by proposed SR 3.0.2 (30 months) do not invalidate any assumptions in the plant licensing basis.

Furthermore, as stated in the NRC Safety Evaluation Report (dated August 2, 1993) relating to extension of the Peach Bottom Atomic Power Station, Unit Numbers 2 and 3 surveillance intervals from 18 to 24 months:

"Industry reliability studies for boiling water reactors (BWRs), prepared by the BWR Owners Group (NEDC-30936P) show that the overall safety systems' reliabilities are not dominated by the reliabilities of the logic system, but by that of the mechanical components, (e.g., pumps and valves), which are consequently

TECHNICAL CHANGES - LESS RESTRICTIVE

LD.1 (cont'd)

tested on a more frequent basis. Since the probability of a relay or contact failure is small relative to the probability of mechanical component failure, increasing the Logic System Functional Test interval represents no significant change in the overall safety system unavailability."

Based on the above discussion, the impact, if any, of this change on system availability is minimal.

LE.1

The Frequency for performing the CHANNEL CALIBRATION of CTS 4.3.3.1 has been extended from 18 months to 24 months in proposed SR 3.3.8.1.2. This SR ensures that LOP Instrumentation will function as designed to ensure proper response during an analyzed event. The proposed change will allow these Surveillances to extend their Surveillance Frequency from the current 18 month Surveillance (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2) to a 24 month Surveillance Frequency (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2). This proposed change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991.

Extending the SR Frequency is acceptable because the electrical power sources along with the LOP initiation logic are designed to be single failure proof and therefore are highly reliable. Furthermore, the impacted LOP instrumentation has been evaluated based on make, manufacturer and model number to determine that the instrumentation's actual drift falls within the design allowance in the associated setpoint calculation. The following paragraphs, listed by CTS Trip Function number, identify the make, manufacturer and model number and the drift evaluations performed:

Trip Function D.1: 4.16 kV Emergency Bus Undervoltage— Loss of Voltage

This function is performed by ABB ITE-27, GE NGV-13A, undervoltage relays, and GE SAM-11A bus undervoltage timer relays. The relays' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

TECHNICAL CHANGES - LESS RESTRICTIVE

LE.1 (cont'd)

Trip Function D.2: 4.16 kV Emergency Bus Undervoltage— Degraded Voltage

This function is performed by ABB ITE-27N, degraded bus voltage relays, and Agastat TR bus degraded voltage time delay relays. The relays' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Based on the design of the instrumentation and the drift evaluations, it is concluded that the impact, if any, on system availability is minimal as a result of the change in the surveillance test interval.

A review of the surveillance test history was performed to validate the above conclusion. This review of the surveillance test history, demonstrates that there are no failures that would invalidate the conclusion that the impact, if any on system availability is minimal from a change to a 24-month surveillance frequency. In addition, the proposed 24-month Surveillance Frequencies, if performed at the maximum interval allowed by proposed SR 3.0.2 (30 months) do not invalidate any assumptions in the plant licensing basis.

LF.1

This change revises the Current Technical Specifications (CTS) Allowable Values to the Improved Technical Specifications (ITS) Allowable Values. ITS Section 3.3 reflects Allowable Values consistent with the philosophy of BWR ISTS, NUREG-1434, Rev. 1. These Allowable Values have been established consistent with the methods described in ComEd's Instrument Setpoint Methodology (Nuclear Engineering Standard NES-EIC-20.04, "Analysis of Instrument Channel Setpoint Error and Instrument Loop Accuracy"). For most cases, the Allowable Value determinations were calculated using plant specific operating and surveillance trend data or an allowance as provided for by the Instrument Setpoint Methodology. For all other cases, vendor documented performance specifications for drift were used. The Allowable Value verification used actual plant operating and surveillance trend information to ensure the validity of the developed Allowable Value. All changes to safety analysis limits applied in the methodologies were evaluated and confirmed as ensuring safety analysis licensing acceptance limits are maintained. All design limits applied in the methodologies were confirmed as ensuring that applicable

TECHNICAL CHANGES - LESS RESTRICTIVE

LF.1 (cont'd)

design requirements of the associated systems and equipment are maintained. The methodologies used have been compared with the guidance of ANSI/ISA S67.04-Part I-1994 and ANSI/ISA RP67.04-Part II-1994. Plant calibration procedures will ensure that the assumptions regarding calibration accuracy, measurement and test equipment accuracy, and setting tolerance are maintained. Setpoints for each design or safety analysis limit have been established by accounting for the applicable instrument accuracy, calibration and drift uncertainties, environmental effects, power supply fluctuations, as well as uncertainties related to process and primary element measurement accuracy using the Instrument Setpoint Methodology. The Allowable Values have been established from each design or safety analysis limit by combining the errors associated with channel/instrument calibration (e.g., device accuracy, setting tolerance, and drift) with the calculated Nominal Trip Setpoint also using the Instrument Setpoint Methodology.

Additionally, each applicable channel/instrument has been evaluated and analyzed to support a fuel cycle extension to a 24 month interval. These evaluations and analyses have been performed utilizing the guidance provided in EPRI TR-103335, "Guidelines for Instrument Calibration Extension/Reduction Programs, Revision 1. The EPRI guidance was used to demonstrate that the data collected by the operating plant (from surveillance testing) has remained acceptable and reasonable with regard to the manufacturers design specifications.

Use of the previously discussed methodologies for determining Allowable Values, instrument setpoints, and analyzing channel/instrument performance ensure that the design basis and associated safety limits will not be exceeded during plant operation. These evaluations, determinations, and analyses now form a portion of the plants design bases.

"Specific"

None

RELOCATED SPECIFICATIONS

None

ELECTRICAL POWER SYSTEMS

A.1

REACTOR PROTECTION SYSTEM ELECTRICAL POWER MONITORING

LIMITING CONDITION FOR OPERATION

LCO 3.3.8.2 3.8.3.4 Two RPS electric power monitoring assemblies for each inservice RPS MG set or alternate power supply shall be OPERABLE.

APPLICABILITY: At all times. L.1

ACTION:

ACTION A a. With one RPS electric power monitoring assembly for an inservice RPS MG set or alternate power supply inoperable, restore the inoperable power monitoring assembly to OPERABLE status within 72 hours or remove the associated RPS MG set or alternate power supply from service. A.2

ACTION B b. With both RPS electric power monitoring assemblies for an inservice RPS MG set or alternate power supply inoperable, restore at least one electric power monitoring assembly to OPERABLE status within ~~30 minutes~~ 1 hour L.2 or remove the associated RPS MG set or alternate power supply from service. A.2

Add proposed ACTION C A.3

Add proposed ACTIONS D, E, and F L.3

SURVEILLANCE REQUIREMENTS

4.8.3.4 The above specified RPS electric power monitoring assemblies shall be determined OPERABLE:

SR 3.3.8.2.1 a. By performance of a CHANNEL FUNCTIONAL TEST each time the plant is in COLD SHUTDOWN for a period of more than 24 hours, unless performed in the previous 6 months. 24 LD.1 LE.1

SR 3.3.8.2.2 SR 3.3.8.2.3 SR 3.3.8.2.2 SR 3.3.8.2.3 b. At least once per ~~18~~ months by demonstrating the OPERABILITY of overvoltage, undervoltage, and underfrequency protective instrumentation by performance of a CHANNEL CALIBRATION including simulated automatic actuation of the protective relays, tripping logic and output circuit breakers and verifying the following ~~setpoints~~ Allowable Values: LA.1 A.4

SR 3.3.8.2.2

1. Overvoltage ≤ 132 VAC with time delay set to ≤ 4 seconds
2. Undervoltage ≥ 108 VAC with time delay set to ≤ 4 seconds
3. Underfrequency ≥ 57 Hz with time delay set to ≤ 4 seconds

M.1

LF.1

Page 1 of 2

REACTOR PROTECTION SYSTEM ELECTRIC POWER MONITORING

LIMITING CONDITION FOR OPERATION

LCO 3.3.8.2 3.8.3.4 Two RPS electric power monitoring assemblies for each inservice RPS MG set or alternate power supply shall be OPERABLE.

APPLICABILITY: At all times. L.1

ACTION:

ACTION A a. With one RPS electric power monitoring assembly for an inservice RPS MG set or alternate power supply inoperable, restore the inoperable power monitoring assembly to OPERABLE status within 72 hours or remove the associated RPS MG set or alternate power supply from service. A.2

ACTION B b. With both RPS electric power monitoring assemblies for an inservice RPS MG set or alternate power supply inoperable, restore at least one electric power monitoring assembly to OPERABLE status within 30 minutes or remove the associated RPS MG set or alternate power supply from service. A.2

L.2 1 hour

Add proposed ACTION C A.3

SURVEILLANCE REQUIREMENTS

Add proposed ACTIONS D, E, and F L.3

4.8.3.4 The above specified RPS electric power monitoring assemblies shall be determined OPERABLE:

SR 3.3.8.2.1 a. By performance of a CHANNEL FUNCTIONAL TEST each time the plant is in COLD SHUTDOWN for a period of more than 24 hours, unless performed in the previous 6 months. 24 LD.1 LE.1

SR 3.3.8.2.2, SR 3.3.8.2.3 b. At least once per 18 months by demonstrating the OPERABILITY of overvoltage, undervoltage, and underfrequency protective instrumentation by performance of a CHANNEL CALIBRATION including simulated automatic actuation of the protective relays, tripping logic and output circuit breakers and verifying the following ~~setpoints~~ Allowable Values: LA.1 A.4

SR 3.3.8.2.2 SR 3.3.8.2.3

SR 3.3.8.2.2

1. Overvoltage ≤ 132 VAC with time delay set to ≤ 4 seconds
2. Undervoltage ≥ 108 VAC with time delay set to ≤ 4 seconds
3. Underfrequency ≥ 57 Hz with time delay set to ≤ 4 seconds

M.1

LF.1

ADMINISTRATIVE

A.1 In the conversion of the LaSalle 1 and 2 current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1434, Rev. 1 (i.e., the Improved Standard Technical Specifications (ISTS)).

A.2 CTS 3.8.3.4 Actions a and b provide the option of either restoring the inoperable RPS electric power monitoring assembly to OPERABLE status or removing the associated RPS power supply from service. ITS 3.3.8.2 Required Actions A.1 and B.1 require the associated inservice power supply(s) to be removed from service. The option of restoring inoperable RPS electric power monitoring assemblies to an OPERABLE condition is implicit in the ITS. ISTS LCO 3.0.2 (proposed ITS LCO 3.0.2) states that if the LCO is met prior to expiration of the specified Completion Time(s), completion of the Required Actions is not required, unless otherwise stated. As a result, it is acceptable to restore the RPS electric power monitoring assembly(s) to an OPERABLE status within the Required Action Completion Times and the Required Action of removing the associated inservice power supply(s) from service would not be required. Therefore, this proposed change, in effect, only removes a restatement of provisions specified in ITS LCO 3.0.2, and the change is consistent with the BWR ISTS, NUREG-1434, Revision 1. As such, this proposed change is considered to be administrative.

A.3 A new ACTION is provided (ITS 3.3.8.2 ACTION C) that requires a shutdown if the Required Actions of Condition A or B are not met when the unit is in MODE 1, 2, or 3. This action is functionally equivalent to the CTS 3.0.3 (although CTS 3.0.3 does provide an additional 1 hour to commence the shutdown). Therefore, this change is considered to be a presentation preference and is administrative.

A.4 CTS 4.8.3.4.b includes RPS electric power monitoring assembly "setpoints," It is proposed to re-label these "setpoints" as "Allowable Values" consistent with the formal of the BWR ISTS, NUREG-1434, Revision 1 (ISTS SR 3.3.8.2.2). In accordance with current plant procedures and practices, the overvoltage, undervoltage, and underfrequency trip setpoints specified in CTS 4.8.3.4.b (proposed ITS SR 3.3.8.2.2) are applied as Allowable Values. Thus, the trip setpoints specified in current plant procedures ensure adequate margins (accounting for analysis assumptions regarding calibration accuracy, measure and

ADMINISTRATIVE

A.4 (cont'd) test equipment accuracy, and setting tolerance) to the trip setpoints specified in CTS 4.8.3.4.b to prevent design or safety analysis limits from being exceeded in the event of transients or accidents. This proposed change does not modify the actual trip setpoints specified in CTS 4.8.3.4.b or the Allowable Values specified in ITS SR 3.3.8.2.2 (see Discussion of Change LF.1 below for proposed changes to the Allowable Values). Therefore, this change is considered a nomenclature preference change only and, as such, is considered an administrative change.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 Time delay setting requirements have been added in proposed SR 3.3.8.2.2 for the overvoltage, undervoltage, and underfrequency protective devices of the RPS logic electric power monitoring assemblies. Currently, no maximum time delay setting is provided in CTS 4.8.3.4.b. These devices have adjustable time delay settings. The new Allowable Value for all protective devices is ≤ 4 seconds. The Allowable Values are based on the current setpoint methodology and ensures that the devices trip to protect the equipment powered by the associated RPS motor generator or alternate power supply. These Allowable Values are also consistent with the current settings of the devices. This change is an additional restriction on plant operation.

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

LA.1 Details of the methods for performing CTS 4.8.3.4.b, the simulated automatic actuation of the RPS overvoltage, undervoltage, and underfrequency protective relays, tripping logic, and output circuit breakers, are proposed to be relocated to the Bases. These details are not necessary to ensure OPERABILITY of the RPS electric power monitoring equipment. The requirements of ITS 3.3.8.2 and the associated Surveillance Requirements are adequate to ensure this equipment is maintained OPERABLE. As such, these relocated details are not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program described in Chapter 5 of the ITS.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

LD.1 The Frequency for performing the system functional test of CTS 4.8.3.4.b has been extended from 18 months to 24 months in proposed SR 3.3.8.2.3. This SR ensures that RPS electric power monitoring assemblies will function as designed to ensure proper response during an analyzed event. The proposed change will allow these Surveillances to extend their Surveillance Frequency from the current 18 month Surveillance Frequency (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2) to a 24 month Surveillance Frequency (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2). This proposed change was evaluated in accordance with the guidance provided in NRC Generic Letter 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Reviews of historical maintenance and surveillance data have shown that the RPS electric power monitoring assembly logic cards were exhibiting a high failure rate prior to their replacement with upgraded logic cards during the 1995-1996 time period. The reliability of RPS electric power monitoring assembly logic cards has been a generic industry issue documented in GE Service Information Letter (SIL) 496 and subsequent revisions and supplements. GE recommended that BWRs with problematic cards replace them with redesigned logic cards with improved performance. Reviews of surveillance data after logic card replacement from 1996 to the present have shown a substantial decrease in the rate of failures as documented in the surveillance test history which has shown an improved reliability with the upgraded logic cards installed at LaSalle. Also, the inherent design provides for two independent RPS electric power monitoring assemblies for each RPS bus with the capability of providing protection for the bus. This redundancy in design provides for highly reliable operation and minimizes the possibility that any single failure would prevent protective action from occurring. RPS electric power monitoring assemblies are normally tested on a more frequent basis during the operating cycle in accordance with CTS 4.8.3.4.a (proposed SR 3.3.8.2.1). This testing of the RPS electric power monitoring assemblies, if performed, ensures that a significant portion of the RPS electric power monitoring channel circuitry is operating properly and will detect significant failures of this circuitry. If this testing is not performed, this change is still considered acceptable based on the historical data, and since the RPS electric power monitoring instrumentation is designed to be single failure proof, and therefore, is highly reliable. Based on the inherent system and component reliability and the testing performed during the operating cycle, the impact, if any, from this change on system availability is minimal. The review of historical surveillance data also demonstrated that there are no failures that would invalidate this conclusion. In addition, the proposed 24 month Surveillance Frequencies, if performed at the maximum interval allowed by proposed SR (30 months) do not invalidate any assumptions in the past licensing basis.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

LE.1 The Frequency for performing the CHANNEL CALIBRATION requirement of CTS 4.8.3.4.b has been extended from 18 months to 24 months in proposed SR 3.3.8.2.2. The subject SR ensures that the RPS electric power monitoring assemblies will trip at the specified Allowable Values. The proposed change will allow these Surveillances to extend their Surveillance Frequency from the current 18 month Surveillance Frequency (i.e., a maximum of 22.5 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2) to a 24 month Surveillance Frequency (i.e., a maximum of 30 months accounting for the allowable grace period specified in CTS 4.0.2 and proposed SR 3.0.2). This proposed change was evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991. Extending the SR Frequency is acceptable because the RPS electric power monitoring instrumentation is designed to be highly reliable. Furthermore, the impacted RPS electric power monitoring assembly logic cards have been evaluated based on manufacturer and model number to determine the logic cards projected drift values.

The RPS electric power monitoring assembly logic cards are manufactured by General Electric, model number 148C6118G002. The breaker trip functions provided by the logic cards are overvoltage, undervoltage and underfrequency with adjustable time delays available for each function. The logic cards' drift was determined by quantitative analysis. The drift value determined will be used in the development of, confirmation of, or revision to the current plant setpoint and the Technical Specification Allowable Value. The results of this analysis will support a 24 month surveillance interval or the interval will be adjusted to a value supported by the analysis.

Based on the design of the RPS electric power monitoring assemblies and the drift evaluations, it is concluded that the impact, if any, on system availability is minimal as a result of the change in the surveillance test interval.

A review of the surveillance test history was performed to validate the above conclusion. This review of the surveillance test history demonstrates that there are no failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 24-month surveillance frequency. In addition, the proposed 24-month Surveillance Frequencies, if performed at the maximum interval allowed by proposed SR 3.0.2 (30 months) do not invalidate any assumptions in the plant licensing basis.

TECHNICAL CHANGES - LESS RESTRICTIVE (continued)

LF.1 This change revises the Current Technical Specifications (CTS) Allowable Values to the Improved Technical Specifications (ITS) Allowable Values. ITS Section 3.3 reflects Allowable Values consistent with the philosophy of BWR ISTS, NUREG-1434, Rev. 1. These Allowable Values have been established consistent with the methods described in ComEd's Instrument Setpoint Methodology (Nuclear Engineering Standard NES-EIC-20.04, "Analysis of Instrument Channel Setpoint Error and Instrument Loop Accuracy"). For most cases, the Allowable Value determinations were calculated using plant specific operating and surveillance trend data or an allowance as provided for by the Instrument Setpoint Methodology. For all other cases, vendor documented performance specifications for drift were used. The Allowable Value verification used actual plant operating and surveillance trend information to ensure the validity of the developed Allowable Value. All changes to safety analysis limits applied in the methodologies were evaluated and confirmed as ensuring safety analysis licensing acceptance limits are maintained. All design limits applied in the methodologies were confirmed as ensuring that applicable design requirements of the associated systems and equipment are maintained. The methodologies used have been compared with the guidance of ANSI/ISA S67.04-Part I-1994 and ANSI/ISA RP67.04-Part II-1994. Plant calibration procedures will ensure that the assumptions regarding calibration accuracy, measurement and test equipment accuracy, and setting tolerance are maintained.

Setpoints for each design or safety analysis limit have been established by accounting for the applicable instrument accuracy, calibration and drift uncertainties, environmental effects, power supply fluctuations, as well as uncertainties related to process and primary element measurement accuracy using the Instrument Setpoint Methodology. The Allowable Values have been established from each design or safety analysis limit by combining the errors associated with channel/instrument calibration (e.g., device accuracy, setting tolerance, and drift) with the calculated Nominal Trip Setpoint also using the Instrument Setpoint Methodology.

Additionally, each applicable channel/instrument has been evaluated and analyzed to support a fuel cycle extension to a 24 month interval. These evaluations and analyses have been performed utilizing the guidance provided in EPRI TR-103335, "Guidelines for Instrument Calibration Extension/Reduction Programs, Revision 1. The EPRI guidance was used to demonstrate that the data collected by the operating plant (from surveillance testing) has remained acceptable and reasonable with regard to the manufacturers design specifications.

TECHNICAL CHANGES - LESS RESTRICTIVE

LF.1 (cont'd) Use of the previously discussed methodologies for determining Allowable Values, instrument setpoints, and analyzing channel/instrument performance ensure that the design basis and associated safety limits will not be exceeded during plant operation. These evaluations, determinations, and analyses now form a portion of the plants design bases.

"Specific"

L.1 CTS 3.8.3.4 requires the RPS logic bus EPAs to be OPERABLE at all times. The Applicability of ITS 3.3.8.2 is specified as MODES 1, 2, and 3, MODES 4 and 5 with RHR SDC isolation valves open, MODE 5 with any control rod withdrawn from a core cell containing one or more fuel assemblies, during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, and during OPDRVs. With no control rods withdrawn from core cells containing fuel assemblies in MODE 5 and RHR SDC isolation valves not open in MODE 4 or 5, there is no need for the RPS logic or RHR SDC isolation to function and therefore, there is no need to require their protection. With no movement of irradiated fuel assemblies in the secondary containment, no CORE ALTERATIONS, and no OPDRVs taking place, there is no need for the secondary containment isolation instrumentation and SGT System instrumentation to function and therefore, there is no need to require their protection. Therefore, the Applicability of CTS 3.8.3.4 has been changed to only include those MODES or Conditions when the RPS, RHR SDC isolation; secondary containment isolation, or SGT System initiation functions are required. In addition, ITS 3.10.3 will allow a single control rod to be withdrawn in MODE 4 by allowing the Reactor Mode Switch to be in the Refuel position. Therefore, the RPS Electric Power Monitoring requirements have been included in ITS 3.10.3.

L.2 The allowed out of service time of CTS 3.8.3.4 Action b for two inoperable RPS electric power monitoring assemblies is extended from 30 minutes to 1 hour in ITS 3.3.8.2 Required Action B.1 to provide sufficient time for the plant personnel to take corrective actions. The time extension for two inoperable assemblies is minimal but necessary to allow consideration of plant conditions, available personnel, and the appropriate actions.

L.3 CTS 3.8.3.4 does not provide any actions if the RPS electric power monitoring assemblies (EPAs) are not restored or the associated RPS MG set or alternate power supply is not removed from service (which de-energizes the associated RPS bus) as required by CTS 3.8.3.4 Action a or b. Thus, CTS 3.0.3 is

TECHNICAL CHANGES - LESS RESTRICTIVE

L.3 (cont'd) required to be entered. However, since CTS 3.0.3 is not applicable in MODES 4 and 5, 10 CFR 50.36(c)(2) requires that the licensee notify the NRC if required by 10 CFR 50.72, and a Licensee Event Report (LER) be submitted to the NRC as required by 10 CFR 50.73. In lieu of these two requirements, three new ACTIONS are provided if the Required Actions of Condition A or B are not met in MODES other than MODES 1, 2, and 3. ITS 3.3.8.2 ACTION D requires action to be initiated to restore one EPA to OPERABLE status for each RPS logic bus (ITS 3.3.8.2 Required Action D.1) or to isolate the Residual Heat Removal (RHR) Shutdown Cooling (SDC) System (ITS 3.3.8.2 Required Action D.2). ITS 3.3.8.2 ACTION E requires action to be initiated to fully insert all insertable control rods in core cells containing one or more fuel assemblies. ACTION F requires action to be taken to isolate the affected secondary containment penetration flow paths and start the associated SGT subsystems, or to declare the associated SCIVs and SGT subsystems inoperable. These actions place the reactor in the least reactive condition and ensure either the safety function of the RPS, primary containment isolation system, and secondary containment isolation system will not be required or is already met. The option (Required Action D.1) is given to continue to restore an assembly to OPERABLE status since there may be a need for RHR SDC System. Alternately, Required Actions F.1.2 and F.2.2, which require declaring the associated SCIVs and SGT subsystems(s) inoperable, are acceptable since the individual Specifications (ITS 3.6.4.2 and ITS 3.6.4.3, respectively) will provide appropriate actions that are consistent with actions taken when an SCIV or SGT subsystem is inoperable for reasons other than inoperable RPS EPAs.

RELOCATED SPECIFICATIONS

None

R.1

METEOROLOGICAL MONITORING INSTRUMENTATION*

LIMITING CONDITION FOR OPERATION

3.3.7.3 The meteorological monitoring instrumentation channels shown in Table 3.3.7.3-1 shall be OPERABLE.**

APPLICABILITY: At all times.

ACTION:

a. With one or more meteorological monitoring instrumentation channels inoperable for more than 7 days, prepare and submit a Special Report to the Commission pursuant to Specification 6.6.C within the next 10 days outlining the cause of the malfunction and the plans for restoring the instrumentation to OPERABLE status.

b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.7.3 Each of the above required meteorological monitoring instrumentation channels shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3.7.3-1.

*The Meteorological Monitoring Instrumentation System is shared between La Salle Unit 1 and La Salle Unit 2.

**The normal or emergency power source may be inoperable in OPERATIONAL CONDITION 4 or 5 or when defueled.

R.1

TABLE 3.3.7.3-1

METEOROLOGICAL MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM INSTRUMENTS OPERABLE
a. Wind Speed	
1. Elev. 200 ft. and 375 ft.	1 each
b. Wind Direction	
1. Elev. 200 ft. and 375 ft.	1 each
c. Air Temperature Difference	
1. Elev. 33/200 ft. or Elev. 33/375 ft	1

TABLE 4.3.7.3-1

METEOROLOGICAL MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION
a. Wind Speed		
1. Elev. 200 ft. and 375 ft.	D	SA
b. Wind Direction		
1. Elev. 200 ft. and 375 ft.	D	SA
c. Air Temperature Difference		
1. Elev. 33/200 ft. or 33/375 ft.	D	SA

R.1

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METEOROLOGICAL MONITORING INSTRUMENTATION*

LIMITING CONDITION FOR OPERATION

3.3.7.3 The meteorological monitoring instrumentation channels shown in Table 3.3.7.3-1 shall be OPERABLE.**

APPLICABILITY: At all times.

ACTION:

a. With one or more meteorological monitoring instrumentation channels inoperable for more than 7 days, prepare and submit a Special Report to the Commission pursuant to Specification 6.6.C within the next 10 days outlining the cause of the malfunction and the plans for restoring the instrumentation to OPERABLE status.

b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.7.3 Each of the above required meteorological monitoring instrumentation channels shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3.7.3-1.

*The Meteorological Monitoring Instrumentation System is shared between La Salle Unit 1 and La Salle Unit 2.

**The normal or emergency power source may be inoperable in OPERATIONAL CONDITION 4 or 5 or when defueled.

CTS 3/4.3.7.3

TABLE 3.3.7.3-1

METEOROLOGICAL MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM INSTRUMENTS OPERABLE
a. Wind Speed	
1. Elev. 200 ft. and 375 ft.	1 each
b. Wind Direction	
1. Elev. 200 ft. and 375 ft.	1 each
c. Air Temperature Difference	
1. Elev. 33/200 ft. or Elev. 33/375 ft	1

R.1

R.1

TABLE 4.3.7.3-1

METEOROLOGICAL MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION
a. Wind Speed		
1. Elev. 200 ft. and 375 ft.	D	SA
b. Wind Direction		
1. Elev. 200 ft. and 375 ft.	D	SA
c. Air Temperature Difference		
1. Elev. 33/200 ft. or 33/375 ft.	D	SA

ADMINISTRATIVE

None

TECHNICAL CHANGES - MORE RESTRICTIVE

None

TECHNICAL CHANGES - LESS RESTRICTIVE

None

RELOCATED SPECIFICATIONS

R.1 The CTS 3/4.3.7.3 meteorological monitoring instrumentation provides information only and is not considered in any design accident or transient. It does provide information regarding environmental parameters that may affect distribution of fission products and gases following a design basis accident. However, the evaluation summarized in NEDO-31466 determined the loss of this instrumentation to be a non-significant risk contributor to core damage frequency and offsite release. Therefore, the requirements specified in CTS 3/4.3.7.3 do not satisfy the NRC Policy Statement Technical Specification screening criteria as documented in the Application of Selection Criteria to the LaSalle 1 and 2 Technical Specifications and will be relocated to the Technical Requirements Manual (TRM). The TRM will be incorporated by reference into the LaSalle 1 and 2 UFSAR at ITS implementation. Changes to the TRM will be controlled in accordance with 10 CFR 50.59.

EXPLOSIVE GAS MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.7.11 The explosive gas monitoring instrumentation channels shown in Table 3.3.7.11-1 shall be OPERABLE with their Alarm/Trip setpoints set to ensure that the limits of specification 3.11.2.1 are not exceeded.

APPLICABILITY: During operation of the main condenser air ejector.

ACTION:

a. With an explosive gas monitoring instrumentation channel Alarm/Trip setpoint less conservative than required by the above specification, declare the channel inoperable, and take the ACTION shown in Table 3.3.7.11-1.

b. With less than the minimum number of explosive gas monitoring instrumentation channels OPERABLE, take the ACTION shown in Table 3.3.7.11-1. Restore the inoperable instrumentation channels to an OPERABLE status wihtin 30 days, or prepare and submit a Special Report to the Commission pursuant to Specification 6.6.C within the next 10 days outlining the cause of the malfunction and the plans for restoring the channel(s) to OPERABLE status.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.7.11 Each explosive gas monitoring instrumentation channel shall be demonstrated OPERABLE by performance of a CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION at the frequencies shown in Table 4.3.7.11-1.

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TABLE 3.3.7.11-1

EXPLOSIVE GAS MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	ACTION
1. MAIN CONDENSER OFFGAS TREATMENT SYSTEM EXPLOSIVE GAS MONITORING SYSTEM (for systems designed to withstand the effects of a hydrogen explosion)		
a. Hydrogen Monitor	1/train	110

TABLE NOTATION

ACTION 110 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, operation of the main condenser offgas treatment system may continue for up to 30 days provided grab samples are collected at least once per 4 hours and analyzed within the following 4 hours. If the recombiner(s) temperature remains constant and THERMAL POWER has not changed, the grab sample collection frequency may be changed to 8 hours.

TABLE 4.3.7.11-1

EXPLOSIVE GAS MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION*	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
1. MAIN CONDENSER OFFGAS TREATMENT SYSTEM EXPLOSIVE GAS MONITORING SYSTEM				
a. Hydrogen Monitor	D	M	Q	**

TABLE NOTATION

* The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:

1. One volume percent hydrogen, balance nitrogen, and
2. Four volume percent hydrogen, balance nitrogen.

** During operation of the main condenser air ejector.

R.1

CTS 3/4.3.7.11

EXPLOSIVE GAS MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.7.11 The explosive gas monitoring instrumentation channels shown in Table 3.3.7.11-1 shall be OPERABLE with their Alarm/Trip setpoints set to ensure that the limits of specification 3.11.2.1 are not exceeded.

APPLICABILITY: During operation of the main condenser air ejector.

ACTION:

a. With an explosive gas monitoring instrumentation channel Alarm/Trip setpoint less conservative than required by the above specification, declare the channel inoperable, and take the ACTION shown in Table 3.3.7.11-1.

b. With less than the minimum number of explosive gas monitoring instrumentation channels OPERABLE, take the ACTION shown in Table 3.3.7.11-1. Restore the inoperable instrumentation channels to an OPERABLE status within 30 days, or prepare and submit a Special Report to the Commission pursuant to Specification 6.6.C. within the next 10 days outlining the cause of the malfunction and the plans for restoring the channel(s) to OPERABLE status.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.7.11 Each explosive gas monitoring instrumentation channel shall be demonstrated OPERABLE by performance of a CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION at the frequencies shown in Table 4.3.7.11-1.

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R.1

TABLE 3.3.7.11-1

EXPLOSIVE GAS MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	ACTION
1. MAIN CONDENSER OFFGAS TREATMENT SYSTEM EXPLOSIVE GAS MONITORING SYSTEM (for systems designed to withstand the effects of a hydrogen explosion)		
a. Hydrogen Monitor	1/train	110

TABLE NOTATION

ACTION 110 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, operation of the main condenser offgas treatment system may continue for up to 30 days provided grab samples are collected at least once per 4 hours and analyzed within the following 4 hours. If the recombiner(s) temperature remains constant and THERMAL POWER has not changed, the grab sample collection frequency may be changed to 8 hours.

R.1

CTS 3/4.3.7.11

TABLE 4.3.7.11-1

EXPLOSIVE GAS MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION*	OPERATIONAL CONDITIONS FOR WHICH SURVEIL-LANCE REQUIRED
1. MAIN CONDENSER OFFGAS TREATMENT SYSTEM EXPLOSIVE GAS MONITORING SYSTEM				
a. Hydrogen Monitor	D	M	Q	**

TABLE NOTATION

* The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:

1. One volume percent hydrogen, balance nitrogen, and
2. Four volume percent hydrogen, balance nitrogen.

** During operation of the main condenser air ejector.

ADMINISTRATIVE

None

TECHNICAL CHANGES - MORE RESTRICTIVE

None

TECHNICAL CHANGES - LESS RESTRICTIVE

None

RELOCATED SPECIFICATIONS

R.1 The Explosive Gas Monitoring Instrumentation specified in CTS 3/4.3.7.11 provides information only and is not considered in any design accident or transient. It does provide information regarding a potential explosive gas mixture in the main condenser offgas treatment system. However, the evaluation summarized in NEDO-31466 determined the loss of this instrumentation to be a non-significant risk contributor to core damage frequency and offsite release. Therefore, the requirements specified in CTS 3/4.3.7.11 do not satisfy the NRC Policy Statement Technical Specification screening criteria as documented in the Application of Selection Criteria to the LaSalle 1 and 2 Technical Specifications and will be relocated to the Technical Requirements Manual (TRM). The TRM will be incorporated by reference into the LaSalle 1 and 2 UFSAR at ITS implementation. Changes to the TRM will be controlled in accordance with 10 CFR 50.59.

~~LOOSE-PART DETECTION SYSTEM~~

~~LIMITING CONDITION FOR OPERATION~~

~~3.3.7.12 The loose-part detection system shall be OPERABLE.~~

~~APPLICABILITY: OPERATIONAL CONDITIONS 1 and 2.~~

~~ACTION:~~

~~a. With one or more loose-part detection system channels inoperable for more than 30 days, prepare and submit a Special Report to the Commission pursuant to Specification 6.6.C within the next 10 days outlining the cause of the malfunction and the plans for restoring the channel(s) to OPERABLE status.~~

~~b. The provisions of Specification 3.0.3 are not applicable.~~

~~SURVEILLANCE REQUIREMENTS~~

~~4.3.7.12 Each channel of the loose-part detection system shall be demonstrated OPERABLE by performance of:~~

~~a. CHANNEL CHECK at least once per 24 hours,~~

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

~~c. CHANNEL CALIBRATION at least once per 18 months.~~

LOOSE-PART DETECTION SYSTEM

LIMITING CONDITION FOR OPERATION

3.3.7.12 The loose-part detection system shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1 and 2.

ACTION:

a. With one or more loose-part detection system channels inoperable for more than 30 days, prepare and submit a Special Report to the Commission pursuant to Specification 6.6.c within the next 10 days outlining the cause of the malfunction and the plans for restoring the channel(s) to OPERABLE status.

b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.7.12 Each channel of the loose-part detection system shall be demonstrated OPERABLE by performance of:

a. CHANNEL CHECK at least once per 24 hours,

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

c. CHANNEL CALIBRATION at least once per 18 months.

DISCUSSION OF CHANGES
CTS: 3/4.3.7.12 - LOOSE PART DETECTION SYSTEM

ADMINISTRATIVE

None

TECHNICAL CHANGES - MORE RESTRICTIVE

None

TECHNICAL CHANGES - LESS RESTRICTIVE

None

RELOCATED SPECIFICATIONS

R.1 The Loose-Part Detection system specified in CTS 3/4.3.7.12 provides information only and is not considered in any design accident or transient. It does provide information regarding potential loose parts in the reactor vessel. However, the evaluation summarized in NEDO-31466 determined the loss of this instrumentation to be a non-significant risk contributor to core damage frequency and offsite release. Therefore, the requirements specified in CTS 3/4.3.7.12 do not satisfy the NRC Policy Statement Technical Specification screening criteria as documented in the Application of Selection Criteria to the LaSalle 1 and 2 Technical Specifications and will be relocated to the Technical Requirements Manual (TRM). The TRM will be incorporated by reference into the LaSalle 1 and 2 UFSAR at ITS implementation. Changes to the TRM will be controlled in accordance with 10 CFR 50.59.

DISCUSSION OF CHANGES
ITS: SECTION 3.3 - INSTRUMENTATION BASES

The Bases of the current Technical Specifications for this section (pages B 2-9 through B 2-13, and B 3/4 3-1 through B 3/4 3-7) have been completely replaced by revised Bases that reflect the format and applicable content of the LaSalle 1 and 2 ITS Section 3.3, consistent with the BWR ISTS, NUREG-1433, Rev. 1 and NUREG-1434, Rev. 1. The revised Bases are as shown in the LaSalle 1 and 2 ITS Bases. In addition, pages 3/4 3-60, 3/4 3-74 (Unit 1), and 3/4 3-73 (Unit 2), which are blank pages, have been removed.