TSTF-505 Revision for Your Consideration

The NRC proposed that we revise TSTF-505, "Provide Risk-Informed Extended Completion Times - RITSTF Initiative 4b," to use a table of Specifications and Required Actions for which a Risk Informed Completion Time may be calculated, instead of revising each specification.

The attached pages have been developed to illustrate the proposed change. Note that this example is not the same as the NRC proposal except for the use of a table. The NRC proposal contained many redundant features and included most of the Section 5.5 program in the LCO 3.0 Usage rule.

The significant changes from TSTF-505, Rev. 0, are:

- Elimination of the Section 1.3 Example.
- Addition of LCO 3.0.10
- Elimination of the Risk Informed Completion Time provisions from the Chapter 3 Specifications.
- Revision of the Section 5.5 program to include a table of Specifications and Required Actions.

Considerations:

- Many changes to the specifications need to be retained. Most are bracketed Conditions for a loss of function. In the Westinghouse ISTS, 24 Specifications in Chapter 3 will still require revision.
- Additional changes and qualifications to the 1.3 Examples and LCO 3.0 Use and Application rules will be needed to accommodate the use of RICTs. Most will be exceptions similar to "not applicable when LCO 3.0.10." These changes will only be applicable to plants adopting TSTF-505.
- This approach creates a potentially error-prone situation. Changes to the Specification Required Actions will require the licensee to identify and revise the Section 5.5 table.
- Operators will need to be trained to check the Section 5.5 table to identify those Required Actions to which a Risk Informed Completion Time may be applied.

Attached is a "rough cut" example of what TSTF-505 would look like for NUREG-1431. It includes the proposed Section 1.3 and revised Section 5.5, was well as the 24 specifications that will still need to be revised.

As noted above, additional changes to Section 1.3 and 3.0 will be needed for internal consistency.

3.0 LCO Applicability

LCO 3.10	Upon reaching the end of a Completion Time associated with one or more of the Required Actions identified in Table 5.5.18-1, the Risk Informed Completion Time Program, which permits calculation of a Risk Informed Completion Time (RICT), may be used to complete the Required Action beyond the listed Completion Time. After the listed Completion Time has expired, the subsystem must be restored to OPERABLE status within the RICT or the Required Action and associated Completion Time is considered not met. If the Completion Time of the Required Action has expired and subsequent changes in plant condition result in exiting the applicability of the Risk Informed Completion Time Program without restoring the inoperable subsystem to OPERABLE status, the Required Action and associated Completion Time is considered not met. If the RICT expires or is recalculated to be less than the elapsed time since the Condition was entered and the inoperable subsystem has not been restored to OPERABLE status, the Required Action and associated Completion Time is considered not met.

Comment: RA F.2.2 requires periodic performance of an action, Required Actions K.1, L.1,and M.1 contain an "Immediately" Completion Time and Conditions O, R, U, X, AA, HH and KK are default Conditions. Therefore these are excluded

3.3 INSTRUMENTATION

3.3.1 Reactor Trip System (RTS) Instrumentation

LCO 3.3.1 The RTS instrumentation for each Function in Table 3.3.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.1-1.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one or more required channels or trains inoperable.	A.1 Enter the Condition referenced in Table 3.3.1-1 for the channel(s) or train(s).	Immediately
B. One Manual Reactor Trip channel inoperable.	B.1 Restore channel to OPERABLE status. ~~OR~~ ~~B.2 Be in MODE 3.~~	48 hours ~~54 hours~~
[C. Two Manual Reactor Trip channels inoperable.	C.1 Restore inoperable channels to OPERABLE status.	1 hour]
~~C~~D. One channel or train inoperable.	~~C~~D.1 Restore channel or train to OPERABLE status. ~~OR~~ ~~C.2.1 Initiate action to fully insert all rods.~~	48 hours ~~48 hours~~

CONDITION	REQUIRED ACTION	COMPLETION TIME
	~~AND~~	

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	~~C.2.2 Place the Rod Control System in a condition incapable of rod withdrawal.~~	~~49 hours~~
[E. Two channels or trains inoperable.	E.1 Restore inoperable channels to OPERABLE status.	1 hour]
~~D~~F. One Power Range Neutron Flux - High channel inoperable.	[----------NOTE---------- The inoperable channel may be bypassed for up to 12 hours for surveillance testing and setpoint adjustment of other channels. ---------- ----------REVIEWER'S NOTE---------- The below Note should be used for plants with installed bypass test capability. One channel may be bypassed for up to 12 hours for surveillance testing and setpoint adjustment. ----------] ~~D~~F.1.1 Place channel in trip. AND ~~D~~ F.1.2 Reduce THERMAL POWER to ≤ 75% RTP. OR F.2.1 Place channel in trip. AND	72 hours 78 hours 72 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	~~D~~F.2.2 ----------NOTE---------- Only required to be performed when the Power Range Neutron Flux input to QPTR is inoperable. ---------- Perform SR 3.2.4.2.	 Once per 12 hours
	~~OR~~ ~~D.3 Be in MODE 3.~~	 ~~78 hours~~
[G. Two or more Power Range Neutron Flux - High channel inoperable.	G.1 Restore inoperable channels to OPERABLE status.	1 hour]
~~E~~H.One channel inoperable.	[----------NOTE---------- The inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels. ---------- ----------REVIEWER'S NOTE---------- The below Note should be used for plants with installed bypass test capability: One channel may be bypassed for up to 12 hours for surveillance testing. ----------] ~~E~~H.1 Place channel in trip. ~~OR~~ ~~E.2 Be in MODE 3.~~	 72 hours ~~78 hours~~
[I. Two or more channels inoperable.	I.1 Restore inoperable channels to OPERABLE	1 hour]

		status.	
~~F~~J. One Intermediate Range Neutron Flux channel inoperable.	~~F~~J.1 OR	Reduce THERMAL POWER to < P-6.	24 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	~~F~~J.2 Increase THERMAL POWER to > P-10.	24 hours
~~G~~K. Two Intermediate Range Neutron Flux channels inoperable.	~~G~~K.1 ----------NOTE---------- Limited plant cooldown or boron dilution is allowed provided the change is accounted for in the calculated SDM. ---------- Suspend operations involving positive reactivity additions.	Immediately
	AND	
	~~G~~K.2 Reduce THERMAL POWER to < P-6.	2 hours
~~H~~L. One Source Range Neutron Flux channel inoperable.	----------NOTE---------- Limited plant cooldown or boron dilution is allowed provided the change is accounted for in the calculated SDM. ----------	
	~~H~~L.1 Suspend operations involving positive reactivity additions.	Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~I~~M. Two Source Range Neutron Flux channels inoperable.	~~I~~M.1 Open reactor trip breakers (RTBs).	Immediately
~~J~~N. One Source Range Neutron Flux channel inoperable.	~~J~~N.1 Restore channel to OPERABLE status. ~~OR~~ ~~J.2.1 Initiate action to fully insert all rods.~~ ~~AND~~ ~~J.2.2. Place the Rod Control System in a condition incapable of rod withdrawal.~~ ~~.~~	48 hours ~~48 hours~~ ~~49 hours~~
O. Required Action and associated Completion Time of Condition D, E or N not met.	O.1 Initiate action to fully insert all rods. AND O.2 Place the Rod Control System in a condition incapable of rod withdrawal.	Immediately 1 hour
~~K~~P. One channel inoperable.	[----------NOTE---------- The inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels. ---------- ----------REVIEWER'S NOTE---------- The below Note should be used for plants with installed bypass test capability: One channel may be bypassed for up to 12 hours for surveillance testing.	

	----------] ~~K~~P.1 Place channel in trip. ~~OR~~	72 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
[Q. Two or more channels inoperable.	Q.1 Restore inoperable channels to OPERABLE status.	1 hour]
R. Required Action and associated Completion Time of Condition P [or Q] not met.	~~K.2~~R.1 Reduce THERMAL POWER to < P-7.	~~78~~ 6 hours
~~L~~S. One Reactor Coolant Pump Breaker Position (Single Loop) channel inoperable.	----------NOTE---------- The inoperable channel may be bypassed for up to [4] hours for surveillance testing of other channels. ---------- ~~L~~S.1 Restore channel to OPERABLE status. ~~OR~~ ~~L.2 Reduce THERMAL POWER to < P-8.~~	[6] hours ~~[10] hours~~
[T. Two Reactor Coolant Pump Breaker Position (Single Loop) channels inoperable.	T.1 Restore inoperable channels to OPERABLE status.	1 hour]
U. Required Action and associated Completion Time of Condition S [or T] not met.	U.1 Reduce THERMAL POWER to < P-8.	[4] hours
~~M~~V. One Reactor Coolant Breaker Position (Two Loops) channel inoperable.	----------NOTE---------- The inoperable channel may be bypassed for up to [4] hours for surveillance testing of other	

	channels. --- ~~M~~V.1 Place the channel in trip. ~~OR~~ ~~M.2 Reduce THERMAL POWER to <P-7.~~	 [6] hours ~~[12] hours~~
[W. Two or more Reactor Coolant Breaker Position (Two Loops) channels inoperable.	W.1 Restore inoperable channels to OPERABLE status.	1 hour]

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
X. Required Action and associated Completion Time of Condition V [or W] not met.	X.1 Reduce THERMAL POWER to <P-7.	[6] hours
~~N~~Y. One Turbine Trip channel inoperable.	[----------NOTE---------- The inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels. ---------- ----------REVIEWER'S NOTE---------- The below Note should be used for plants with installed bypass test capability. One channel may be bypassed for up to 12 hours for surveillance testing. ----------] ~~N~~Y.1 Place channel in trip. ~~OR~~ ~~N.2 Reduce THERMAL POWER to < [P-9].~~	72 hours ~~76 hours~~
[Z. Two or more Turbine Trip channels inoperable.	Z.1 Restore inoperable channels to OPERABLE status. ~~.~~	1 hour]
AA. Required Action and associated Completion Time of Condition Y [or Z] not met.	AA.1 Reduce THERMAL POWER to < [P-9].	4 hours

~~O~~BB. One train inoperable.	----------NOTE---------- One train may be bypassed for up to [4] hours for surveillance testing provided the other train is OPERABLE. ---------- ~~O~~BB.1 Restore train to OPERABLE status. ~~OR~~ ~~O.2 Be in MODE 3.~~	24 hours ~~30 hours~~
[CC. Two trains inoperable.	CC.1 Restore inoperable trains to OPERABLE status.	1 hour]

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~P~~DD. One RTB train inoperable.	----------NOTE---------- One train may be bypassed for up to 4 hours for surveillance testing, provided the other train is OPERABLE. ----------	
	~~P~~DD.1 Restore train to OPERABLE status.	[24] hours
	~~OR~~	
	~~P.2 Be in MODE 3.~~	~~[30] hours~~
[EE. Two RTB trains inoperable.	EE.1 Restore inoperable trains to OPERABLE status.	I hour]
~~Q~~FF. One or more channels inoperable.	~~Q~~FF.1 Verify interlock is in required state for existing unit conditions.	1 hour
	~~OR~~	
	~~Q.2 Be in MODE 3.~~	~~7 hours~~
~~R.~~GG One or more channels inoperable.	~~R~~GG.1 Verify interlock is in required state for existing unit conditions.	1 hour
	~~OR~~	
	~~R.2 Be in MODE 2.~~	~~7 hours~~

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
HH. Required Action and associated Completion Time of Condition GG not met.	HH.1 Be in MODE 2.	6 hours
~~S.~~ II. One trip mechanism inoperable for one RTB.	~~S~~II.1 Restore inoperable trip mechanism to OPERABLE status. ~~OR~~ ~~S.2 Be in MODE 3.~~	48 hours ~~54 hours~~
[JJ. One trip mechanism inoperable for two or more RTBs.	JJ.1 Restore inoperable trip mechanisms to OPERABLE status.	1 hour]
KK. Required Action and associated Completion Time of Condition B, [C,] F, [G,] H, [I,] BB, [CC], DD, [EE], FF, II [or JJ] not met.	KK.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

----------NOTE----------
Refer to Table 3.3.1-1 to determine which SRs apply for each RTS Function.

SURVEILLANCE		FREQUENCY
SR 3.3.1.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.1.2	----------NOTE---------- Not required to be performed until [12] hours after THERMAL POWER is ≥ 15% RTP.	

SURVEILLANCE	FREQUENCY

Compare results of calorimetric heat balance calculation to power range channel output. Adjust power range channel output if calorimetric heat balance calculations results exceed power range channel output by more than +2% RTP.	24 hours

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.3	----------NOTE---------- Not required to be performed until [24] hours after THERMAL POWER is ≥ [15]% RTP. ---------- Compare results of the incore detector measurements to Nuclear Instrumentation System (NIS) AFD. Adjust NIS channel if absolute difference is ≥ 3%.	31 effective full power days (EFPD)
SR 3.3.1.4	----------NOTE---------- This Surveillance must be performed on the reactor trip bypass breaker prior to placing the bypass breaker in service. ---------- Perform TADOT.	62 days on a STAGGERED TEST BASIS
SR 3.3.1.5	Perform ACTUATION LOGIC TEST.	92 days on a STAGGERED TEST BASIS

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.6	----------NOTE---------- Not required to be performed until [24] hours after THERMAL POWER is ≥ 50% RTP. ---------- Calibrate excore channels to agree with incore detector measurements.	[92] EFPD
SR 3.3.1.7	----------NOTE---------- Not required to be performed for source range instrumentation prior to entering MODE 3 from MODE 2 until 4 hours after entry into MODE 3. ---------- Perform COT.	184 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.8	----------NOTE---------- This Surveillance shall include verification that interlocks P-6 and P-10 are in their required state for existing unit conditions. ----------	
	Perform COT.	--------NOTE-------- Only required when not performed within previous 184 days ---------- Prior to reactor startup AND Four hours after reducing power below P-6 for source range instrumentation AND [Twelve] hours after reducing power below P-10 for power and intermediate range instrumentation AND Every 184 days thereafter

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.9	----------NOTE---------- Verification of setpoint is not required. ---------- Perform TADOT.	[92] days
SR 3.3.1.10	----------NOTE---------- This Surveillance shall include verification that the time constants are adjusted to the prescribed values. ---------- Perform CHANNEL CALIBRATION.	[18] months
SR 3.3.1.11	----------NOTE---------- Neutron detectors are excluded from CHANNEL CALIBRATION. ---------- Perform CHANNEL CALIBRATION.	[18] months
SR 3.3.1.12	---------- NOTE---------- This Surveillance shall include verification of Reactor Coolant System resistance temperature detector bypass loop flow rate. ---------- Perform CHANNEL CALIBRATION.	[18] months
SR 3.3.1.13	Perform COT.	18 months
SR 3.3.1.14	----------NOTE---------- Verification of setpoint is not required. ---------- Perform TADOT.	[18] months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.15	----------NOTE---------- Verification of setpoint is not required. ---------- Perform TADOT.	Prior to exceeding the [P-9] interlock whenever the unit has been in MODE 3, if not performed within the previous 31 days
SR 3.3.1.16	----------NOTE---------- Neutron detectors are excluded from response time testing. ---------- Verify RTS RESPONSE TIME is within limits.	[18] months on a STAGGERED TEST BASIS

Table 3.3.1-1 (page 1 of 7)
Reactor Trip System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL[j] TRIP SETPOINT
1. Manual Reactor Trip	1,2	2	B, C	SR 3.3.1.14	NA	NA
	3[a], 4[a], 5[a]	2	~~C~~D, E	SR 3.3.1.14	NA	NA
2. Power Range Neutron Flux						
a. High	1,2	4	~~D~~F, G	SR 3.3.1.1 SR 3.3.1.2 SR 3.3.1.7 SR 3.3.1.11 SR 3.3.1.16	≤ [111.2]% RTP	[109]% RTP
b. Low	1[b],2	4	~~E~~H, I	SR 3.3.1.1 SR 3.3.1.8 SR 3.3.1.11 SR 3.3.1.16	≤ [27.2]% RTP	[25]% RTP
3. Power Range Neutron Flux Rate						
a. High Positive Rate	1,2	4	~~E~~H, I	SR 3.3.1.7 SR 3.3.1.11	≤ [6.8]% RTP with time constant ≥ [2] sec	[5]% RTP with time constant ≥ [2] sec
b. High Negative Rate	1,2	4	~~E~~H, I	SR 3.3.1.7 SR 3.3.1.11 SR 3.3.1.16	≤ [6.8]% RTP with time constant ≥ [2] sec	[5]% RTP with time constant ≥ [2] sec
4. Intermediate Range Neutron Flux	1[b], 2[c]	2	~~F,G~~J, K	SR 3.3.1.1 SR 3.3.1.8 SR 3.3.1.11	≤ [31]% RTP	[25]% RTP

(a) With Rod Control System capable of rod withdrawal or one or more rods not fully insert.

(b) Below the P-10 (Power Range Neutron Flux) interlocks.

(c) Above the P-6 (Intermediate Range Neutron Flux) interlocks.

----------REVIEWER'S NOTE----------

(j) Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit.

Table 3.3.1-1 (page 2 of 7)
Reactor Trip System Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL[(i)] TRIP SETPOINT
5.	Source Range Neutron Flux	2[(d)]	2	~~H,I~~L, M	SR 3.3.1.1 SR 3.3.1.8 SR 3.3.1.11 SR 3.3.1.16	≤ [1.4 E5] cps	[1.0 E5] cps
		3[(a)], 4[(a)], 5[(a)]	2	~~I,J~~M, N	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.11 SR 3.3.1.16	≤ [1.4 E5] cps	[1.0 E5] cps
6.	Overtemperature ΔT	1,2	[4]	~~E~~H	SR 3.3.1.1 SR 3.3.1.3 SR 3.3.1.6 SR 3.3.1.7 SR 3.3.1.12 SR 3.3.1.16	Refer to Note 1 (Page 3.3.1-19)	Refer to Note 1 (Page 3.3.1-19)
7.	Overpower ΔT	1,2	[4]	~~E~~H	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.12 SR 3.3.1.16	Refer to Note 2 (Page 3.3.1-20)	Refer to Note 2 (Page 3.3.1-20)
8.	Pressurizer Pressure						
	a. Low	1[(f)]	[4]	~~K~~P	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≥ [1886] psig	[1900] psig
	b. High	1,2	[4]	~~E~~H	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≤ [2396] psig	[2385] psig
9.	Pressurizer Water Level - High	1[(e)]	3	~~K~~P	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10	≤ [93.8]%	[92]%
10.	Reactor Coolant Flow - Low	1[(f)]	3 per loop	~~K~~P	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≥ [89.2]%	[90]%

(a) With Rod Control System capable of rod withdrawal or one or more rods not fully insert.

(d) Below the P-6 (Intermediate Range Neutron Flux) interlocks.

(e) Above the P-7 (Low Power Reactor Trips Block) interlock.

(f) Above the P-8 (Power Range Neutron Flux) interlock.

----------REVIEWER'S NOTE----------

(j) Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit.

Table 3.3.1-1 (page 3 of 7)
Reactor Trip System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL[j] TRIP SETPOINT
11. Reactor Coolant Pump (RCP) BreakerPosition						
a. Single Loop	1[f]	1 per RCP	~~L~~S	SR 3.3.1.14	NA	NA
b. Two Loops	1[g]	1 per RCP	~~M~~V	SR 3.3.1.14	NA	NA
12. Undervoltage RCPs	1[e]	[3] per bus	~~K~~P	SR 3.3.1.9 SR 3.3.1.10 SR 3.3.1.16	≥ [4760] V	[4830] V
13. Underfrequency RCPs	1[e]	[3] per bus	~~K~~P	SR 3.3.1.9 SR 3.3.1.10 SR 3.3.1.16	≥ [57.1] Hz	[57.5] Hz
14. Steam Generator (SG) Water Level - Low Low	1,2	[4 per SG]	~~E~~H	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≥ [30.4]%	[32.3]%
15. SG Water Level - Low	1,2	2 per SG	~~E~~H	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≥ [30.4]%	[32.3]%
Coincident with Steam Flow/Feedwater Flow Mismatch	1,2	2 per SG	~~E~~H	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≤ [42.5]% full steam flow at RTP	[40]% full steam flow at RTP
16. Turbine Trip						
a. Low Fluid Oil Pressure	1[h]	3	~~N~~Y	SR 3.3.1.10 SR 3.3.1.15	≥ [750] psig	[800] psig
b. Turbine Stop Valve Closure	1[h]	4	~~N~~Y	SR 3.3.1.10 SR 3.3.1.15	≥ [1]% open	[1]% open

(e) Above the P-7 (Low Power Reactor Trips Block) interlock.

(f) Above the P-8 (Power Range Neutron Flux) interlock.

(g) Above the P-7 (Low Power Reactor Trips Block) interlock and below the P-8 (Power Range Neutron Flux) Interlock

(h) Above the P-9 (Power Range Neutron Flux) interlock.

----------REVIEWER'S NOTE----------

(j) Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit.

Table 3.3.1-1 (page 4 of 7)
Reactor Trip System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL[j] TRIP SETPOINT
17. Safety Injection (SI) Input from Engineered Safety Feature Actuation System (ESFAS)	1,2	2 trains	~~O~~BB	SR 3.3.1.14	NA	NA
18. Reactor Trip System Interlocks						
a. Intermediate Range Neutron Flux, P-6	2[d]	2	~~Q~~FF	SR 3.3.1.11 SR 3.3.1.13	≥ [6E-11] amp	[1E-10] amp
b. Low Power Reactor Trips Block, P-7	1	1 per train	~~R~~GG	SR 3.3.1.5	NA	NA
c. Power Range Neutron Flux, P-8	1	4	~~R~~GG	SR 3.3.1.11 SR 3.3.1.13	≤ [50.2]% RTP	[48]% RTP
d. Power Range Neutron Flux, P-9	1	4	~~R~~GG	SR 3.3.1.11 SR 3.3.1.13	≤ [52.2]% RTP	[50]% RTP
e. Power Range Neutron Flux, P-10	1,2	4	~~Q~~FF	SR 3.3.1.11 SR 3.3.1.13	≥ [7.8]% RTP and ≤ [12.2]% RTP	[10]% RTP
f. Turbine Impulse Pressure, P-13	1	2	~~R~~GG	[SR 3.3.1.1] SR 3.3.1.10 SR 3.3.1.13	≤ [12.2]% turbine power	10]% turbine power
19. Reactor Trip Breakers[i] (RTBs)	1,2	2 trains	~~P~~DD	SR 3.3.1.4	NA	NA
	3[b], 4[b], 5[b]	2 trains	~~C~~D	SR 3.3.1.4	NA	NA

(b) With Rod Control System capable of rod withdrawal or one or more rods not fully inserted.

(d) Below the P-6 (Intermediate Range Neutron Flux) interlocks.

(i) Including any reactor trip bypass breakers that are racked in and closed for bypassing an RTB.

----------REVIEWER'S NOTE----------

(j) Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit.

Table 3.3.1-1 (page 5 of 7)
Reactor Trip System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL[j] TRIP SETPOINT
20. Reactor Trip Breaker Undervoltage and Shunt Trip Mechanisms	1,2	1 each per RTB	~~S~~II	SR 3.3.1.4	NA	NA
	3[b], 4[b], 5[b]	1 each per RTB	~~C~~D	SR 3.3.1.4	NA	NA
21. Automatic Trip Logic	1,2	2 trains	~~O~~BB	SR 3.3.1.5	NA	NA
	3[b], 4[b], 5[b]	2 trains	~~C~~D	SR 3.3.1.5	NA	NA

----------REVIEWER'S NOTE----------

(b) With Rod Control System capable of rod withdrawal or one or more rods not fully inserted.

(j) Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit.

Table 3.3.1-1 (page 6 of 7)
Reactor Trip System Instrumentation

Note 1: Overtemperature ΔT

The Overtemperature ΔT Function Allowable Value shall not exceed the following nominal Trip Setpoint by more than [3.8]% of ΔT span.

$$\Delta T \frac{(1+T_1S)}{(1+T_2S)}\left(\frac{1}{1+T_3S}\right) \leq \Delta T_Q \left\{K_1 - K_2 \frac{(1+T_4S)}{(1+T_5S)}\left[T \frac{1}{(1+T_6S)} - T'\right] + K_3 (P - P') - f_1(\Delta I)\right\}$$

Where: ΔT is measured RCS ΔT,°F.
ΔT_Q is the indicated ΔT at RTP,°F.
s is the Laplace transform operator, sec^{-1}.
T is the measured RCS average temperature,°F.
T' is the nominal T_{avg} at RTP, ≤ [*]°F.

P is the measured pressurizer pressure, psig
P' is the nominal RCS operating pressure, ≥ [*] psig

$K_1 \leq$ [*]	$K_2 \geq$ [*]/°F	$K_3 \geq$ [*]/psig
$T_1 \geq$ [*] sec	$T_2 \leq$ [*] sec	$T_3 \leq$ [*] sec
$T_4 \geq$ [*] sec	$T_5 \leq$ [*] sec	$T_6 \leq$ [*] sec

$f_1(\Delta I)$ = [*] {[*] - (q_t - q_b)} when $q_t - q_b \leq$ [*]% RTP
0% of RTP when [*]% RTP < $q_t - q_b \leq$ [*]% RTP
[*] {($q_t - q_b$) - [*]} when $q_t - q_b >$ [*]% RTP

Where q_t and q_b are percent RTP in the upper and lower halves of the core, respectively, and $q_t + q_b$ is the total THERMAL POWER in percent RTP.

*These values denoted with [*] are specified in the COLR.

Table 3.3.1-1 (page 7 of 7)
Reactor Trip System Instrumentation

Note 2: Overpower ΔT

The Overpower ΔT Function Allowable Value shall not exceed the following nominal Trip Setpoint by more than [3]% of ΔT span.

$$\Delta T \frac{(1+T_1 S)}{(1+T_2 S)}\left(\frac{1}{1+T_3 S}\right) \le \Delta T_Q \left\{K_4 - K_5 \frac{T_7 S}{1+T_7 S}\left(\frac{1}{1+T_6 S}\right) T - K_6 \left[T \frac{1}{1+T_6 S} - T''\right] - f_2(\Delta I)\right\}$$

Where: ΔT is measured RCS ΔT,°F.
ΔT_Q is the indicated ΔT at RTP,°F.
s is the Laplace transform operator, sec^{-1}.
T is the measured RCS average temperature,°F.
T" is the nominal T_{avg} at RTP, ≤ [*]°F.

K_4 ≤ [*]	K_5 ≥ [*]/°F for increasing T_{avg} [*]/°F for decreasing T_{avg}	K_6 ≥ [*]/°F when T > T" [*]/°F when T ≤ T"
T_1 ≥ [*] sec	T_2 ≤ [*] sec	T_3 ≤ [*] sec
T_6 ≤ [*] sec	T_7 ≥ [*] sec	

$f_2(\Delta I)$ = [*]

*These values denoted with [*] are specified in the COLR.

Comment: Conditions M, N and O are default Conditions and are therefore excluded.

3.3 INSTRUMENTATION

3.3.2 Engineered Safety Feature Actuation System (ESFAS) Instrumentation

LCO 3.3.2 The ESFAS instrumentation for each Function in Table 3.3.2-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.2-1.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one or more required channels or trains inoperable.	A.1 Enter the Condition referenced in Table 3.3.2-1 for the channel(s) or train(s).	Immediately
B. One channel or train inoperable.	B.1 Restore channel or train to OPERABLE status. ~~OR~~ ~~B.2.1 Be in MODE 3.~~ ~~AND~~ ~~B.2.2 Be in MODE 5.~~	48 hours ~~54 hours~~ ~~84 hours~~
[C. Two channels or trains inoperable.	C.1 Restore at least one channel or train to OPERABLE status.	1 hour]

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~C~~D. One train inoperable.	----------NOTE---------- One train may be bypassed for up to [4] hours for surveillance testing provided the other train is OPERABLE. ---------- ~~C~~D.1 Restore train to OPERABLE status. ~~OR~~ ~~C.2.1 Be in MODE 3.~~ ~~AND~~ ~~C.2.2 Be in MODE 5.~~	24 hours ~~30 hours~~ ~~60 hours~~
[E. Two trains inoperable.	E.1 Restore at least one train to OPERABLE status.	1 hour]
~~D~~F. One channel inoperable.	[----------NOTE---------- The inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels. ---------- ----------REVIEWER'S NOTE---------- The below Note should be used for plants with installed bypass test capability: One channel may be bypassed for up to 12 hours for surveillance testing. ----------] ~~D~~F.1 Place channel in trip.	72 hours

	~~OR~~	

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
[G. Two or more required channels inoperable or one channel inoperable in more than one loop, steam line, or stream generator.	G.1 ~~D.2.1 Be in MODE 3.~~ ~~AND~~ ~~D.2.2 Be in MODE 4.~~ Restore inoperable channels to OPERABLE status.	~~78 hours~~ ~~84 hours~~1 hour]
~~E~~H. One Containment Pressure channel inoperable.	[----------NOTE---------- One additional channel may be bypassed for up to 12 hours for surveillance testing of other channels. ---------- ----------REVIEWER'S NOTE---------- The below Note should be used for plants with installed bypass test capability. One channel may be bypassed for up to 12 hours for surveillance testing. ----------] ~~E~~H.1 Place channel in bypass. ~~OR~~ ~~E.2.1 Be in MODE 3.~~ ~~AND~~ ~~E.2.2 Be in MODE 4.~~	 72 hours ~~78 hours~~ ~~84 hours~~
[I. Two or more Containment Pressure channels inoperable.	I.1 Restore inoperable channels to OPERABLE status.	1 hour]

~~F~~J. One channel or train inoperable.	~~F~~J.1 Restore channel or train to OPERABLE status. ~~OR~~ ~~F.2.1 Be in MODE 3.~~ ~~AND~~	48 hours ~~54 hours~~

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	~~F.2.2 Be in MODE 4.~~	~~60 hours~~
[K. Two or more required channels or two trains inoperable.	K.1 Restore inoperable channels or trains to OPERABLE status.	1 hour]
~~G~~L. One train inoperable.	----------NOTE---------- One train may be bypassed for up to [4] hours for surveillance testing provided the other train is OPERABLE. ---------- ~~G~~L.1 Restore train to OPERABLE status. ~~OR~~ ~~G.2.1 Be in MODE 3.~~ ~~AND~~ ~~G.2.2 Be in MODE 4.~~	24 hours ~~30 hours~~ ~~36 hours~~
[M. Two trains inoperable.	M.1 Restore at least one train to OPERABLE status.	1 hour]
~~H~~N. One train inoperable.	----------NOTE---------- One train may be bypassed for up to [4] hours for surveillance testing provided the other train is OPERABLE. ---------- ~~H~~N.1 Restore train to OPERABLE status.	24 hours

	~~OR~~ ~~H.2 Be in MODE 3.~~	~~[30 hours~~
[O. Two trains inoperable.	O.1 Restore at least one train to OPERABLE status.	1 hour]

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~I~~P. One channel inoperable.	[----------NOTE---------- The inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels. ---------- ----------REVIEWER'S NOTE---------- The below Note should be used for plants with installed bypass test capability. One channel may be bypassed for up to 12 hours for surveillance testing. ----------] ~~I~~P.1 Place channel in trip. ~~OR~~ ~~I.2 Be in MODE 3.~~	72 hours ~~78 hours~~
[Q. Two or more channels inoperable.	Q.1 Restore inoperable channels to OPERABLE status.	1 hour]
R~~J.~~ One Main Feedwater Pumps trip channel inoperable.	R~~J.~~1 Restore channel to OPERABLE status. ~~OR~~ ~~J.2 Be in MODE 3.~~	48 hours ~~54 hours~~
[S. Two or more Main Feedwater Pumps trip channels inoperable.	S.1 Restore inoperable channels to OPERABLE status.	1 hour]

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~K~~T. One channel inoperable.	[----------NOTE---------- One additional channel may be bypassed for up to [4] hours for surveillance testing. ---------- ----------REVIEWER'S NOTE---------- The below Note should be used for plants with installed bypass test capability: One channel may be bypassed for up to 12 hours for surveillance testing. ----------]	
	~~K~~T.1 Place channel in bypass.	[6] hours
	~~OR~~	
	~~K.2.1 Be in MODE 3.~~	~~[12] hours~~
	~~AND~~	
	~~K.2.2 Be in MODE 5.~~	~~[42] hours~~[
[U. Two or more channels inoperable.	U.1 Restore inoperable channels to OPERABLE status.	1 hour]
~~L~~V. One or more channels inoperable.	~~L~~V.1 Verify interlock is in required state for existing unit condition.	1 hour
	~~OR~~	~~7 hours~~
	~~L.2.1 Be in MODE 3.~~	
	~~AND~~	~~13 hours~~[
	~~L.2.2 Be in MODE 4.~~	
W. Required Action and	W.1 Be in MODE 3.	6 hours

associated Completion Time of Conditions B, [C,] D, [E,] T or [U] not met.	AND W.2 Be in MODE 5.	 36 hours
X. Required Action and associated Completion Time of Conditions F, [G,] H, [I,] J, [K,] L, [M] or V not met.	X.1 Be in MODE 3. AND X.2 Be in MODE 4.	6 hours 12 hours
Y. Required Action and associated Completion Time of Conditions N, [O,] P, [Q,] R or [S] not met.	Y.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

----------NOTE----------
Refer to Table 3.3.2-1 to determine which SRs apply for each ESFAS Function.

SURVEILLANCE		FREQUENCY
SR 3.3.2.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.2.2	Perform ACTUATION LOGIC TEST.	92 days on a STAGGERED TEST BASIS
SR 3.3.2.3	----------NOTE---------- The continuity check may be excluded. --- Perform ACTUATION LOGIC TEST.	31 days on a STAGGERED TEST BASIS
----------REVIEWER'S NOTE---------- The Frequency remains at 31 days on a STAGGERED TEST BASIS for plants with a Relay Protection System. --- SR 3.3.2.4	Perform MASTER RELAY TEST.	92 days on a STAGGERED TEST BASIS
SR 3.3.2.5	Perform COT.	184 days
SR 3.3.2.6	Perform SLAVE RELAY TEST.	[92] days
SR 3.3.2.7	----------NOTE---------- Verification of relay setpoints not required. --- Perform TADOT.	[92] days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.2.8	----------NOTE---------- Verification of setpoint not required for manual initiation functions. ---------- Perform TADOT.	[18] months
SR 3.3.2.9	----------NOTE---------- This Surveillance shall include verification that the time constants are adjusted to the prescribed values. ---------- Perform CHANNEL CALIBRATION.	[18] months
SR 3.3.2.10	----------NOTE---------- Not required to be performed for the turbine driven AFW pump until [24] hours after SG pressure is ≥ [1000] psig. ---------- Verify ESFAS RESPONSE TIMES are within limit.	[18] months on a STAGGERED TEST BASIS
SR 3.3.2.11	----------NOTE---------- Verification of setpoint not required. ---------- Perform TADOT.	Once per reactor trip breaker cycle

Table 3.3.2-1 (page 1 of 8)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL[(j)] TRIP SETPOINT
1. Safety Injection						
a. Manual Initiation	1,2,3,4	2	B,C	SR 3.3.2.8	NA	NA
b. Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	~~C~~D,E	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA	NA
c. Containment Pressure - High 1	1,2,3	3	~~D~~F,G	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ [3.86] psig	[3.6] psig
d. Pressurizer Pressure - Low	1,2,3[(a)]	[3]	~~D~~F,G	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥ [1839] psig	[1850] psig
e. Steam Line Pressure						
(1) Low	1,2,3[(a)]	3 per steam line	~~D~~F,G	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥ [635][(b)] psig	[675][(b)] psig
(2) High Differential Pressure Between Steam Lines	1,2,3	3 per steam line	~~D~~F,G	[SR 3.3.2.1] SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ [106] psig	[97] psig

(a) Above the P-11 (Pressurizer Pressure) interlock.

(b) Time constants used in the lead/lag controller are $t_1 \geq$ [50] seconds and $t_2 \leq$ [5] seconds.

----------REVIEWER'S NOTE----------

(j) Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit.

Table 3.3.2-1 (page 2 of 8)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL[j] TRIP SETPOINT
1. Safety Injection						
f. High Steam Flow in Two Steam Lines	1,2,3 [c]	2 per steam line	~~D~~F,G	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	(d)	(e)
Coincident with T_{avg} - Low Low	1,2,3 [c]	1 per loop	~~D~~F,G	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥ [550.6]°F	[553]°F
g. High Steam Flow in Two Steam Lines	1,2,3 [c]	2 per steam line	~~D~~F,G	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	(d)	(e)
Coincident with Steam Line Pressure - Low	1,2,3 [c]	1 per steam line	~~D~~F,G	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥ [635] [b] psig	[675] psig
2. Containment Spray						
a. Manual Initiation	1,2,3,4	2 per train, 2 trains	B,C	SR 3.3.2.8	NA	NA
b. Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	~~C~~D,E	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA	NA
c. Containment Pressure High - 3 (High High)	1,2,3	4	~~E~~H,I	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ [12.31] psig	[12.05] psig

(c) Above the P-12 (T_{avg} - Low Low) interlock.

(d) Less than or equal to a function defined as ΔP corresponding to [44]% full steam flow below [20]% load, and ΔP increasing linearly from [44]% full steam flow at [20]% load to [114]% full steam flow at [100]% load, and ΔP corresponding to [114]% full steam flow above 100% load.

(e) Less than or equal to a function defined as ΔP corresponding to [40]% full steam flow between [0]% and [20]% load and then a ΔP increasing linearly from [40]% steam flow at [20]% load to [110]% full steam flow at [100]% load.

----------REVIEWER'S NOTE----------

(j) Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit.

Table 3.3.2-1 (page 3 of 8)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL[(j)] TRIP SETPOINT
2. Containment Spray						
d. Containment Pressure High - 3 (Two Loop Plants)	1,2,3	[3] sets of [2]	~~E~~H,I	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ [12.31] psig	[12.05] psig
3. Containment Isolation						
a. Phase A Isolation						
(1) Manual Initiation	1,2,3,4	2	B,C	SR 3.3.2.8	NA	NA
(2) Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	~~C~~D,E	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA	NA
(3) Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					
b. Phase B Isolation						
(1) Manual Initiation	1,2,3,4	2 per train, 2 trains	B,C	SR 3.3.2.8	NA	NA
(2) Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	~~C~~D,E	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA	NA
(3) Containment Pressure High - 3 (High High)	1,2,3	[4]	~~E~~H,I	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ [12.31] psig	[12.05] psig

----------REVIEWER'S NOTE----------
(j) Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit.

Table 3.3.2-1 (page 4 of 8)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL[(j)] TRIP SETPOINT
4. Steam Line Isolation						
a. Manual Initiation	1,2 [(h)],3 [(h)]	2	~~F~~J,K	SR 3.3.2.8	NA	NA
b. Automatic Actuation Logic and Actuation Relays	1,2 [(h)],3 [(h)]	2 trains	~~G~~L,M	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA	NA
c. Containment Pressure - High 2	1, 2 [(h)], 3 [(h)]	[4]	~~D~~F,G	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ [6.61] psig	[6.35] psig
d. Steam Line Pressure						
(1) Low	1, 2 [(h)], 3 [(a) (h)]	3 per steam line	~~D~~F,G	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥ [635][(b)] psig	[675][(b)] psig
(2) Negative Rate - High	3 [(f) (h)]	3 per steam line	~~D~~F,G	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ [121.6][(g)] psi	[110][(g)] psi

(a) Above the P-11 (Pressurizer Pressure) interlock.

(b) Time constants used in the lead/lag controller are $t_1 \geq$ [50] seconds and $t_2 \leq$ [5] seconds.

(f) Below the P-11 (Pressurizer Pressure) interlock.

(g) Time constant utilized in the rate/lag controller is ≥ [50] seconds.

(h) Except when all MSIVs are closed and [de-activated].

----------REVIEWER'S NOTE----------

(j) Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit.

Table 3.3.2-1 (page 5 of 8)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL[(i)] TRIP SETPOINT
4. Steam Line Isolation						
e. High Steam Flow in Two Steam Lines	1, 2 [(h)], 3 [(h)]	2 per steam line	~~D~~F,G	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	(d)	(e)
Coincident with T_{avg} - Low Low	1, 2 [(h)], 3 [(c) (h)]	1 per loop	~~D~~F,G	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥ [550.6]°F	[553]°F
f. High Steam Flow in Two Steam Lines	1, 2 [(h)], 3 [(h)]	2 per steam line	~~D~~F,G	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	(d)	(e)
Coincident with Steam Line Pressure - Low	1,2,[(h)] 3 [(h)]	1 per steam line	~~D~~F,G	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥ [635][(b)] psig	[675][(b)] psig
g. High Steam Flow	1,2 [(h)], 3 [(h)]	2 per steam line	~~D~~F,G	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ [25]% of full steam flow at no load steam pressure	[ ] full steam flow at no load steam pressure
Coincident with Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					
and						
Coincident with T_{avg} - Low Low	1,2 [(h)], 3 [(c) (h)]	[2] per loop	~~D~~F,G	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥ [550.6]°F	[553]°F

(b) Time constants used in the lead/lag controller are $t_1 \geq$ [50] seconds and $t_2 \leq$ [5] seconds.

(c) Above the P-12 (T_{avg} - Low Low) interlock.

(d) Less than or equal to a function defined as ΔP corresponding to [44]% full steam flow below [20]% load, ΔP increasing linearly from [44]% full steam flow at [20]% load to [114]% full steam flow at [100]% load, and ΔP corresponding to [114]% full steam flow above 100% load.

(e) Less than or equal to a function defined as ΔP corresponding to [40]% full steam flow between [0]% and [20]% load and then a ΔP increasing linearly from [40]% steam flow at [20]% load to [110]% full steam flow at [100]% load.

(h) Except when all MSIVs are closed and [de-activated].

----------REVIEWER'S NOTE----------

(j) Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit.

Table 3.3.2-1 (page 6 of 8)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL[i] TRIP SETPOINT
4. Steam Line Isolation						
h. High High Steam Flow	1,2 [h],3 [h]	2 per steam line	~~D~~F,G	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ [130]% of full steam flow at full load steam pressure	[ ] of full steam flow at full load steam pressure
Coincident with Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					
5. Turbine Trip and Feedwater Isolation						
a. Automatic Actuation Logic and Actuation Relays	1, 2 [i], [3][i]	2 trains	~~H[G]~~N,O[L, M]	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA	NA
b. SG Water Level - High High (P-14)	1,2 [i],[3][i]	[3] per SG	~~I[D]~~P,Q[F,G]	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ [84.2]%	[82.4]%
c. Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					
6. Auxiliary Feedwater						
a. Automatic Actuation Logic and Actuation Relays (Solid State Protection System)	1,2,3	2 trains	~~G~~L,M	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA	NA
b. Automatic Actuation Logic and Actuation Relays (Balance of Plant ESFAS)	1,2,3	2 trains	~~G~~L,M	SR 3.3.2.3	NA	NA

(h) Except when all MSIVs are closed and [de-activated].

(i) Except when all MFIVs, MFRVs, [and associated bypass valves] are closed and [de-activated] [or isolated by a closed manual valve].

----------REVIEWER'S NOTE----------

(j) Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit.

Table 3.3.2-1 (page 7 of 8)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL[(i)] TRIP SETPOINT
6. Auxiliary Feedwater						
c. SG Water Level - Low Low	1,2,3	[3] per SG	~~D~~F,G	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥ [30.4]%	[32.2]%
d. Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					
e. Loss of Offsite Power	1,2,3	[3] per bus	~~F~~J,K	SR 3.3.2.7 SR 3.3.2.9 SR 3.3.2.10	≥ [2912] V with ≤ 0.8 sec time delay	[2975] V with ≤ 0.8 sec time delay
f. Undervoltage Reactor Coolant Pump	1,2	[3] per bus	~~I~~P,Q	SR 3.3.2.7 SR 3.3.2.9 SR 3.3.2.10	≥ [69]% bus voltage	[70]% bus voltage
g. Trip of all Main Feedwater Pumps	1,2	[2] per pump	~~J~~R,S	SR 3.3.2.8 SR 3.3.2.9 SR 3.3.2.10	≥ [ ] psig	[ ] psig
h. Auxiliary Feedwater Pump Suction Transfer on Suction Pressure - Low	1,2,3	[2]	~~F~~J,K	SR 3.3.2.1 SR 3.3.2.7 SR 3.3.2.9	≥ [20.53] [psia]	[ ] [psia]
7. Automatic Switchover to Containment Sump						
a. Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	~~C~~D,E	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA	NA
b. Refueling Water Storage Tank (RWST) Level - Low Low	1,2,3,4	4	~~K~~T,U	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥ [15]% and ≤ [ ]%	[ ]% and [ ]%
Coincident with Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					

----------REVIEWER'S NOTE----------
(j) Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit.

Table 3.3.2-1 (page 8 of 8)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL[(i)] TRIP SETPOINT
7. Automatic Switchover to Containment Sump						
c. RWST Level - Low Low	1,2,3,4	4	~~K~~T,U	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥ [15]%	[18]%
Coincident with Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					
and						
Coincident with Containment Sump Level - High	1,2,3,4	4	~~K~~T,U	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥ [30] in. above el. [703] ft	[ ] in. above el. [ ]ft
8. ESFAS Interlocks						
a. Reactor Trip, P-4	1,2,3	1 per train, 2 trains	~~F~~J,K	SR 3.3.2.11	NA	NA
b. Pressurizer Pressure, P-11	1,2,3	3	~~L~~V	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9	≤ [1996] psig	[ ] psig
c. T_{avg} - Low Low, P-12	1,2,3	[1] per loop	~~L~~V	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9	≥ [550.6]°F	[553]° F

----------REVIEWER'S NOTE----------

(j) Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit.

Comment: RA B.1 has an immediately perform and RA B.2.2 contains a periodically performed Surveillance. These Condtions are therefore excluded.

3.3 INSTRUMENTATION

3.3.9 Boron Dilution Protection System (BDPS)

LCO 3.3.9 Two trains of the BDPS shall be OPERABLE.

APPLICABILITY: MODES [2,] 3, 4, and 5.

----------NOTE----------
The boron dilution flux doubling signal may be blocked in MODES 2 and 3 during reactor startup.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One train inoperable.	A.1 Restore train to OPERABLE status.	72 hours
[B. Two trains inoperable.	B.1 ----------NOTE---------- Plant temperature changes are allowed provided the temperature change is accounted for in the calculated SDM. ---------- Suspend operations involving positive reactivity additions. AND B.2 Restore inoperable trains to OPERABLE status.	Immediately 1 hour
CB.[Two trains inoperable. OR]	CB.1 ----------NOTE---------- Plant temperature changes are allowed provided the temperature change is	

CONDITION	REQUIRED ACTION	COMPLETION TIME
Required Action and associated Completion Time of Condition A [or B] not met.	accounted for in the calculated SDM. ---------- Suspend operations involving positive reactivity additions. AND C~~B~~.2.1 Restore one train to OPERABLE status. OR	 Immediately 1 hour

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	CB.2.2.1 Close unborated water source isolation valves. AND	1 hour
	CB.2.2.2 Perform SR 3.1.1.1.	1 hour AND Once per 12 hours thereafter

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.9.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.9.2	Perform COT.	[184] days
SR 3.3.9.3	----------NOTE---------- Neutron detectors are excluded from CHANNEL CALIBRATION. ---------- Perform CHANNEL CALIBRATION.	 [18] months

Comment: There is an implied "restore" action with an "Immediately" completion Time for Condition A. Since the RIST cannot be applied to a Required Action with an "Immediately" Completion Time, no changes are applied. Condition D is a default Condition and is excluded.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.9 Pressurizer

LCO 3.4.9 The pressurizer shall be OPERABLE with:

a. Pressurizer water level ≤ [92]% and

b. [Two groups of] pressurizer heaters OPERABLE with the capacity [of each group] ≥ [125] kW [and capable of being powered from an emergency power supply].

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Pressurizer water level not within limit.	A.1 Be in MODE 3. AND A.2 Fully insert all rods. AND A.3 Place Rod Control System in a condition incapable of rod withdrawal. AND A.4 Be in MODE 4.	6 hours 6 hours 6 hours 12 hours
B. One [required] group of pressurizer heaters inoperable.	B.1 Restore [required] group of pressurizer heaters to OPERABLE status.	72 hours
[C. Two [required] group of pressurizer heaters	CB.1 Restore [required] inoperable pressurizer	1 hour

CONDITION	REQUIRED ACTION	COMPLETION TIME
inoperable.	heaters to OPERABLE status.	
DC. Required Action and associated Completion Time of Condition B [or C] not met.	CD.1 Be in MODE 3. AND	6 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	DC.2 Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.9.1	Verify pressurizer water level is ≤ [92]%.	12 hours
----------REVIEWER'S NOTE---------- The frequency for performing Pressurizer heater capacity testing shall be either 18 months or 92 days, depending on whether or not the plant has dedicated safety-related heaters. For dedicated safety-related heaters, which do not normally operate, 92 days is applied. For non-dedicated safety-related heaters, which normally operate, 18 months is applied. ----------		
SR 3.4.9.2	Verify capacity of each required group of pressurizer heaters is ≥ [125] kW.	[18] months
SR 3.4.9.3	[Verify required pressurizer heaters are capable of being powered from an emergency power supply.	[18] months]

Comment: Condition A and RAs B.1, B.2, C.1, E.1 and E.2 contains actions that will not result in plant shutdown and Condition D and G are default Conditions. Therefore these are excluded.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.11 Pressurizer Power Operated Relief Valves (PORVs)

LCO 3.4.11 Each PORV and associated block valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each PORV and each block valve.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more PORVs inoperable and capable of being manually cycled.	A.1 Close and maintain power to associated block valve.	1 hour
B. One [or two] PORV[s] inoperable and not capable of being manually cycled.	B.1 Close associated block valve[s]. AND B.2 Remove power from associated block valve[s]. AND B.3 Restore PORV[s] to OPERABLE status.	1 hour 1 hour 72 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One [or two] block valve(s) inoperable.	----------NOTE---------- Required Actions C.1 and C.2 do not apply when block valve is inoperable solely as a result of complying with Required Actions B.2 or E.2. ----------	
	C.1 Place associated PORV in manual control. AND	1 hour
	C.2 Restore block valve to OPERABLE status.	72 hours
D. Required Action and associated Completion Time of Condition A, B, or C not met.	D.1 Be in MODE 3. AND	6 hours
	D.2 Be in MODE 4.	12 hours
E. Two [or three] PORVs inoperable and not capable of being manually cycled.	E.1 Close associated block valves. AND	1 hour
	E.2 Remove power from associated block valves. AND	1 hour
	[E.3 Be in MODE 3. AND	6 hours
	E.4 Be in MODE 4.	12 hours]
	[E.3 Restore inoperable PORVs to OPERABLE status.	1 hour

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Two [or three] block valves inoperable.	----------NOTE---------- Required Action F.1 does not apply when block valve is inoperable solely as a result of complying with Required Actions B.2 or E.2. ---------- F.1 Restore one block valve to OPERABLE status [if three block valves are inoperable].	2 hours]
G. Required Action and associated Completion Time of Condition [E or] F not met.	G.1 Be in MODE 3. AND G.2 Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.11.1	----------NOTES---------- 1. Not required to be performed with block valve closed in accordance with the Required Actions of this LCO. 2. Only required to be performed in MODES 1 and 2. ---------- Perform a complete cycle of each block valve.	92 days
SR 3.4.11.2	----------NOTE---------- Only required to be performed in MODES 1 and 2. ---------- Perform a complete cycle of each PORV.	[18] months
SR 3.4.11.3	[Perform a complete cycle of each solenoid air control valve and check valve on the air accumulators in PORV control systems.	[18] months]
SR 3.4.11.4	[Verify PORVs and block valves are capable of being powered from emergency power sources.	[18] months]

Comment: While Condition A represents a variable outside the limit, the Accumulator could be substituted as a surrogate in an RICT calculation. Condition D is a default Condition and is therefore excluded.

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.1 Accumulators

LCO 3.5.1 [Four] ECCS accumulators shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODE 3 with RCS pressure > [1000] psig.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One accumulator inoperable due to boron concentration not within limits.	A.1 Restore boron concentration to within limits.	72 hours
B. One accumulator inoperable for reasons other than Condition A.	B.1 Restore accumulator to OPERABLE status.	24 hours
[C. Two or more accumulators inoperable.	C.1 Restore inoperable accumulators to OPERABLE status.	1 hour
DC. Required Action and associated Completion Time of Condition A or B not met.	DC.1 Be in MODE 3. AND DC.2 Reduce RCS pressure to ≤ [1000] psig.	6 hours 12 hours
[ED. Two or more accumulators inoperable.	ED.1 Enter LCO 3.0.3.	Immediately]

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.1.1	Verify each accumulator isolation valve is fully open.	12 hours
SR 3.5.1.2	Verify borated water volume in each accumulator is ≥ [7853 gallons ( )% and ≤ 8171 gallons ( )%].	12 hours
SR 3.5.1.3	Verify nitrogen cover pressure in each accumulator is ≥ [385] psig and ≤ [481] psig.	12 hours
SR 3.5.1.4	Verify boron concentration in each accumulator is ≥ [1900] ppm and ≤ [2100] ppm.	31 days AND --------NOTE-------- Only required to be performed for affected accumulators ---------- Once within 6 hours after each solution volume increase of ≥ [[ ] gallons, ( )% of indicated level] that is not the result of addition from the refueling water storage tank
SR 3.5.1.5	Verify power is removed from each accumulator isolation valve operator when RCS pressure is ≥ [2000] psig.	31 days

Comment: Condition C is a default Condition and is therefore excluded.

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.2 ECCS - Operating

LCO 3.5.2 Two ECCS trains shall be OPERABLE.

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

[1. In MODE 3, both safety injection (SI) pump flow paths may be isolated by closing the isolation valves for up to 2 hours to perform pressure isolation valve testing per SR 3.4.14.1.

2. In MODE 3, ECCS pumps may be made incapable of injecting to support transition into or from the Applicability of LCO 3.4.12, "Low Temperature Overpressure Protection (LTOP) System," for up to 4 hours or until the temperature of all RCS cold legs exceeds [375°F] [Low Temperature Overpressure Protection (LTOP) arming temperature specified in the PTLR plus [25]°F], whichever comes first.]

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more trains inoperable.	A.1 Restore train(s) to OPERABLE status.	72 hours
[B. Less than 100% of the ECCS flow equivalent to a single OPERABLE ECCS train available.	B.1 Restore ECCS flow equivalent to 100% of a single OPERABLE ECCS train.	1 hour
CB. Required Action and associated Completion Time not met.	CB.1 Be in MODE 3. AND CB.2 Be in MODE 4.	6 hours 12 hours

CONDITION	REQUIRED ACTION	COMPLETION TIME
[D~~C~~. Less than 100% of the ECCS flow equivalent to a single OPERABLE ECCS train available.	D~~C~~.1 Enter LCO 3.0.3.	Immediately]

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.2.1	[Verify the following valves are in the listed position with power to the valve operator removed. Number / Position / Function [ ] / [ ] / [ ] [ ] / [ ] / [ ] [ ] / [ ] / [ ]	12 hours]
SR 3.5.2.2	Verify each ECCS manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.5.2.3	[Verify ECCS piping is full of water.	31 days]
SR 3.5.2.4	Verify each ECCS pump's developed head at the test flow point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program
SR 3.5.2.5	Verify each ECCS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[18] months
SR 3.5.2.6	Verify each ECCS pump starts automatically on an actual or simulated actuation signal.	[18] months
SR 3.5.2.7	[Verify, for each ECCS throttle valve listed below, each position stop is in the correct position. Valve Number [ ] [ ] [ ]	[18] months]

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.8	Verify, by visual inspection, each ECCS train containment sump suction inlet is not restricted by debris and the suction inlet trash racks and screens show no evidence of structural distress or abnormal corrosion.	[18] months

Comment: Conditions B and F are default Conditions. Therefore these Conditions are excluded.

3.6 CONTAINMENT SYSTEMS

3.6.6A Containment Spray and Cooling Systems (Atmospheric and Dual) (Credit taken for iodine removal by the Containment Spray System)

LCO 3.6.6A Two containment spray trains and [two] containment cooling trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One containment spray train inoperable.	A.1 Restore containment spray train to OPERABLE status.	72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 84 hours
C. One [required] containment cooling train inoperable.	C.1 Restore [required] containment cooling train to OPERABLE status.	7 days
D. Two [required] containment cooling trains inoperable.	D.1 Restore one [required] containment cooling train to OPERABLE status.	72 hours
[E. Two containment spray trains inoperable. OR Any combination of three or more containment spray and	E.1 Restore inoperable containment spray trains and containment cooling trains to OPERABLE status.	1 hour

CONDITION	REQUIRED ACTION	COMPLETION TIME
cooling trains inoperable.		
FE. Required Action and associated Completion Time of Condition C, D or D E not met.	FE.1 Be in MODE 3. AND FE.2 Be in MODE 5.	6 hours 36 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
[G~~F~~. Two containment spray trains inoperable. OR Any combination of three or more trains inoperable.	~~F~~G.1 Enter LCO 3.0.3.	Immediately]

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.6A.1	Verify each containment spray manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	31 days
SR 3.6.6A.2	Operate each [required] containment cooling train fan unit for ≥ 15 minutes.	31 days
SR 3.6.6A.3	Verify each [required] containment cooling train cooling water flow rate is ≥ [700] gpm.	31 days
SR 3.6.6A.4	Verify each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program
SR 3.6.6A.5	Verify each automatic containment spray valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[18] months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.6A.6	Verify each containment spray pump starts automatically on an actual or simulated actuation signal.	[18] months
SR 3.6.6A.7	Verify each [required] containment cooling train starts automatically on an actual or simulated actuation signal.	[18] months
SR 3.6.6A.8	Verify each spray nozzle is unobstructed.	[At first refueling] AND 10 years

Comment: condition G is a default Condition and is therefore excluded.

3.6 CONTAINMENT SYSTEMS

3.6.6B Containment Spray and Cooling Systems (Atmospheric and Dual (Credit not taken for iodine removal by the Containment Spray System)

LCO 3.6.6B Two containment spray trains and [two] containment cooling trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One containment spray train inoperable.	A.1 Restore containment spray train to OPERABLE status.	7 days
B. One [required] containment cooling train inoperable.	B.1 Restore [required] containment cooling train to OPERABLE status.	7 days
C. Two containment spray trains inoperable.	C.1 Restore one containment spray train to OPERABLE status.	72 hours
D. One containment spray train and one [required] containment cooling train inoperable.	D.1 Restore containment spray train to OPERABLE status. OR D.2 Restore [required] containment cooling train to OPERABLE status.	72 hours 72 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Two [required] containment cooling trains inoperable.	E.1 Restore one [required] containment cooling train to OPERABLE status.	72 hours
~~F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met.~~	~~F.1 Be in MODE 3.~~ ~~AND~~ ~~F.2 Be in MODE 5.~~	~~6 hours~~ ~~36 hours~~
[F. Any combination of three or more trains inoperable.	F.1 Enter LCO 3.0.3.	Immediately]
[G. Any combination of three or more trains inoperable.	G.1 Restore inoperable trains to OPERABLE status.	1 hour
H. Required Action and associated Completion Time of Condition A, B, C, D, E, [or G] not met.	H.1 Be in MODE 3. AND H.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.6B.1	Verify each containment spray manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	31 days
SR 3.6.6B.2	Operate each [required] containment cooling train fan unit for ≥ 15 minutes.	31 days

SURVEILLANCE		FREQUENCY
SR 3.6.6B.3	Verify each [required] containment cooling train cooling water flow rate is ≥ [700] gpm.	31 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.6B.4	Verify each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program
SR 3.6.6B.5	Verify each automatic containment spray valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[18] months
SR 3.6.6B.6	Verify each containment spray pump starts automatically on an actual or simulated actuation signal.	[18] months
SR 3.6.6B.7	Verify each [required] containment cooling train starts automatically on an actual or simulated actuation signal.	[18] months
SR 3.6.6B.8	Verify each spray nozzle is unobstructed.	[At first refueling] AND 10 years

Comment: Condition C is a default Condition and is excluded.

3.6 CONTAINMENT SYSTEMS

3.6.6C Containment Spray System (Ice Condenser)

LCO 3.6.6C Two containment spray trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One containment spray train inoperable.	A.1 Restore containment spray train to OPERABLE status.	72 hours
[B. Two containment spray trains inoperable.	B.1 Restore inoperable containment spray trains to OPERABLE status.	1 hour
CB. Required Action and associated Completion Time not met.	CB.1 Be in MODE 3. AND CB.2 Be in MODE 5.	6 hours 84 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.6C.1	Verify each containment spray manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	31 days
SR 3.6.6C.2	Verify each containment spray pump's developed head at the flow test point is greater than or equal to	In accordance with the Inservice

SURVEILLANCE	FREQUENCY
the required developed head.	Testing Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.6C.3	Verify each automatic containment spray valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[18] months
SR 3.6.6C.4	Verify each containment spray pump starts automatically on an actual or simulated actuation signal.	[18] months
SR 3.6.6C.5	Verify each spray nozzle is unobstructed.	[At first refueling] AND 10 years

Comment: Condition C is a default Condition and is excluded.

3.6 CONTAINMENT SYSTEMS

3.6.6D Quench Spray (QS) System (Subatmospheric)

LCO 3.6.6D Two QS trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One QS train inoperable.	A.1 Restore QS train to OPERABLE status.	72 hours
[B. Two QS trains inoperable.	B.1 Restore inoperable QS trains to OPERABLE status.	1 hour]
CB. Required Action and associated Completion Time not met.	CB.1 Be in MODE 3. AND CB.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.6D.1	Verify each QS manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	31 days
SR 3.6.6D.2	Verify each QS pump's developed head at the flow test point is greater than or equal to the required	In accordance with the Inservice

SURVEILLANCE	FREQUENCY
developed head.	Testing Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.6D.3	Verify each QS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[18] months
SR 3.6.6D.4	Verify each QS pump starts automatically on an actual or simulated actuation signal.	[18] months
SR 3.6.6D.5	Verify each spray nozzle is unobstructed.	[At first refueling] AND 10 years

Comment: Condition G is a default Condition and is therefore excluded.

3.6 CONTAINMENT SYSTEMS

3.6.6E Recirculation Spray (RS) System (Subatmospheric)

LCO 3.6.6E Four RS subsystems [and a casing cooling tank] shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RS subsystem inoperable.	A.1 Restore RS subsystem to OPERABLE status.	7 days
B. Two RS subsystems inoperable in one train.	B.1 Restore one RS subsystem to OPERABLE status.	72 hours
C. [Two inside RS subsystems inoperable.	C.1 Restore one RS subsystem to OPERABLE status.	72 hours]
D. [Two outside RS subsystems inoperable.	D.1 Restore one RS subsystem to OPERABLE status.	72 hours]
E. [Casing cooling tank inoperable.	E.1 Restore casing cooling tank to OPERABLE status.	72 hours]
[F. Three or more RS subsystems inoperable.	F.1 Restore inoperable RS subsystems to OPERABLE status.	1 hour
[G. Three or more RS subsystems inoperable.	G.1 Enter LCO 3.0.3.	Immediately]
H. Required Action and associated Completion	H.1 Be in MODE 3.	6 hours

CONDITION	REQUIRED ACTION	COMPLETION TIME
Time not met	AND H.2 Be in MODE 5.	84 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.6E.1	Verify casing cooling tank temperature is ≥ [35]°F and ≤ [50]°F.	24 hours
SR 3.6.6E.2	Verify casing cooling tank contained borated water volume is ≥ [116,500] gal.	7 days
SR 3.6.6E.3	Verify casing cooling tank boron concentration is ≥ [2300] ppm and ≤ [2400] ppm.	7 days
SR 3.6.6E.4	Verify each RS [and casing cooling] manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	31 days
SR 3.6.6E.5	Verify each RS [and casing cooling] pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program
SR 3.6.6E.6	Verify on an actual or simulated actuation signal(s): a. Each RS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position, b. Each RS pump starts automatically, and c. [Each casing cooling pump starts automatically.]	[18] months
SR 3.6.6E.7	Verify each spray nozzle is unobstructed.	[At first refueling] AND 10 years

Comment: Condition D is a default Condition and is therefore excluded.

3.6 CONTAINMENT SYSTEMS

3.6.10 Hydrogen Ignition System (HIS) (Ice Condenser)

LCO 3.6.10 Two HIS trains shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One HIS train inoperable.	A.1 Restore HIS train to OPERABLE status. OR A.2 Perform SR 3.6.10.1 on the OPERABLE train.	7 days Once per 7 days
B. One containment region with no OPERABLE hydrogen ignitor.	B.1 Restore one hydrogen ignitor in the affected containment region to OPERABLE status.	7 days
D~~C.~~. Required Action and associated Completion Time not met.	D~~C.~~.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.10.1	Energize each HIS train power supply breaker and verify ≥ [32] ignitors are energized in each train.	92 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.10.2	Verify at least one hydrogen ignitor is OPERABLE in each containment region.	92 days
SR 3.6.10.3	Energize each hydrogen ignitor and verify temperature is ≥ [1700]°F.	[18] months

Comment: Condition C is a default Condition and is excluded.

3.6 CONTAINMENT SYSTEMS

3.6.14 Air Return System (ARS) (Ice Condenser)

LCO 3.6.14 Two ARS trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One ARS train inoperable.	A.1 Restore ARS train to OPERABLE status.	72 hours
[B. Two ARS trains inoperable.	B.1 Restore inoperable ARS trains to OPERABLE status.	1 hour]
CB. Required Action and associated Completion Time not met.	CB.1 Be in MODE 3. AND CB.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.14.1	Verify each ARS fan starts on an actual or simulated actuation signal, after a delay of ≥ [9.0] minutes and ≤ [11.0] minutes, and operates for ≥ 15 minutes.	[92] days
SR 3.6.14.2	Verify, with the ARS fan dampers closed, each ARS fan motor current is ≥ [20.5] amps and ≤ [35.5] amps [when the fan speed is ≥ [840] rpm and ≤ [900] rpm].	92 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.14.3	Verify, with the ARS fan not operating, each ARS fan damper opens when ≤ [11.0] lb is applied to the counterweight.	92 days
SR 3.6.14.4	[Verify each motor operated valve in the hydrogen collection header that is not locked, sealed, or otherwise secured in position, opens on an actual or simulated actuation signal after a delay of ≥ [9.0] minutes and ≤ [11.0] minutes.	92 days]

Comment: The RICT of RA D.1 is limited to 7 days due to RA D.2 requiring periodic performance of an action every 7 days. Conditions B and E are default Conditions and are excluded. Condition D does not specify a restoration action.

3.7 PLANT SYSTEMS

3.7.2 Main Steam Isolation Valves (MSIVs)

LCO 3.7.2 [Four] MSIVs shall be OPERABLE.

APPLICABILITY: MODE 1,
MODES 2 and 3 except when all MSIVs are closed [and de-activated].

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One MSIV inoperable in MODE 1.	A.1 Restore MSIV to OPERABLE status.	[8] hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 2.	6 hours
[C Two or more MSIVs inoperable in MODE 1.	C.1 Restore inoperable MSIVs to OPERABLE status.	1 hour]
~~C~~D. ----------NOTE---------- Separate Condition entry is allowed for each MSIV. ---------- One or more MSIVs inoperable in MODE 2 or 3.	D~~C.~~.1 Close MSIV. AND D~~C.~~.2 Verify MSIV is closed.	[8] hours Once per 7 days
E~~D.~~. Required Action and associated Completion Time of Condition C or D not met.	E~~D.~~.1 Be in MODE 3. AND ~~D~~E.2 Be in MODE 4.	6 hours 12 hours

CONDITION	REQUIRED ACTION	COMPLETION TIME

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.2.1	----------NOTE---------- Only required to be performed in MODES 1 and 2. ---------- Verify the isolation time of each MSIV is ≤ [4.6] seconds.	In accordance with the Inservice Testing Program
SR 3.7.2.2	----------NOTE---------- Only required to be performed in MODES 1 and 2. ---------- Verify each MSIV actuates to the isolation position on an actual or simulated actuation signal.	[18] months

Comment: Condition D~~C~~ is a default Condition and has an implied "restore" with an immediate Completion Time and is excluded. Conditions E and F have immediate CTs and are excluded.

3.7 PLANT SYSTEMS

3.7.5 Auxiliary Feedwater (AFW) System

LCO 3.7.5 [Three] AFW trains shall be OPERABLE.

----------NOTE----------
[Only one AFW train, which includes a motor driven pump, is required to be OPERABLE in MODE 4.]

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is relied upon for heat removal.

ACTIONS

----------NOTE----------
LCO 3.0.4.b is not applicable [when entering MODE 1.]

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. [One steam supply to turbine driven AFW pump inoperable. OR ----------NOTE---------- Only applicable if MODE 2 has not been entered following refueling. ---------- One turbine driven AFW pump inoperable in MODE 3 following refueling.	A.1 Restore affected equipment to OPERABLE status.	7 days]

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One AFW train inoperable in MODE 1, 2, or 3 [for reasons other than Condition A].	B.1 Restore AFW train to OPERABLE status.	72 hours
[C. Two AFW trains inoperable in MODE 1, 2, or 3.]	C.1 Restore inoperable AFW trains to OPERABLE status.	1 hour
DC. Required Action and associated Completion Time for Condition A [or , [B] [or C] not met. [OR Two AFW trains inoperable in MODE 1, 2, or 3.]	DC.1 Be in MODE 3. AND CD.2 [Be in MODE 4.	6 hours [18] hours]
ED. [Three] AFW trains inoperable in MODE 1, 2, or 3.	D.1E1 ----------NOTE---------- LCO 3.0.3 and all other LCO Required Actions requiring MODE changes are suspended until one AFW train is restored to OPERABLE status. ---------- Initiate action to restore one AFW train to OPERABLE status.	 Immediately]
FE. Required AFW train inoperable in MODE 4.	FE.1 Initiate action to restore AFW train to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.5.1	----------NOTE---------- [AFW train(s) may be considered OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually realigned to the AFW mode of operation.] ---------- Verify each AFW manual, power operated, and automatic valve in each water flow path, [and in both steam supply flow paths to the steam turbine driven pump,] that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.7.5.2	----------NOTE---------- [Not required to be performed for the turbine driven AFW pump until [24 hours] after ≥ [1000] psig in the steam generator.] ---------- Verify the developed head of each AFW pump at the flow test point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program
SR 3.7.5.3	----------NOTE---------- [AFW train(s) may be considered OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually realigned to the AFW mode of operation.] ---------- Verify each AFW automatic valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[18] months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.5.4	----------NOTES---------- 1. [Not required to be performed for the turbine driven AFW pump until [24 hours] after ≥ [1000] psig in the steam generator.] 2. [AFW train(s) may be considered OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually realigned to the AFW mode of operation.] ---------- Verify each AFW pump starts automatically on an actual or simulated actuation signal.	[18] months
SR 3.7.5.5	[Verify proper alignment of the required AFW flow paths by verifying flow from the condensate storage tank to each steam generator.	Prior to entering MODE 2 whenever unit has been in MODE 5, MODE 6, or defueled for a cumulative period of > 30 days]

Comment: Condition C is a default Condition and is excluded.

3.7 PLANT SYSTEMS

3.7.7 Component Cooling Water (CCW) System

LCO 3.7.7 Two CCW trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CCW train inoperable.	A.1 ----------NOTE---------- Enter applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops - MODE 4," for residual heat removal loops made inoperable by CCW. ---------- Restore CCW train to OPERABLE status.	72 hours
[B. Two CCW trains inoperable.	B.1 Restore inoperable CCW trains to OPERABLE status.	1 hour]
CB. Required Action and associated Completion Time [of Condition A] not met.	CB.1 Be in MODE 3. AND BC.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.7.1	----------NOTE---------- Isolation of CCW flow to individual components does not render the CCW System inoperable. ---------- Verify each CCW manual, power operated, and automatic valve in the flow path servicing safety related equipment, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.7.7.2	Verify each CCW automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[18] months
SR 3.7.7.3	Verify each CCW pump starts automatically on an actual or simulated actuation signal.	[18] months

Comment: Condition C is a default Condition and is excluded.

3.7 PLANT SYSTEMS

3.7.8 Service Water System (SWS)

LCO 3.7.8 Two SWS trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SWS train inoperable.	A.1 ----------NOTES---------- 1. Enter applicable and Required Actions of LCO 3.8.1, "AC Sources - Operating," for emergency diesel generator made inoperable by SWS. 2. Enter applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops - MODE 4," for residual heat removal loops made inoperable by SWS. ---------- Restore SWS train to OPERABLE status.	72 hours
[B. Two SWS trains inoperable.	B.1 Restore inoperable SWS trains to OPERABLE status.	1hour
CB. Required Action and associated Completion Time [of Condition A] not met.	CB.1 Be in MODE 3. AND	6 hours

CONDITION	REQUIRED ACTION	COMPLETION TIME
	CB..2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.8.1	----------NOTE---------- Isolation of SWS flow to individual components does not render the SWS inoperable. ----------	
	Verify each SWS manual, power operated, and automatic valve in the flow path servicing safety related equipment, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.7.8.2	Verify each SWS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[18] months
SR 3.7.8.3	Verify each SWS pump starts automatically on an actual or simulated actuation signal.	[18] months

Comment: RA B.1 requires the periodic performance of an action and Condition D is a default Condition. Therefore these are excluded.

3.7 PLANT SYSTEMS

3.7.9 Ultimate Heat Sink (UHS)

LCO 3.7.9 The UHS shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. [One or more cooling towers with one cooling tower fan inoperable.	A.1 Restore cooling tower fan(s) to OPERABLE status.	7 days]
-----REVIEWER'S NOTE----- The [ ]°F is the maximum allowed UHS temperature value and is based on temperature limitations of the equipment that is relied upon for accident mitigation and safe shutdown of the unit. ---------- [B. [Water temperature of the UHS > [90]°F and ≤ [ ]°F.	B.1 Verify water temperature of the UHS is ≤ [90]°F averaged over the previous 24 hour period.	Once per hour]
[C. UHS inoperable [for reasons other than Condition A or B.]	C.1 Restore UHS to OPERABLE status.	1 hour
~~D~~C.. [Required Action and associated Completion Time [of Condition A or B] not met.]	~~C~~D.1 Be in MODE 3. AND ~~C~~D.2 Be in MODE 5.	6 hours 36 hours

CONDITION	REQUIRED ACTION	COMPLETION TIME
[OR] UHS inoperable [for reasons other than Condition A or B].]		

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.9.1	[Verify water level of UHS is ≥ [562] ft [mean sea level].	[24] hours]
SR 3.7.9.2	[Verify average water temperature of UHS is ≤ [90]°F.	24 hours]
SR 3.7.9.3	[Operate each cooling tower fan for ≥ [15] minutes.	31 days]
SR 3.7.9.4	[Verify each cooling tower fan starts automatically on an actual or simulated actuation signal.	[18] months]

Comment: A quantatitive calculation of a Risk Informed Completion Time cannot be calculated for this Specification. Therefore, it is not included in TSTF-505.

3.7 PLANT SYSTEMS

3.7.10 Control Room Emergency Filtration System (CREFS)

LCO 3.7.10 Two CREFS trains shall be OPERABLE.

----------NOTE----------
The control room boundary may be opened intermittently under administrative control.

APPLICABILITY: MODES 1, 2, 3, 4, [5, and 6],
During movement of [recently] irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREFS train inoperable.	A.1 Restore CREFS train to OPERABLE status.	7 days
B. Two CREFS trains inoperable due to inoperable control room boundary in MODE 1, 2, 3, or 4.	B.1 Restore control room boundary to OPERABLE status.	24 hours
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, 3, or 4.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. Required Action and associated Completion Time of Condition A not met [in MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies.	D.1	----------NOTE---------- [Place in toxic gas protection mode if automatic transfer to toxic gas protection mode is inoperable.] ---------- Place OPERABLE CREFS train in emergency mode.	Immediately
	OR		
	D.2	Suspend movement of [recently] irradiated fuel assemblies.	Immediately
E. Two CREFS trains inoperable [in MODE 5 or 6, or] during movement of [recently] irradiate fuel assemblies.	E.1	Suspend movement of [recently] irradiated fuel assemblies.	Immediately
F. Two CREFS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.	F.1	Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.10.1	Operate each CREFS train for [≥ 10 continuous hours with the heaters operating or (for systems without heaters) ≥ 15 minutes].	31 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.10.2	Perform required CREFS filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)].	In accordance with [VFTP]
SR 3.7.10.3	Verify each CREFS train actuates on an actual or simulated actuation signal.	[18] months
SR 3.7.10.4	Verify one CREFS train can maintain a positive pressure of ≥ [0.125] inches water gauge, relative to the adjacent [turbine building] during the pressurization mode of operation at a makeup flow rate of ≤ [3000] cfm.	[18] months on a STAGGERED TEST BASIS

Comment: Condition A already has a CT of 30 days. Condition C is a default Condition. Condition D and E are outside the applicability of the Traveler. Therefore these Conditions are excluded

3.7 PLANT SYSTEMS

3.7.11 Control Room Emergency Air Temperature Control System (CREATCS)

LCO 3.7.11 Two CREATCS trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, 4, [5, and 6],
During movement of [recently] irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREATCS train inoperable.	A.1 Restore CREATCS train to OPERABLE status.	30 days
[B. Two CREATCS trains inoperable in MODE 1, 2, 3 or 4.	B.1 Restore inoperable CREATCS trains to OPERABLE status.	1 hour]
~~C~~B.. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, 3, or 4.	~~C~~B..1 Be in MODE 3. AND ~~C~~B..2 Be in MODE 5.	6 hours 36 hours
~~D~~C.. Required Action and associated Completion Time of Condition A not met [in MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies.	~~C~~D.1 Place OPERABLE CREATCS train in operation. OR ~~C~~D.2 Suspend movement of [recently] irradiated fuel assemblies.	Immediately Immediately
~~E~~D.. Two CREATCS trains inoperable [in MODE 5 or 6, or] during movement of [recently]	~~E~~D..1 Suspend movement of [recently] irradiated fuel assemblies.	Immediately

CONDITION	REQUIRED ACTION	COMPLETION TIME
irradiated fuel assemblies.		

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
[F~~E~~. Two CREATCS trains inoperable in MODE 1, 2, 3, or 4.	F~~E~~.1 Enter LCO 3.0.3.	Immediately]

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.11.1	Verify each CREATCS train has the capability to remove the assumed heat load.	[18] months

Comment: RAs A.1 and B.1 specify the periodic performance of an action, RAs A.2, B.2 and C.1 declare another component inoperable, RA B.3 performs OPERABILITY determination and performance of a surveillance. Condition H is a default Condition. Therefore these Conditions are excluded.

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources - Operating

LCO 3.8.1 The following AC electrical sources shall be OPERABLE:

a. Two qualified circuits between the offsite transmission network and the onsite Class 1E AC Electrical Power Distribution System,

b. Two diesel generators (DGs) capable of supplying the onsite Class 1E power distribution subsystem(s), and

[c. Automatic load sequencers for Train A and Train B.]

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

----------NOTE----------
LCO 3.0.4.b is not applicable to DGs.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One [required] offsite circuit inoperable.	A.1 Perform SR 3.8.1.1 for [required] OPERABLE offsite circuit. AND	1 hour AND Once per 8 hours thereafter
	A.2 Declare required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable. AND	24 hours from discovery of no offsite power to one train concurrent with inoperability of redundant required feature(s)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	A.3 Restore [required] offsite circuit to OPERABLE status.	72 hours
B. One [required] DG inoperable.	B.1 Perform SR 3.8.1.1 for the [required] offsite circuit(s).	1 hour AND Once per 8 hours thereafter
	AND	
	B.2 Declare required feature(s) supported by the inoperable DG inoperable when its required redundant feature(s) is inoperable.	4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)
	AND	
	B.3.1 Determine OPERABLE DG(s) is not inoperable due to common cause failure.	[24] hours
	OR	
	B.3.2 Perform SR 3.8.1.2 for OPERABLE DG(s).	[24] hours
	AND	
	B.4 Restore [required] DG to OPERABLE status.	72 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Two [required] offsite circuits inoperable.	C.1 Declare required feature(s) inoperable when its redundant required feature(s) is inoperable. AND C.2 Restore one [required] offsite circuit to OPERABLE status.	12 hours from discovery of Condition C concurrent with inoperability of redundant required features 24 hours
D. One [required] offsite circuit inoperable. AND One [required] DG inoperable.	----------NOTE---------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," when Condition D is entered with no AC power source to any train. ---------- D.1 Restore [required] offsite circuit to OPERABLE status. OR D.2 Restore [required] DG to OPERABLE status.	 12 hours 12 hours
E. Two [required] DGs inoperable.	E.1 Restore one [required] DG to OPERABLE status.	2 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
-----REVIEWER'S NOTE----- This Condition may be deleted if the unit design is such that any sequencer failure mode will only affect the ability of the associated DG to power its respective safety loads following a loss of offsite power independent of, or coincident with, a Design Basis Event. ---------- F. [One [required] [automatic load sequencer] inoperable.	F.1 Restore [required] [automatic load sequencer] to OPERABLE status.	[12] hours]
[G. Three or more [required] AC sources inoperable.	G.1 Restore [required] inoperable AC sources to OPERABLE status.	1 hour
H~~G.~~ Required Action and associated Completion Time of Condition A, B, C, D, E, ~~or~~ [F] or G not met.	H~~G.~~.1 Be in MODE 3. AND ~~G~~H.2 Be in MODE 5.	6 hours 36 hours
[I~~H~~. Three or more [required] AC sources inoperable.	I~~H~~.1 Enter LCO 3.0.3.	Immediately]

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.1.1	Verify correct breaker alignment and indicated power availability for each [required] offsite circuit.	7 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.2	----------NOTES---------- 1. All DG starts may be preceded by an engine prelube period and followed by a warmup period prior to loading. [2. A modified DG start involving idling and gradual acceleration to synchronous speed may be used for this SR as recommended by the manufacturer. When modified start procedures are not used, the time, voltage, and frequency tolerances of SR 3.8.1.7 must be met.] ---------- Verify each DG starts from standby conditions and achieves steady state voltage ≥ [3740] V and ≤ [4580] V, and frequency ≥ [58.8] Hz and ≤ [61.2] Hz.	31 days
SR 3.8.1.3	----------NOTES---------- 1. DG loadings may include gradual loading as recommended by the manufacturer. 2. Momentary transients outside the load range do not invalidate this test. 3. This Surveillance shall be conducted on only one DG at a time. 4. This SR shall be preceded by and immediately follow without shutdown a successful performance of SR 3.8.1.2 or SR 3.8.1.7. ---------- Verify each DG is synchronized and loaded and operates for ≥ 60 minutes at a load ≥ [4500] kW and ≤ [5000] kW.	31 days
SR 3.8.1.4	Verify each day tank [and engine mounted tank] contains ≥ [220] gal of fuel oil.	31 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.5	Check for and remove accumulated water from each day tank [and engine mounted tank].	[31] days
SR 3.8.1.6	Verify the fuel oil transfer system operates to [automatically] transfer fuel oil from storage tank[s] to the day tank [and engine mounted tank].	[92] days
SR 3.8.1.7	----------NOTE---------- All DG starts may be preceded by an engine prelube period. ---------- Verify each DG starts from standby condition and achieves: a. In ≤ [10] seconds, voltage ≥ [3740] V and frequency ≥ 58.8] Hz and b. Steady state voltage ≥ [3740] V and ≤ [4580] V, and frequency ≥ [58.8] Hz and ≤ [61.2] Hz.	184 days
SR 3.8.1.8	----------NOTE---------- [This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify [automatic [and] manual] transfer of AC power sources from the normal offsite circuit to each alternate [required] offsite circuit.	[18] months]

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.9	----------NOTES---------- [1. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. 2. If performed with the DG synchronized with offsite power, it shall be performed at a power factor ≤ [0.9]. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable.] ---------- Verify each DG rejects a load greater than or equal to its associated single largest post-accident load, and: a. Following load rejection, the frequency is ≤ [63] Hz, b. Within [3] seconds following load rejection, the voltage is ≥ [3740] V and ≤ [4580] V, and c. Within [3] seconds following load rejection, the frequency is ≥ [58.8] Hz and ≤ [61.2] Hz.	[18] months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.10	----------NOTES---------- [1. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. 2. If performed with DG synchronized with offsite power, it shall be performed at a power factor ≤ [0.9]. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable.] ---------- Verify each DG does not trip and voltage is maintained ≤ [5000] V during and following a load rejection of ≥ [4500] kW and ≤ [5000] kW.	[18] months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.11	----------NOTES---------- 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify on an actual or simulated loss of offsite power signal: a. De-energization of emergency buses, b. Load shedding from emergency buses, c. DG auto-starts from standby condition and: 1. Energizes permanently connected loads in ≤ [10] seconds, 2. Energizes auto-connected shutdown loads through [automatic load sequencer], 3. Maintains steady state voltage ☐ ≥ [3740] V and ≤ [4580] V, 4. Maintains steady state frequency ≥ [58.8] Hz and ≤ [61.2] Hz, and 5. Supplies permanently connected [and auto-connected] shutdown loads for ≥ 5 minutes.	[18] months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.12	----------NOTES---------- [1. All DG starts may be preceded by prelube period. 2. This Surveillance shall not normally be performed in MODE 1 or 2. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify on an actual or simulated Engineered Safety Feature (ESF) actuation signal each DG auto-starts from standby condition and: a. In ≤ [10] seconds after auto-start and during tests, achieves voltage ≥ [3740] V and frequency ≥ [58.8] Hz, b. Achieves steady state voltage ≥ [3740] V and ≤ [4580] V and frequency ≥ [58.8] Hz and ≤ [61.2] Hz, c. Operates for ≥ 5 minutes, d. Permanently connected loads remain energized from the offsite power system, and e. Emergency loads are energized [or auto-connected through the automatic load sequencer] from the offsite power system.	[18] months]

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.13	----------NOTE---------- [This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.] ---------- Verify each DG's noncritical automatic trips are bypassed on [actual or simulated loss of voltage signal on the emergency bus concurrent with an actual or simulated ESF actuation signal].	[18] months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.14	----------NOTES---------- 1. Momentary transients outside the load and power factor ranges do not invalidate this test. 2. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. 3. If performed with DG synchronized with offsite power, it shall be performed at a power factor ≤ [0.9]. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable. ---------- Verify each DG operates for ≥ 24 hours: a. For ≥ [2] hours loaded ≥ [5250] kW and ≤ [5500] kW and b. For the remaining hours of the test loaded ≥ [4500] kW and ≤ [5000] kW.	[18] months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.15	----------NOTES---------- 1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated ≥ [2] hours loaded ≥ [4500] kW and ≤ [5000] kW. Momentary transients outside of load range do not invalidate this test. 2. All DG starts may be preceded by an engine prelube period. ---------- Verify each DG starts and achieves: a. In ≤ [10] seconds, voltage ≥ [3740] V and frequency ≥ [58.8] Hz and b. Steady state voltage ≥ [3740] V, and ≤ [4580] V and frequency ≥ [58.8] Hz and ≤ [61.2] Hz.	[18] months
SR 3.8.1.16	----------NOTE---------- This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify each DG: a. Synchronizes with offsite power source while loaded with emergency loads upon a simulated restoration of offsite power, b. Transfers loads to offsite power source, and c. Returns to ready-to-load operation.	[18] months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.17	----------NOTE---------- [This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify, with a DG operating in test mode and connected to its bus, an actual or simulated ESF actuation signal overrides the test mode by: a. Returning DG to ready-to-load operation and b. [Automatically energizing the emergency load from offsite power].	[18] months]
SR 3.8.1.18	----------NOTE---------- [This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.] ---------- Verify interval between each sequenced load block is within ± [10% of design interval] for each emergency [and shutdown] load sequencer.	[18] months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.19	----------NOTES---------- 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ESF actuation signal: a. De-energization of emergency buses, b. Load shedding from emergency buses, and c. DG auto-starts from standby condition and: 1. Energizes permanently connected loads in ≤ [10] seconds, 2. Energizes auto-connected emergency loads through load sequencer, 3. Achieves steady state voltage ≥ [3740] V and ≤ [4580] V, 4. Achieves steady state frequency ≥ [58.8] Hz and ≤ [61.2] Hz, and 5. Supplies permanently connected [and auto-connected] emergency loads for ≥ 5 minutes.	[18] months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.20	----------NOTE---------- All DG starts may be preceded by an engine prelube period. ---------- Verify when started simultaneously from standby condition, each DG achieves: a. In ≤ [10] seconds, voltage ≥ [3740] V and frequency ≥ [58.8] Hz and b. Steady state voltage ≥ [3744] V and ≤ [4576] V, and frequency ≥ [58.8] Hz and ≤ [61.2] Hz.	10 years

Comment: RA A.2 requires the performance of a periodic action. Condition E is a default Condition. These Conditions are therefore excluded.

3.8 ELECTRICAL POWER SYSTEMS

3.8.4 DC Sources - Operating

LCO 3.8.4 The Train A and Train B DC electrical power subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One [or two] battery charger[s on one train] inoperable.	A.1 Restore battery terminal voltage to greater than or equal to the minimum established float voltage. AND A.2 Verify battery float current ≤ [2] amps. AND A.3 Restore battery charger[s] to OPERABLE status.	2 hours Once per [12] hours 7 days
[B. One [or two] batter[y][ies on one train] inoperable.	B.1 Restore batter[y][ies] to OPERABLE status.	[2] hours]
C. One DC electrical power subsystem inoperable for reasons other than Condition A [or B].	C.1 Restore DC electrical power subsystem to OPERABLE status.	[2] hours
[D. Two DC electrical power subsystems inoperable.	D.1 Restore at least one DC electrical power subsystem to OPERABLE status.	1 hour]

CONDITION	REQUIRED ACTION	COMPLETION TIME
ED. Required Action and Associated Completion Time not met.	ED.1 Be in MODE 3. AND DE.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.4.1	Verify battery terminal voltage is greater than or equal to the minimum established float voltage.	7 days
SR 3.8.4.2	Verify each battery charger supplies ≥ [400] amps at greater than or equal to the minimum established float voltage for ≥ [8] hours. OR Verify each battery charger can recharge the battery to the fully charged state within [24] hours while supplying the largest combined demands of the various continuous steady state loads, after a battery discharge to the bounding design basis event discharge state.	[18] months
SR 3.8.4.3	----------NOTES---------- 1. The modified performance discharge test in SR 3.8.6.6 may be performed in lieu of SR 3.8.4.3. 2. This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.	[18] months

Comment: Condition C is a default Condition and is excluded.

3.8 ELECTRICAL POWER SYSTEMS

3.8.7 Inverters - Operating

LCO 3.8.7 The required Train A and Train B inverters shall be OPERABLE.

----------NOTE----------
[[One/two] inverter[s] may be disconnected from [its/their] associated DC bus for ≤ 24 hours to perform an equalizing charge on [its/their] associated [common] battery, provided:

a. The associated AC vital bus(es) [is/are] energized from [its/their] [Class 1E constant voltage source transformers] [inverter using internal AC source], and

b. All other AC vital buses are energized from their associated OPERABLE inverters.]

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One [required] inverter inoperable.	A.1 ----------NOTE---------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating" with any AC vital bus de-energized. ---------- Restore inverter to OPERABLE status.	24 hours
[B. Two or more [required] inverters inoperable.	B.1 Restore inoperable inverters to OPERABLE status.	1 hour
~~C~~B. Required Action and	~~C~~B.1 Be in MODE 3.	6 hours

CONDITION	REQUIRED ACTION	COMPLETION TIME
associated Completion Time not met.	AND	

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	~~B~~C.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.7.1	Verify correct inverter voltage, [frequency], and alignment to required AC vital buses.	7 days

Comment: Condition E is a default Condition and is therefore excluded.

3.8 ELECTRICAL POWER SYSTEMS

3.8.9 Distribution Systems - Operating

LCO 3.8.9 Train A and Train B AC, DC, and AC vital bus electrical power distribution subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more AC electrical power distribution subsystems inoperable.	----------NOTE---------- Enter applicable Conditions and Required Actions of LCO 3.8.4, "DC Sources - Operating," for DC trains made inoperable by inoperable power distribution subsystems. ---------- A.1 Restore AC electrical power distribution subsystem(s) to OPERABLE status.	8 hours
B. One or more AC vital buses inoperable.	B.1 Restore AC vital bus subsystem(s) to OPERABLE status.	2 hours
C. One or more DC electrical power distribution subsystems inoperable.	C.1 Restore DC electrical power distribution subsystem(s) to OPERABLE status.	2 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
[D. Two or more electrical power distribution subsystems inoperable that result in a loss of safety function.	D.1 Restore inoperable electrical power distribution subsystems to OPERABLE status to restore safety function.	1 hour
ED. Required Action and associated Completion Time not met.	ED.1 Be in MODE 3. AND ED.2 Be in MODE 5.	6 hours 36 hours
[FE. Two or more electrical power distribution subsystems inoperable that result in a loss of safety function.	FE.1 Enter LCO 3.0.3.	Immediately]

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.9.1	Verify correct breaker alignments and voltage to [required] AC, DC, and AC vital bus electrical power distribution subsystems.	7 days

5.5 Programs and Manuals

5.5.16 Containment Leakage Rate Testing Program (continued)

1. Containment leakage rate acceptance criterion is ≤ 1.0 L_a. During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are < 0.60 L_a for the Type B and C tests and [< 0.75 L_a for Option A Type A tests] [≤ 0.75 L_a for Option B Type A tests].

2. Air lock testing acceptance criteria are:

   a) Overall air lock leakage rate is ≤ [0.05 L_a] when tested at ≥ P_a.

   b) For each door, leakage rate is ≤ [0.01 L_a] when pressurized to [≥ 10 psig].

e. The provisions of SR 3.0.3 are applicable to the Containment Leakage Rate Testing Program.

f. Nothing in these Technical Specifications shall be construed to modify the testing Frequencies required by 10 CFR 50, Appendix J.

5.5.17 Battery Monitoring and Maintenance Program

This Program provides for battery restoration and maintenance, based on [the recommendations of IEEE Standard 450-1995, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications," or of the battery manufacturer] including the following:

a. Actions to restore battery cells with float voltage < [2.13] V, and

b. Actions to equalize and test battery cells that had been discovered with electrolyte level below the minimum established design limit.

[5.5.18 Risk Informed Completion Time Program

This program provides controls to calculate a Risk Informed Completion Time (RICT) and must be implemented in accordance with NEI 06-09, Revision 0, "Risk-Managed Technical Specifications (RMTS) Guidelines." The program shall include the following:

a. A RICT may only be utilized for the Required Actions listed in Table 5.5.18-1.

b. The RICT may not exceed 30 days;

5.5 Programs and Manuals

5.5.18 Risk Informed Completion Time Program (continued)

---------- Reviewer's Notes ----------
1. The Risk Informed Completion Time is only Applicable in MODES supported by the Licensees PRA. Licensee's applying the RICT Program to MODES other than Modes 1 and 2 must demonstrate that they have the capability to calculate a RICT in those MODES or that the risk indicated by their MODE 1 and 2 PRA model is bounding with respect to the lower MODE conditions.
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b. A RICT may only be utilized in MODE 1, 2 [, and 3, and MODE 4 while relying on steam generators for heat removal];

c. When a RICT is being used, any plant configuration change within the scope of the Risk Informed Completion Time Program must be considered for the effect on the RICT.

1. For planned changes, the revised RICT must be determined prior to implementation of the change in configuration.

2. For emergent conditions, the revised RICT must be determined within the time limits of the Required Action Completion Time (i.e., not the RICT) or 12 hours after the plant configuration change, whichever is less.

3. Revising the RICT is not required If the plant configuration change would lower plant risk and would result in a longer RICT.

d. Use of a RICT is not permitted for voluntary entry into a configuration which represents a loss of a specified safety function or inoperability of all required trains of a system required to be OPERABLE.

e. Use of a RICT is permitted for emergent conditions which represent a loss of a specified safety function or inoperability of all required trains of a system required to be OPERABLE if one or more of the trains are considered "PRA functional" as defined in Section 2.3.1 of NEI 06-09.]

----------REVIEWER'S NOTE----------
Table 5.5.18-1 shall be amended as necessary to list all NRC approved unit-specific Specifications and Required Actions for which a Risk Informed Completion Time may be applied.

Table 5.5.18-1 (Page 1 of 3)
Required Actions Eligible for a Risk Informed Completion Time

SPECIFICATION	REQUIRED ACTION(S)
3.3.1	B.1, C.1, D.1, E.1, F.1.1, F.1.2, F.2.1, G.1, H.1, I.1, J.1, J.2, K.2, N.1, P.1, Q.1, S.1, T.1, V.1, W.1, Y.1, Z.1, BB.1, CC.1, DD.1, EE.1, FF.1, GG.1, HH.1, II.1, JJ.1
3.3.2	B.1, C.1, D.1, E.1, F.1, G.1, H.1, I.1, J.1, K.1, L.1, M.1, N.1, O.1, P.1, Q.1, R.1, S.1, T.1, U.1, V.1
3.3.5	A.1, B.1
3.3.9	A.1, B.2.1
3.4.5	A.1, C.1, C.2
3.4.9	B.1, C.1
3.4.10	A.1
3.4.11	B.3, C.2, E.3, F.1
3.4.14	A.1, A.2, C.1
3.4.20	A.1
3.5.1	A.1, B.1, C.1
3.5.2	A.1, B.1
3.5.3	B.1
3.5.5	A.1
3.5.6	A.1
3.6.2	C.3
3.6.3	A.1, B.1, C.1, D.1, E.1

Table 5.5.18-1 (Page 2 of 3)
Required Actions Eligible for a Risk Informed Completion Time

SPECIFICATION	REQUIRED ACTION(S)
3.6.6a	A.1, C.1, D.1, E.1
3.6.6b	A.1, B.1, C.1, D.1, D.2, E.1, F.1
3.6.6c	A.1, B.1
3.6.6d	A.1, B.1
3.6.6e	A.1, B.1, C.1, D.1, E.1, F.1
3.6.9	B.2
3.6.10	A.1, B.1, C.1
3.6.14	A.1, B.1
3.6.15	A.1
3.6.16	A.1, B.2
3.6.17	A.1, B.1
3.6.18	A.1, B.1
3.7.1	A.1, B.1, B.2, C.1
3.7.2	A.1, C.1, D.1
3.7.3	A.1, B.1, C.1, D.1
3.7.4	A.1, B.1
3.7.5	A.1, B.1, C.1
3.7.7	A.1, B.1
3.7.8	A.1, B.1
3.7.9	A.1, C.1
3.7.11	B.1

Table 5.5.18-1 (Page 3 of 3)
Required Actions Eligible for a Risk Informed Completion Time

SPECIFICATION	REQUIRED ACTION(S)
3.8.1	A.3, B.4, C.2, D.1, D.2, E.1, F.1, G.1
3.8.4	A.1, A.3, B.1, C.1, D.1
3.8.7	A.1, B.1
3.8.9	A.1, B.1, C.1, D.1