

TABLE 6.3-2 (Page 1)

SIGNIFICANT INPUT PARAMETERS TO THE
LOSS-OF-COOLANT ACCIDENT ANALYSIS

PLANT PARAMETERS:

Core Thermal Power	3434 MWt which corresponds to 105% of rated steam flow*
Vessel Steam Output	14.15 x 10 ⁶ LBM/h which corresponds to 105% of rated steam flow
Vessel Steam Dome Pressure	1055 psia
Maximum Recirculation Line Break Area (ft ²)	4.2
Recirculation Line Break Area for Small & Intermediate Breaks (ft ²)	1.0 to 0.08

FUEL PARAMETERS:

Fuel Type	Initial Core
Fuel Bundle Geometry	8 x 8 C lattice
Number of fuel rods Peak Technical Specification	62
Linear Heat Generation Rate (kw/ft)	13.4
Initial Minimum Critical Power Ratio	1.18

A more detailed list of input to each model and its source is
 presented in Reference 6.3-2.

*This power level exceeds the Appendix K requirement of 102%.
 The core heatup calculation assumes a bundle power consistent
 with operation of the highest powered rod at 102% of its maximum
 (technical specification) linear heat generation rate.

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2024-2025

TABLE 6.3-2 (Page 2)

EMERGENCY CORE COOLING SYSTEM PARAMETERSLow Pressure Coolant Injection System

o	Vessel Pressure at which flow may commence	psid (vessel to drywell)	280
o	Minimum Rated Flow at Vessel Pressure	GPM psid (vessel to drywell)	Fig. 6.3-7 20
q	Initiating signals low water level or high drywell pressure plus low reactor pressure permissive	ft. above top of active fuel psig psig	≤ 1.0 ≥ 2.0 400
o	Maximum allowable time delay from initiating signal to pumps at rated speed	sec	40.0
o	pressure at which injection valve may open	psig (vessel pressure)	400
o	Injection valve open to rated flow following a 100% recirculation suction line break	sec after initiating signal	40.0
o	pressure at which recirculation discharge valve signaled to close	psig	200
o	Maximum allowed recirculation discharge valve closing time	sec	33

Core Spray System

o	Vessel pressure at which flow may commence	psid (vessel to drywell)	289
o	Minimum rated flow at Vessel Pressure	GPM/Pump psid (vessel to drywell)	6250** 105

**Accounts for 100 gpm leakage in the piping connection between the vessel nozzle and the shroud.

TABLE 6.3-2 (Page 3)

o Initiating signals			
low water level	ft. above top of active fuel		≤ 1.0
or			
high Drywell Pressure plus low reactor pressure permis- sive	psig		≥ 2.0
	psig		400
o Maximum allowed (runout) flow			
	GPM/Pump		7900
o Maximum allowed delay time from initiating signal to pump at rated speed			
	sec		27.0
o Pressure at which injection valve may open			
	psig		400
	(vessel pressure)		
o Injection valve open to rated flow following a 100% recirculation suction line break			
	sec after ini- tiating signal		27

High Pressure Coolant Injection

o Vessel pressure at which flow may commence			
	psia		1160
o Minimum rated flow available at vessel pressure			
	GPM		5000
	psia		1160 to 165
	(vessel to pump suction)		
o Initiating Signals			
low water level	ft above top of active fuel		≤ 8.58
or			
high Drywell Pressure	psig		≥ 2.0
o Maximum allowed delay time from initia- ting signal to rated flow available and injection valve wide open			
	sec		30

TABLE 6.3-2 (Page 4)

Automatic Depressurization System

o	Total number of valves installed		6
o	Number of valves used in analysis		5
o	Minimum Flow Capacity of 1b/hr any 5 valves at vessel pressure		4.0 x 10 ⁶
		psid (vessel to suppression pool)	1125
o	Initiating Signals		
	low water level	ft above top of active fuel	≤ 1.0
	and		
	high. Drywell Pressure	psig	≥ 2.0
	and		
	Signal that at least 1 LPCI pump or 1 CS loop (2 pumps per loop) are running (pump discharge pressure)	(CS) psig (LPCI) psig	130 100
o	Delay time from all initiating signals completed to the time valves are open	sec	120

TABLE 3.3.3-1

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

<u>TRIP FUNCTION</u>	<u>MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM ^(a)</u>	<u>APPLICABLE OPERATIONAL CONDITIONS</u>	<u>ACTION</u>
1. CORE SPRAY SYSTEM			
a. Reactor Vessel Water Level - Low Low Low, Level 1	2(a)	1, 2, 3, 4*, 5*	30
b. Drywell Pressure - High	2(a)	1, 2, 3	30
c. Reactor Vessel Steam Dome Pressure - Low (Permissive)	2(a)	1, 2, 3 4*, 5*	31 32
d. Manual Initiation	1/subsystem	1, 2, 3, 4*, 5*	33
2. LOW PRESSURE COOLANT INJECTION MODE OF RHR SYSTEM			
a. Reactor Vessel Water Level - Low Low Low, Level 1	2(a)	1, 2, 3, 4*, 5*	30
b. Drywell Pressure - High	2(a)	1, 2, 3	30
c. Reactor Vessel Steam Dome Pressure - Low (Permissive)	2	1, 2, 3 4*, 5*	31 32
d. Manual Initiation	1/subsystem	1, 2, 3, 4*, 5*	33
3. HIGH PRESSURE COOLANT INJECTION SYSTEM[#]			
a. Reactor Vessel Water Level - Low Low, Level 2	2(a)	1, 2, 3	30
b. Drywell Pressure - High	2(a)	1, 2, 3	30
c. Condensate Storage Tank Level - Low	(a) → 2(b)	1, 2, 3	34
d. Suppression Pool Water Level - High	2(a)	1, 2, 3	34
e. Reactor Vessel Water Level - High, Level 8	2(c)	1, 2, 3	31
f. Manual Initiation	1/system	1, 2, 3	33

1) System Initiation

2) Recirculation Discharge Valve Closure

2(a)

2(a)

1, 2, 3. 31
4*, 5* 32
1, 2, 3 31
4*, 5* 32

g. ADS Drywell Pressure Bypass Timer
 h. Manual Inhibit

2^(f) 1,2,3 37
 1 1,2,3 33

TABLE 3.3.3-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

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<u>TRIP FUNCTION</u>	<u>MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM^(a)</u>	<u>APPLICABLE OPERATIONAL CONDITIONS</u>	<u>ACTION</u>
4. <u>AUTOMATIC DEPRESSURIZATION SYSTEM^{##}</u>			
a. Reactor Vessel Water Level - Low, Low Low, Level 1	2 ^(f)	1, 2, 3	30 37
b. Drywell Pressure - High	2 ^(f)	1, 2, 3	30 37
c. ADS Timer	1 ^(f)	1, 2, 3	31 37
d. Core Spray Pump Discharge Pressure - High (Permissive)	1/loop ^{2^{(d)(f)}}	1, 2, 3	31 37
e. RHR LPCI Mode Pump Discharge Pressure - High (Permissive)	1/loop ^{2^{(d)(e)(f)}}	1, 2, 3	31 37
f. Reactor Vessel Water Level - Low, Level 3 (Permissive)	1 ^(f)	1, 2, 3	31 37
g. Manual Initiation	1/valve	1, 2, 3	33

	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE OPERATIONAL CONDITIONS</u>	<u>ACTION</u>
5. <u>LOSS OF POWER</u>					
a. 4.16 kv ESS Bus Under-voltage (Loss of Voltage, <20%)	1/bus	1/bus	1/bus	1, 2, 3, 4**, 5**	35
b. 4.16 kv ESS Bus Under-voltage (Degraded Voltage, <65%)	2/bus	2/bus	2/bus	1, 2, 3, 4**, 5**	36
c. 4.16 kv ESS Bus Under-voltage (Degraded Voltage <84%)	2/bus	2/bus	2/bus	1, 2, 3, 4**, 5**	36

- (a) A channel may be placed in an inoperable status for up to 2 hours for required surveillance without placing the trip system in the tripped condition provided at least one OPERABLE channel in the same trip system is monitoring that parameter.
 - (b) One trip system. Provides signal to HPCI pump suction valves only.
 - (c) Two out of two logic.
- * When the system is required to be OPERABLE per Specification 3.5.2.
 # Not required to be OPERABLE when reactor steam dome pressure is less than or equal to 150 psig.
 ** Required when ESF equipment is required to be OPERABLE.
 ### Not required to be OPERABLE when reactor steam dome pressure is less than or equal to 100 psig.

INSERT
 (A)

- (d) Either 4d or 4e must be satisfied. The ACTION is required to be taken only if neither is satisfied. A channel is not OPERABLE unless its associated pump is OPERABLE per Specification 3.5.1.
- (e) Within an ADS Trip System there are two logic subsystems, each of which contains an overall pump permissive. At least one channel associated with each of these overall pump permissives shall be OPERABLE.
- (f) A channel may be placed in an inoperable status for up to 2 hours for required surveillance testing provided that all channels in the other trip system are OPERABLE.

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATIONACTION.

- ACTION 30 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement:
- a. For one trip system, place the inoperable trip system in the tripped condition within one hour* or declare the associated ECCS inoperable.
 - b. For both trip systems, declare the associated ECCS inoperable.
- ACTION 31 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, declare the associated ECCS inoperable.
- ACTION 32 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement, place the inoperable channel in the tripped condition within one hour.
- ACTION 33 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, restore the inoperable channel to OPERABLE status within 8 hours or declare the associated ECCS inoperable.
- ACTION 34 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement, place at least one inoperable channel in the tripped condition within one hour* or declare the HPCI system inoperable.
- ACTION 35 - With the number of OPERABLE channels less than the Total Number of Channels, declare the associated emergency diesel generator inoperable and take the ACTION required by Specification 3.8.1.1 or 3.8.1.2, as appropriate.
- ACTION 36 - With the number of OPERABLE channels one less than the Total Number of Channels, place the inoperable channel in the tripped condition within 1 hour;* operation may then continue until performance of the next required CHANNEL FUNCTIONAL TEST.

→ INSERT (B)

*The provisions of Specification 3.0.4 are not applicable.

INSERT (B)

ACTION 37 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement:

2. For either ADS trip system A (Division I) or B (Division II), provided the HPCI system, the CSS and the LPCI system are OPERABLE, restore the inoperable trip system to OPERABLE status within 14 days or be in at least HOT SHUTDOWN within the next 12 hours and reduce reactor steam dome pressure to ≤ 100 psig within the next 24 hours.
- b. For both ADS trip systems A (Division I) and B (Division II), be in at least HOT SHUTDOWN within the next 12 hours and reduce reactor steam dome pressure to ≤ 100 psig within the next 24 hours.

g. ADS Drywell Pressure Bypass Timer

≤ 420 seconds

≤ 450 seconds

h. Manual Inhibit

NA

NA

TABLE 3.3.3-2 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION SETPOINTS

TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
4. AUTOMATIC DEPRESSURIZATION SYSTEM		
a. Reactor Water Level - Low Low Low, Level 1	≥ -129 inches*	≥ -136 inches
b. Drywell Pressure - High	≤ 1.72 psig	≤ 1.88 psig
c. ADS Timer	≤ 102 seconds	≤ 114 seconds
d. Core Spray Pump Discharge Pressure - High	145 ± 10 psig	145 ± 20 psig
e. RHR LPCI Mode Pump Discharge Pressure - High	125 ± 4 psig	125 ± 10 psig
f. Reactor Vessel Water Level-Low, Level 3	≥ 13 inches	≥ 11.5 inches
g. i. Manual Initiation	NA	NA
5. LOSS OF POWER		
a. 4.16 kv ESS Bus Undervoltage (Loss of Voltage, <20%)	a. 4.16 kv Basis - 840 ± 16.8 volts	840 ± 59.6 volts
	b. 120 v Basis - 24 ± 0.48 volts	24 ± 1.7 volts
	c. 0.5 ± 0.1 second time delay	0.5 ± 0.1 second time delay
b. 4.16 kv ESS Bus Undervoltage (Degraded Voltage, <65%)	a. 4.16 kv Basis - 2695 ± 53.9 volts	2695 ± 191.3 volts
	b. 120 v Basis - 77 ± 1.54 volts	77 ± 5.5 volts
	c. 3.0 ± 0.3 second time delay	3 ± 0.3 second time delay
c. 4.16 kv ESS Bus Undervoltage (Degraded Voltage, <84%)	a. 4.16 kv Basis - 3483 ± 69.7 volts	3483 ± 247.3, - 69.7 volts
	b. 120 v Basis - 99.5 ± 1.99 volts	99.5 ± 7.1 volts
	c. 5 minute ± 30 second time delay without LOCA 10 ± 1.0 second time delay with LOCA	5 minutes ± 30 second time delay without LOCA 10 ± 1.0 second time delay with LOCA

* See Bases Figure B 3/4 3-1.

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A

TABLE 3.3.3-3

EMERGENCY CORE COOLING SYSTEM RESPONSE TIMES

<u>TRIP FUNCTION</u>	<u>RESPONSE TIME (Seconds)</u>
<u>1. CORE SPRAY SYSTEM</u>	
a. Reactor Vessel Water Level-Low Low Low, Level 1	<27
b. Drywell Pressure-High	<27
c. Reactor Vessel Steam Dome Pressure-Low	<27
d. Manual Initiation	NA
<u>2. LOW PRESSURE COOLANT INJECTION MODE OF RHR SYSTEM</u>	
a. Reactor Vessel Water Level-Low Low Low, Level 1	<40
b. Drywell Pressure-High	<40
c. Reactor Vessel Steam Dome Pressure-Low	
1) System Initiation	<40
2) Recirculation Discharge Valve Closure	<40
d. Manual Initiation	NA
<u>3. HIGH PRESSURE COOLANT INJECTION SYSTEM</u>	
a. Reactor Vessel Water Level - Low Low, Level 2	<30
b. Drywell Pressure - High	<30
c. Condensate Storage Tank Level-Low	NA
d. Reactor Vessel Water Level-High, Level 8	NA
e. Suppression Pool Water Level-High	NA
f. Manual Initiation	NA
<u>4. AUTOMATIC DEPRESSURIZATION SYSTEM</u>	
a. Reactor Vessel Water Level-Low Low Low, Level 1	NA
b. Drywell Pressure-High	NA
c. ADS Timer	NA
d. Core Spray Pump Discharge Pressure-High	NA
e. RHR LPCI Mode Pump Discharge Pressure-High	NA
f. Reactor Vessel Water Level-Low, Level 3	NA
g. Manual Initiation	NA
<u>5. LOSS OF POWER</u>	
a. 4.16 kV ESS Bus Undervoltage (Loss of Voltage <20%)	NA
b. 4.15 kV ESS Bus Undervoltage (Degraded Voltage <65%)	NA
c. 4.16 kV ESS Bus Undervoltage (Degraded Voltage <84%)	NA
g. ADS Drywell Pressure Bypass Timer	NA
h. Manual Inhibit	NA

g. ADS Drywell Pressure Bypass Timer NA M Q 1,2,3

h. Manual Inhibit NA R NA 1,2,3

TABLE 4.3.3.1-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>TRIP FUNCTION</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>CHANNEL CALIBRATION</u>	<u>OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED</u>
4. <u>AUTOMATIC DEPRESSURIZATION SYSTEM</u> ##				
a. Reactor Vessel Water Level - Low Low Low, Level 1	S	M	R	1, 2, 3
b. Drywell Pressure - High	NA	M	Q	1, 2, 3
c. ADS Timer	NA	M	Q	1, 2, 3
d. Core Spray Pump Discharge Pressure - High	NA	M	Q	1, 2, 3
e. RHR LPCI Mode Pump Discharge Pressure-High	NA	M	Q	1, 2, 3
f. Reactor Vessel Water Level-Low, Level 3	S	M	R	1, 2, 3
g. i. Manual Initiation	NA	R	NA	1, 2, 3
5. <u>LOSS OF POWER</u>				
a. 4.16 kv ESS Bus Undervoltage (Loss of Voltage)	NA	NA	R	1, 2, 3, 4**, 5**
b. 4.16 kv ESS Bus Undervoltage (Degraded Voltage)	S	M	R	1, 2, 3, 4**, 5**
c. 4.16 kv ESS Bus Undervoltage (Degraded Voltage)	S	M	R	1, 2, 3, 4**, 5**

* When the system is required to be OPERABLE, after being manually realigned, as applicable, per Specification 3.5.2.

** Required OPERABLE when ESF equipment is required to be OPERABLE.

Not required to be OPERABLE when reactor steam dome pressure is less than or equal to 150 psig.

Not required to be OPERABLE when reactor steam dome pressure is less than or equal to 100 psig.

TABLE 3.3.3-1

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

<u>TRIP FUNCTION</u>	<u>MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM</u>	<u>APPLICABLE OPERATIONAL CONDITIONS</u>	<u>ACTION</u>
1. CORE SPRAY SYSTEM			
a. Reactor Vessel Water Level - Low Low Low, Level 1	2 (a)	1, 2, 3, 4*, 5*	30
b. Drywell Pressure - High	2 (a)	1, 2, 3	30
c. Reactor Vessel Steam Dome Pressure - Low (Permissive)	2 (a)	1, 2, 3, 4*, 5*	31 32
d. Manual Initiation	1/subsystem	1, 2, 3, 4*, 5*	33
2. LOW PRESSURE COOLANT INJECTION MODE OF RHR SYSTEM			
a. Reactor Vessel Water Level - Low Low Low, Level 1	2 (a)	1, 2, 3, 4*, 5*	30
b. Drywell Pressure - High	2 (a)	1, 2, 3	30
c. Reactor Vessel Steam Dome Pressure - Low (Permissive)			
1) System Initiation	2 (a)	1, 2, 3, 4*, 5*	31 32
2) Recirculation Discharge Valve Closure	2 (a)	1, 2, 3, 4*, 5*	31 32
d. Manual Initiation	1/subsystem	1, 2, 3, 4*, 5*	33
3. HIGH PRESSURE COOLANT INJECTION SYSTEM[#]			
a. Reactor Vessel Water Level - Low Low, Level 2	2 (a)	1, 2, 3	30
b. Drywell Pressure - High	(a) 2 (a)	1, 2, 3	30
c. Condensate Storage Tank Level - Low	2 (b)	1, 2, 3	34
d. Suppression Pool Water Level - High	2 (a)	1, 2, 3	34
e. Reactor Vessel Water Level - High, Level 8	2 (c)	1, 2, 3	31
f. Manual Initiation	1/system	1, 2, 3	33

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TABLE 3.3.3-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

<u>TRIP FUNCTION</u>	<u>MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM (a)</u>	<u>APPLICABLE OPERATIONAL CONDITIONS</u>	<u>ACTION</u>
4. <u>AUTOMATIC DEPRESSURIZATION SYSTEM##</u>			
a. Reactor Vessel Water Level - Low Low Low, Level 1	2 (f)	1, 2, 3	30 37
b. Drywell Pressure - High	2 (f)	1, 2, 3	30 37
c. ADS Timer	1 (f)	1, 2, 3	31 37
d. Core Spray Pump Discharge Pressure - High (Permissive)	1/loop 2 (d)(f)	1, 2, 3	31 37
e. RHR LPCI Mode Pump Discharge Pressure - High (Permissive)	1/loop 2 (d)(e)(f)	1, 2, 3	31 37
f. Reactor Vessel Water Level - Low, Level 3 (Permissive)	1 (f)	1, 2, 3	31 37
g. Manual Initiation	1/valve	1, 2, 3	33
g. ADS Drywell Pressure Bypass Timer	2 (f)	1, 2, 3	31 37
h. Manual Inhibit	1	1, 2, 3	33

	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE OPERATIONAL CONDITIONS</u>	<u>ACTION</u>
5. <u>LOSS OF POWER.</u>					
a. 4.16 kV ESS Bus Under-voltage (Loss of Voltage, <20%)	1/bus	1/bus	1/bus	1, 2, 3, 4**, 5**	35
b. 4.16 kV ESS Bus Under-voltage (Degraded Voltage, <65%)	2/bus	2/bus	2/bus	1, 2, 3, 4**, 5**	36
c. 4.16 kV ESS Bus Under-voltage (Degraded Voltage <84%)	2/bus	2/bus	2/bus	1, 2, 3, 4**, 5**	36

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

(b) One trip system. Provides signal to HPCI pump suction valves only.

(c) Two out of two logic.

* When the system is required to be OPERABLE per Specification 3.5.2.

Not required to be OPERABLE when reactor steam dome pressure is less than or equal to 150 psig.

** Required when ESF equipment is required to be OPERABLE.

Not required to be OPERABLE when reactor steam dome pressure is less than or equal to 100 psig.

INSERT.
A

- (d) Either 4d or 4e must be satisfied. The ACTION is required to be taken only if neither is satisfied. A channel is not OPERABLE unless its associated pump is OPERABLE per Specification 3.5.1.
- (e) Within an ADS Trip System there are two logic subsystems, each of which contains an overall pump permissive. At least one channel associated with each of these overall pump permissives shall be OPERABLE.
- (f) A channel may be placed in an inoperable status for up to 2 hours for required surveillance testing provided that all channels in the other trip system are OPERABLE.

TABLE 3.3.3-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

ACTION STATEMENTS

- ACTION 30 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement:
- a. For one trip system, place the inoperable trip system in the tripped condition within 1 hour* or declare the associated ECCS inoperable.
 - b. For both trip systems, declare the associated ECCS inoperable.
- ACTION 31 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement, declare the associated ECCS inoperable.
- ACTION 32 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement, place the inoperable channel in the tripped condition within 1 hour.
- ACTION 33 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement, restore the inoperable channel to OPERABLE status within 8 hours or declare the associated ECCS inoperable.
- ACTION 34 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement, place at least one inoperable channel in the tripped condition within 1 hour* or declare the HPCI system inoperable.
- ACTION 35 - With the number of OPERABLE channels less than the Total Number of Channels, declare the associated emergency diesel generator inoperable and take the ACTION required by Specification 3.8.1.1 or 3.8.1.2, as appropriate.
- ACTION 36 - With the number of OPERABLE channels one less than the Total Number of Channels, place the inoperable channel in the tripped condition within 1 hour;* operation may then continue until performance of the next required CHANNEL FUNCTIONAL TEST.

→ INSERT

(B)

*The provisions of Specification 3.0.4 are not applicable.

INSERT (B)

ACTION 37 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement:

- a. For either ADS trip system A (Division I) or B (Division II), provided the HPCI system, the CSS and the LPCI system are OPERABLE, restore the inoperable trip system to OPERABLE status within 14 days or be in at least HOT SHUTDOWN within the next 12 hours and reduce reactor steam dome pressure to ≤ 100 psig within the next 24 hours.
- b. For both ADS trip systems A (Division I) and B (Division II), be in at least HOT SHUTDOWN within the next 12 hours and reduce reactor steam dome pressure to ≤ 100 psig within the next 24 hours.

TABLE 3.3.3-2 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION SETPOINTS

TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
4. AUTOMATIC DEPRESSURIZATION SYSTEM		
a. Reactor Water Level - Low Low, Low, Level 1	≥ -129 inches*	≥ -136 inches
b. Drywell Pressure - High	≤ 1.72 psig	≤ 1.88 psig
c. ADS Timer	≤ 102 seconds	≤ 114 seconds
d. Core Spray Pump Discharge Pressure - High	145 ± 10 psig	145 ± 20 psig
e. RHR LPCI Mode Pump Discharge Pressure - High	125 ± 4 psig	125 ± 10 psig
f. Reactor Vessel Water Level-Low, Level 3	≥ 13 inches	≥ 11.5 inches
g. Manual Initiation	NA	NA
h. ADS Drywell Pressure Bypass Timer	≤ 420 seconds	≤ 450 seconds
i. Manual Inhibit	NA	NA
5. LOSS OF POWER		
a. 4.16 kV ESS Bus Undervoltage (Loss of Voltage, <20%)	a. 4.16 kV Basis - 840 ± 16.8 volts b. 120 V Basis - 24 ± 0.48 volts c. 0.5 ± 0.1 second time delay	840 ± 59.6 volts 24 ± 1.7 volts 0.5 ± 0.1 second time delay
b. 4.16 kV ESS Bus Undervoltage (Degraded Voltage, <65%)	a. 4.16 kV Basis - 2695 ± 53.9 volts b. 120 v Basis - 77 ± 1.54 volts c. 3.0 ± 0.3 second time delay	2695 ± 191.3 volts 77 ± 5.5 volts 3 ± 0.3 second time delay
c. 4.16 kV ESS Bus Undervoltage (Degraded Voltage, <84%)	a. 4.16 kV Basis - 3483 ± 69.7 volts b. 120 V Basis - 99.5 ± 1.99 volts c. 5 minute ± 30 second time delay without LOCA 10 ± 1.0 second time delay with LOCA	3483 ± 247.3 , -69.7 volts 99.5 ± 7.1 volts, -1.99 volts 5 minutes ± 30 second time delay without LOCA 10 ± 1.0 second time delay with LOCA

* See Bases Figure B 3/4 3-1.

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TABLE 3.3.3-3

EMERGENCY CORE COOLING SYSTEM RESPONSE TIMES

<u>TRIP FUNCTION</u>	<u>RESPONSE TIME (Seconds)</u>
<u>1. CORE SPRAY SYSTEM</u>	
a. Reactor Vessel Water Level-Low Low Low, Level 1	<27
b. Drywell Pressure-High	<27
c. Reactor Vessel Steam Dome Pressure-Low	<27
d. Manual Initiation	NA
<u>2. LOW PRESSURE COOLANT INJECTION MODE OF RHR SYSTEM</u>	
a. Reactor Vessel Water Level-Low Low Low, Level 1	<40
b. Drywell Pressure-High	<40
c. Reactor Vessel Steam Dome Pressure-Low	
1) System Initiation	<40
2) Recirculation Discharge Valve Closure	<40
d. Manual Initiation	NA
<u>3. HIGH PRESSURE COOLANT INJECTION SYSTEM</u>	
a. Reactor Vessel Water Level - Low Low, Level 2	<30
b. Drywell Pressure - High	<30
c. Condensate Storage Tank Level-Low	NA
d. Reactor Vessel Water Level-High, Level 8	NA
e. Suppression Pool Water Level-High	NA
f. Manual Initiation	NA
<u>4. AUTOMATIC DEPRESSURIZATION SYSTEM</u>	
a. Reactor Vessel Water Level-Low Low Low, Level 1	NA
b. Drywell Pressure-High	NA
c. ADS Timer	NA
d. Core Spray Pump Discharge Pressure-High	NA
e. RHR LPCI Mode Pump Discharge Pressure-High	NA
f. Reactor Vessel Water Level-Low, Level 3	NA
g. Manual Initiation	NA
<u>5. LOSS OF POWER</u>	
a. 4.16 kV ESS Bus Undervoltage (Loss of Voltage <20%)	NA
b. 4.16 kV ESS Bus Undervoltage (Degraded Voltage <65%)	NA
c. 4.16 kV ESS Bus Undervoltage (Degraded Voltage <84%)	NA
g. ADS Drywell Pressure Bypass Timer	NA
h. Manual Inhibit	NA

TABLE 4.3.3.1-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>TRIP FUNCTION</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>CHANNEL CALIBRATION</u>	<u>OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED</u>
4. <u>AUTOMATIC DEPRESSURIZATION SYSTEM</u> ^{##}				
a. Reactor Vessel Water Level - Low Low Low, Level 1	S	M	R	1, 2, 3
b. Drywell Pressure - High	NA	M	Q	1, 2, 3
c. ADS Timer	NA	M	Q	1, 2, 3
d. Core Spray Pump Discharge Pressure - High	NA	M	Q	1, 2, 3
e. RHR LPCI Mode Pump Discharge Pressure-High	NA	M	Q	1, 2, 3
f. Reactor Vessel Water Level-Low, Level 3	S	M	R	1, 2, 3
g. Manual Initiation	NA	R	NA	1, 2, 3
h. ADS Drywell Pressure Bypass Timer	NA	M	Q	1, 2, 3
i. Manual Inhibit	NA	R	NA	1, 2, 3
5. <u>LOSS OF POWER</u>				
a. 4.16 kv ESS Bus Undervoltage (Loss of Voltage)	NA	NA	R	1, 2, 3, 4**, 5**
b. 4.16 kv ESS Bus Undervoltage (Degraded Voltage)	S	M	R	1, 2, 3, 4**, 5**
c. 4.16 kv ESS Bus Undervoltage (Degraded Voltage)	S	M	R	1, 2, 3, 4**, 5**

* When the system is required to be OPERABLE, after being manually realigned, as applicable, per Specification 3.5.2.

** Required OPERABLE when ESF equipment is required to be OPERABLE.

Not required to be OPERABLE when reactor steam dome pressure is less than or equal to 150 psig.

Not required to be OPERABLE when reactor steam dome pressure is less than or equal to 100 psig.

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