

ATTACHMENT A
Existing Specifications
Unit 2

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
7. LOSS OF POWER (LOV)					
a. 4.16 kv Emergency Bus Undervoltage (Loss of Voltage and Degraded Voltage)	4/Bus	2/Bus	3/Bus	1, 2, 3, 4	9 ^A , 10 ^A
8. EMERGENCY FEEDWATER (EFAS)					
a. Manual (Trip Buttons)	2 sets of 2 per S/G	1 set of 2 per S/G	2 sets of 2 per S/G	1, 2, 3	11
b. Automatic Actuation Logic	4/SG	2/SG	3/SG	1, 2, 3	9 ^A , 10 ^A
c. SG Level (A/B) - Low and ΔP (A/B) - High	4/SG	2/SG	3/SG	1, 2, 3	9 ^A , 10 ^A
d. SG Level (A/B) - Low and No S/G Pressure - Low Trip (A/B)	4/SG	2/SG	3/SG	1, 2, 3	9 ^A , 10 ^A

TABLE 3.3-3 (Continued)

TABLE NOTATION

- (a) Trip function may be bypassed in this MODE when pressurizer pressure is less than 400 psia; bypass shall be automatically removed when pressurizer pressure is greater than or equal to 400 psia.
- (b) An SIAS signal is first necessary to enable CSAS logic.
- (c) Actuated equipment only; does not result in CIAS.
- # The provisions of Specification 3.0.3 are not applicable.
- * The provisions of Specification 3.0.4 are not applicable.
- ** With irradiated fuel in the storage pool.

ACTION STATEMENTS

ACTION 8 - With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION 9 - With the number of channels OPERABLE one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may continue provided the inoperable channel is placed in the bypassed or tripped condition within 1 hour. If the inoperable channel is bypassed, the desirability of maintaining this channel in the bypassed condition shall be reviewed in accordance with Specification 6.5.1.6e. The channel shall be returned to OPERABLE status no later than during the next COLD SHUTDOWN.

With a channel process measurement circuit that affects multiple functional units inoperable or in test, bypass or trip all associated functional units as listed below.

Process Measurement Circuit	Functional Unit Bypassed
1. Containment Pressure - High	Containment Pressure - High (ESF) Containment Pressure - High (RPS)
2. Steam Generator Pressure - Low	Steam Generator Pressure - Low Steam Generator ΔP 1 and 2 (EFAS)
3. Steam Generator Level	Steam Generator Level - Low Steam Generator Level - High Steam Generator ΔP (EFAS)

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP VALUES

FUNCTIONAL UNIT	TRIP VALUE	ALLOWABLE VALUES
6. CONTAINMENT COOLING (CCAS)		
a. Manual CCAS (Trip Buttons)	Not Applicable	Not Applicable
b. Manual SIAS (Trip Buttons)	Not Applicable	Not Applicable
c. Automatic Actuation Logic	Not Applicable	Not Applicable
7. LOSS OF POWER (LOV)		
a. 4.16 kv Emergency Bus Undervoltage (Loss of Voltage and Degraded Voltage)	See Fig. 3.3-1 (4)	See Fig. 3.3-1 (4)
8. EMERGENCY FEEDWATER (EFAS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Steam Generator (A&B) Level-Low	$\geq 21\%$ (3)	$\geq 20\%$ (3)
c. Steam Generator ΔP -High (SG-A > SG-B)	≤ 125 psi	≤ 140 psi
d. Steam Generator ΔP -High (SG-B > SG-A)	≤ 125 psi	≤ 140 psi
e. Steam Generator (A&B) Pressure - Low	≥ 741 psia (2)	≥ 729 psia (2)
f. Automatic Actuation Logic	Not Applicable	Not Applicable

TABLE 3.3-4 (Continued)

TABLE NOTATION

- (1) Value may be decreased manually, to a minimum of greater than or equal to 300 psia, as pressurizer pressure is reduced, provided the margin between the pressurizer and this value is maintained at less than or equal to 400 psia;^a the setpoint shall be increased automatically as pressurizer pressure is increased until the trip setpoint is reached. Trip may be manually bypassed below 400 psia; bypass shall be automatically removed whenever pressurizer is greater than or equal to 400 psia.
- (2) Value may be decreased manually as steam generator pressure is reduced, provided the margin between the steam generator pressure and this value is maintained at less than or equal to 200 psi;^a the setpoint shall be increased automatically as steam generator pressure is increased until the trip setpoint is reached.
- (3) X of the distance between steam generator upper and lower level instrument nozzles.
- (4) Inverse time relay set value 3165V, trip will occur within the tolerances specified in Figure 3.3-1 for the range of bus voltages.
- (5) Actuated equipment only; does not result in CIAS.
- (6) The trip setpoint shall be set sufficiently high to prevent spurious alarms/trips yet sufficiently low to assure an alarm/trip should an inadvertent release occur.
- (7) Prior to the completion of DCP 53M, the setpoints for Containment Airborne Radiation Monitor 2RT-7804-1 shall be determined by the ODCM.
- (8) The trip setpoint shall be set sufficiently high to prevent spurious alarm/trips yet sufficiently low to assure an alarm/trip should a fuel handling accident occur.

^a Variable setpoints are for use only during normal, controlled plant heatups and cooldowns.

^{aa} Above normal background.

INITIATING SIGNAL AND FUNCTION5. Steam Generator Pressure - Low

MSIS

- | | |
|--|------|
| (1) Main Steam Isolation (HV8204, HV8205) | 8.9 |
| (2) Main Feedwater Isolation (HV4048, HV4052) | 10.9 |
| (3) Steam, Blowdown and Sample Isolation
(HV8419, HV8421)
(HV4053, HV4054, HV4057, HV4058) | 20.9 |
| (4) Auxiliary Feedwater Isolation (NOTE 7)
(HV4705, HV4713, HV4730, HV4731)
(HV4706, HV4712, HV4714, HV4715) | 40.9 |

6. Refueling Water Storage Tank - Low

RAS

- | | |
|--|----------------|
| (1) Containment Sump Valves Open | 50.7* |
| (2) ECCS Miniflow Isolation Valves Close | 50.7* (Note 8) |

7. 4.16 kv Emergency Bus Undervoltage

LOV (loss of voltage and degraded voltage)

Figure 3.3-1

8. Steam Generator Level - Low (and No Pressure-Low Trip)

EFAS

- | | |
|--|---------------|
| (1) Auxiliary Feedwater (AC trains) | 52.7*/52.7** |
| (2) Auxiliary Feedwater (Steam/DC train) | 42.7 (NOTE 5) |

9. Steam Generator Level - Low (and ΔP - High)

EFAS

- | | |
|--|---------------|
| (1) Auxiliary Feedwater (AC trains) | 52.7*/52.7** |
| (2) Auxiliary Feedwater (Steam/DC train) | 42.7 (NOTE 5) |

10. Control Room Ventilation Airborne Radiation

CRIS

- | | |
|---|----------------|
| (1) Control Room Ventilation - Emergency Mode | Not Applicable |
|---|----------------|

11. Control Room Toxic Gas (Chlorine)

TGIS

- | | |
|---|-------------|
| (1) Control Room Ventilation - Isolation Mode | 16 (NOTE 5) |
|---|-------------|

12. Control Room Toxic Gas (Ammonia)

TGIS

- | | |
|---|-------------|
| Control Room Ventilation - Isolation Mode | 36 (NOTE 5) |
|---|-------------|

INITIATING SIGNAL AND FUNCTION	RESPONSE TIME (SEC)
13. <u>Control Room Toxic Gas (Butane/Propane)</u> TGIS	
Control Room Ventilation - Isolation Mode	36 (NOTE 5)
14. <u>Fuel Handling Building Airborne Radiation</u> FHIS	
Fuel Handling Building Post-Accident Cleanup Filter System	Not Applicable
15. <u>Containment Airborne Radiation</u> CPIS	
Containment Purge Isolation	2 (NOTE 2)
16. <u>Containment Area Radiation</u> CPIS	
Containment Purge Isolation	2 (NOTE 2)

NOTES:

1. Response times include movement of valves and attainment of pump or blower discharge pressure as applicable.
2. Response time includes emergency diesel generator starting delay (applicable to A.C. motor-operated valves other than containment purge valves), instrumentation and logic response only. Refer to Table 3.6-1 for containment isolation valve closure times.
3. All CIAS-actuated valves except MSIVs, MFIVs, and CCW Valves 2HV-6211, 2HV-6216, 2HV-6223 and 2HV-6236.
- 4a. CCW noncritical loop isolation Valves 2HV-6212, 2HV-6213, 2HV-6218, and 2HV-6219 close.
- 4b. Containment emergency cooler CCW isolation Valves 2HV-6366, 2HV-6367, 2HV-6368, 2HV-6369, 2HV-6370, 2HV-6371, 2HV-6372, and 2HV-6373 open.
5. Response time includes instrumentation, logic, and isolation damper closure times only.
6. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3.
7. Include HV4762 and HV4763 following implementation of DCP 195J.
8. Prior to completion of DCP 6234, valve closure is manually initiated. Following completion of DCP 6234, valves are to close automatically on a RAS coincident with a high-high containment sump signal.
- * Emergency diesel generator starting delay (10 sec.) and sequence loading delays for SIAS are included.
- ** Emergency diesel generator starting delay (10 sec.) is included.

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
7. LOSS OF POWER (LOV)				
a. 4.16 kv Emergency Bus Undervoltage (Loss of Voltage and Degraded Voltage)	S	(6)	(6)	1, 2, 3, 4
8. EMERGENCY FEEDWATER (EFAS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3
b. SG Level (A/B)-Low and ΔP (A/B) - High	S	(6)	Q	1, 2, 3
c. SG Level (A/B) - Low and No Pressure - Low Trip (A/B)	S	(6)	Q	1, 2, 3
d. Automatic Actuation Logic	N.A.	N.A.	Q(3), SA(4)	1, 2, 3
9. CONTROL ROOM ISOLATION (CRIS)				
a. Manual CRIS (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Manual SIAS (Trip Buttons)	N.A.	N.A.	R	N.A.
c. Airborne Radiation				All
i. Particulate/Iodine	S	R	M	All
ii. Gaseous	S	R	M	All
d. Automatic Actuation Logic	N.A.	N.A.	R(3)	All
10. TOXIC GAS ISOLATION (TGIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Chlorine - High	S	R	M	All
c. Ammonia - High	S	R	M	All
d. Butane/Propane - High	S	R	M	All
e. Automatic Actuation Logic	N.A.	N.A.	R (3)	All

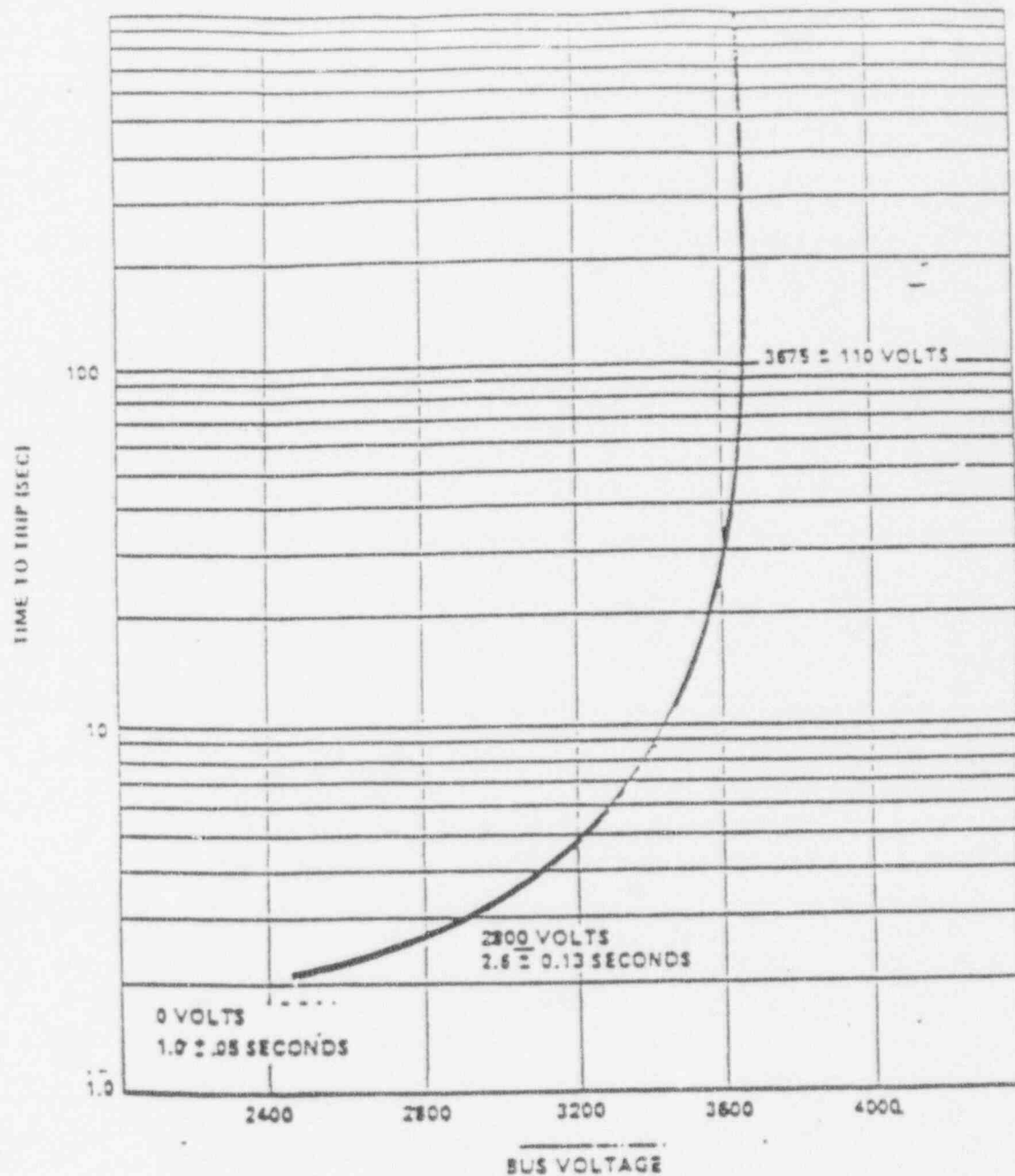


Figure 3.3-1
DEGRADED BUS VOLTAGE TRIP SETTING.

ATTACHMENT B
Existing Specifications
Unit 3

TABLE 3.3-3 (Continued)
ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
7. LOSS OF POWER (LOP)					
a. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage and Degraded Voltage)	4/Bus	2/Bus	3/Bus	1, 2, 3, 4	9 ^a , 10 ^a
8. EMERGENCY FEEDWATER (EFAS)					
a. Manual (Trip Buttons)	2 sets of 2 per S/G	1 set of 2 per S/G	2 sets of 2 per S/G	1, 2, 3	11
b. Automatic Actuation Logic	4/SG	2/SG	3/SG	1, 2, 3	9 ^a , 10 ^a
c. SG Level (A/B) - Low and AP (A/B) - High	4/SG	2/SG	3/SG	1, 2, 3	9 ^a , 10 ^a
d. SG Level (A/B) - Low and No S/G Pressure - Low Trip (A/B)	4/SG	2/SG	3/SG	1, 2, 3	9 ^a , 10 ^a

TABLE 3.3-3 (Continued)

TABLE NOTATION

- (a) Trip function may be bypassed in this MODE when pressurizer pressure is less than 400 psia; bypass shall be automatically removed when pressurizer pressure is greater than or equal to 400 psia.
- (b) An SIAS signal is first necessary to enable CSAS logic.
- (c) Actuated equipment only; does not result in CIAS.
- # The provisions of Specification 3.0.3 are not applicable.
- * The provisions of Specification 3.0.4 are not applicable.
- ** With irradiated fuel in the storage pool.

ACTION STATEMENTS

ACTION 8 - With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION 9 - With the number of channels OPERABLE one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may continue provided the inoperable channel is placed in the bypassed or tripped condition within 1 hour. If the inoperable channel is bypassed, the desirability of maintaining this channel in the bypassed condition shall be reviewed in accordance with Specification 6.5.1.6e. The channel shall be returned to OPERABLE status no later than during the next COLD SHUTDOWN.

With a channel process measurement circuit that affects multiple functional units inoperable or in test, bypass or trip all associated functional units as listed below.

Process Measurement Circuit	Functional Unit Bypassed
1. Containment Pressure - High	Containment Pressure - High (ESF) Containment Pressure - High (RPS)
2. Steam Generator Pressure - Low	Steam Generator Pressure - Low Steam Generator ΔP 1 and 2 (EFAS)
3. Steam Generator Level	Steam Generator Level - Low Steam Generator Level - High Steam Generator ΔP (EFAS)

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TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP VALUES

<u>FUNCTIONAL UNIT</u>	<u>TRIP VALUE</u>	<u>ALLOWABLE VALUES</u>
6. CONTAINMENT COOLING (CCAS)		
a. Manual CCAS (Trip Buttons)	Not Applicable	Not Applicable
b. Manual SIAS (Trip Buttons)	Not Applicable	Not Applicable
c. Automatic Actuation Logic	Not Applicable	Not Applicable
7. LOSS OF POWER (LOV)		
a. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage and Degraded Voltage)	See Fig. 3.3-1 (4)	See Fig. 3.3-1 (4)
8. EMERGENCY FEEDWATER (EFAS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Steam Generator (A&B) Level-Low	$\geq 21\%$ (3)	$\geq 20\%$ (3)
c. Steam Generator ΔP -High (SG-A > SG-B)	≤ 125 psi	≤ 140 psi
d. Steam Generator ΔP -High (SG-B > SG-A)	≤ 125 psi	≤ 140 psi
e. Steam Generator (A&B) Pressure - Low	≥ 741 psia (2)	≥ 729 psia (2)
f. Automatic Actuation Logic	Not Applicable	Not Applicable

TABLE 3.3-4 (Continued)

TABLE NOTATION

- (1) Value may be decreased manually, to a minimum of greater than or equal to 300 psia, as pressurizer pressure is reduced, provided the margin between the pressurizer and this value is maintained at less than or equal to 400 psia;^a the setpoint shall be increased automatically as pressurizer pressure is increased until the trip setpoint is reached. Trip may be manually bypassed below 400 psia; bypass shall be automatically removed whenever pressurizer is greater than or equal to 400 psia.
- (2) Value may be decreased manually as steam generator pressure is reduced, provided the margin between the steam generator pressure and this value is maintained at less than or equal to 200 psi;^a the setpoint shall be increased automatically as steam generator pressure is increased until the trip setpoint is reached.
- (3) % of the distance between steam generator upper and lower level instrument nozzles.
- (4) Inverse time relay set value 3165V, trip will occur within the tolerances specified in Figure 3.3-1 for the range of bus voltages.
- (5) Actuated equipment only; does not result in CIAS.
- (6) The trip setpoint shall be set sufficiently high to prevent spurious alarms/trips yet sufficiently low to assure an alarm/trip should an inadvertent release occur.
- (7) Prior to the completion of DCP 53N, the setpoints for Containment Airborne Radiation Monitor 3RI-7004-1 shall be determined by the ODCM.
- (8) The trip setpoint shall be set sufficiently high to prevent spurious alarm/trips yet sufficiently low to assure an alarm/trip should a fuel handling accident occur.

^a Variable setpoints are for use only during normal, controlled plant heatups and cooldowns.

^{aa} Above normal background.

INITIATING SIGNAL AND FUNCTION

5.	<u>Steam Generator Pressure - Low</u>	
a.	MSIS	
	(1) Main Steam Isolation (HV8204, HV8205)	8.9
	(2) Main Feedwater Isolation (HV4048, HV4052)	10.9
	(3) Steam, Blowdown and Sample Isolation (HV8419, HV8421) (HV4053, HV4054, HV4057, HV4058)	20.9
	(4) Auxiliary Feedwater Isolation (NOTE 7) (HV4705, HV4713, HV4730, HV4731) (HV4706, HV4712, HV4714, HV4715)	40.9
6.	<u>Refueling Water Storage Tank - Low</u>	
a.	RAS	50.7*
	(1) Containment Sump Valves Open	50.7* (Note 3)
	(2) ECCS Miniflow Isolation Valves Close	
7.	<u>4.15 kV Emergency Bus Undervoltage</u>	Figure 3.3-1
a.	LOV (loss of voltage and degraded voltage)	
8.	<u>Steam Generator Level - Low (and No Pressure-Low Trip)</u>	
a.	EFAS	
	(1) Auxiliary Feedwater (AC trains)	52.7*/52.7**
	(2) Auxiliary Feedwater (Steam/DC train)	42.7 (Note 6)
9.	<u>Steam Generator Level - Low (and P - High)</u>	
a.	EFAS	
	(1) Auxiliary Feedwater (AC trains)	52.7*/52.7**
	(2) Auxiliary Feedwater (Steam/DC train)	42.7 (Note 6)
10.	<u>Control Room Ventilation Airborne Radiation</u>	
a.	CRIS	
	(1) Control Room Ventilation - Emergency Mode	Not Applicable
11.	<u>Control Room Toxic Gas (Chlorine)</u>	
a.	TGIS	
	(1) Control Room Ventilation - Isolation Mode	16 (NOTE 5)
12.	<u>Control Room Toxic Gas (Ammonia)</u>	
a.	TGIS	
	(1) Control Room Ventilation - Isolation Mode	36 (NOTE 5)

Table 3.3-5 (Continued)

INITIATING SIGNAL AND FUNCTION	RESPONSE TIME (SEC)
13. <u>Control Room Toxic Gas (Butane/Propane)</u> TGIS	
Control Room Ventilation - Isolation Mode	36 (NOTE 5)
14. <u>Fuel Handling Building Airborne Radiation</u> FHIS	
Fuel Handling Building Post-Accident Cleanup Filter System	Not Applicable
15. <u>Containment Airborne Radiation</u> CPIS	
Containment Purge Isolation	2 (NOTE 2)
16. <u>Containment Area Radiation</u> CPIS	
Containment Purge Isolation	2 (NOTE 2)

NOTES:

1. Response times include movement of valves and attainment of pump or blower discharge pressure as applicable.
 2. Response time includes emergency diesel generator starting delay (applicable to AC motor operated valves other than containment purge valves), instrumentation and logic response only. Refer to Table 3.6-1 for containment isolation valve closure times.
 3. All CIAS-Actuated valves except MSIVs and MFIVs and CCW valves 3HV-6211, 3HV-6216, 3HV-6223 and 3HV-6236.
 - 4a. CCW non-critical loop isolation valves 3HV-6212, 3HV-6213, 3HV-6218 and 3HV-6219.
 - 4b. Containment emergency cooler CCW isolation valves 3HV-6366, 3HV-6367, 3HV-6368, 3HV-6369, 3HV-6370, 3HV-6371, 3HV-6372 and 3HV-6373 open.
 5. Response time includes instrumentation, logic, and isolation damper closure times only.
 6. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3.
 7. Include HV4762 and HV4763 following implementation of DCP 195J.
 8. Prior to completion of DCP 6234, valve closure is manually initiated. Following completion of DCP 6234, valves are to close automatically on a RAS coincident with a high-high containment sump signal.
- * Emergency diesel generator starting delay (10 sec.) and sequence loading delays for SIAS are included.
- ** Emergency diesel generator starting delay (10 sec.) is included.

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
7. LOSS OF POWER (LOV)				
a. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage and Degraded Voltage)	S	(6)	(6)	1, 2, 3, 4
8. EMERGENCY FEEDWATER (EFAS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3
b. SG Level (A/B)-Low and ΔP (A/B) - High	S	(6)	Q	1, 2, 3
c. SG Level (A/B) - Low and No Pressure - Low Trip (A/B)	S	(6)	Q	1, 2, 3
d. Automatic Actuation Logic	N.A.	N.A.	Q(3), SA(4)	1, 2, 3
9. CONTROL ROOM ISOLATION (CRIS)				
a. Manual CRIS (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Manual SIAS (Trip Buttons)	N.A.	N.A.	R	N.A.
c. Airborne Radiation				All
i. Particulate/Iodine	S	R	M	All
ii. Gaseous	S	R	M	All
d. Automatic Actuation Logic	N.A.	N.A.	R(3)	All
10. TOXIC GAS ISOLATION (TGIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Chlorine - High	S	R	M	All
c. Ammonia - High	S	R	M	All
d. Butane/Propane - High	S	R	M	All
e. Automatic Actuation Logic	N.A.	N.A.	R (3)	All

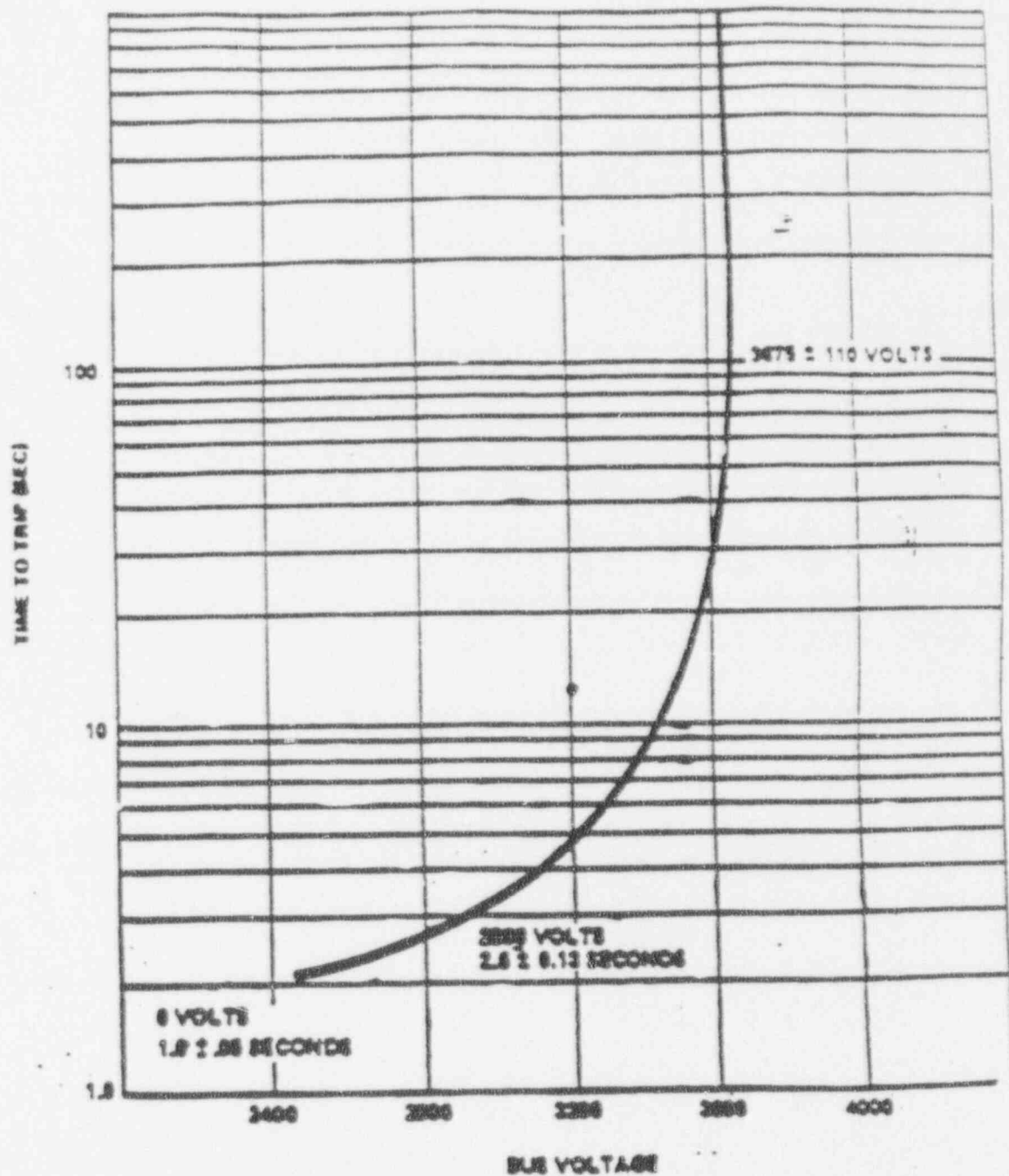


Figure 3.3-1
DEGRADED BUS VOLTAGE TRIP SETTING

ATTACHMENT C
Proposed Specifications
Unit 2

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
7. LOSS OF POWER (LOVS, SDVS, or DGVSS)					
a. 4.16 kv Emergency Bus Undervoltage (Loss of Voltage and Degraded Voltage)	4/Bus	2/Bus	3/Bus	1, 2, 3, 4	9*, 10*
b. 4.16 kv Emergency Bus Undervoltage (Degraded Voltage)	4/Bus	2/Bus	3/Bus	1, 2, 3, 4(d)	9*, 10*
8. EMERGENCY FEEDWATER (EFAS)					
a. Manual (Trip Buttons)	2 sets of 2 per S/G	1 set of 2 per S/G	2 sets of 2 per S/G	1, 2, 3	11
b. Automatic Actuation Logic	4/SG	2/SG	3/SG	1, 2, 3	9*, 10*
c. SG Level (A/B) - Low and ΔP (A/B) - High	4/SG	2/SG	3/SG	1, 2, 3	9*, 10*
d. SG Level (A/B) - Low and No S/G Pressure - Low Trip (A/B)	4/SG	2/SG	3/SG	1, 2, 3	9*, 10*

TABLE 3.3-3 (Continued)

TABLE NOTATION

- (a) Trip function may be bypassed in this MODE when pressurizer pressure is less than 400 psia; bypass shall be automatically removed when pressurizer pressure is greater than or equal to 400 psia.
- (b) An SIAS signal is first necessary to enable CSAS logic.
- (c) Actuated equipment only; does not result in CIAS.
- (d) Applicability for SDVS is Modes 1, 2, 3, and 4 when the diesel generator circuit breaker is open.
- # The provisions of Specification 3.0.3 are not applicable.
- * The provisions of Specification 3.0.4 are not applicable.
- ** With irradiated fuel in the storage pool.

ACTION STATEMENTS

- ACTION 8 - With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- ACTION 9 - With the number of channels OPERABLE one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may continue provided the inoperable channel is placed in the bypassed or tripped condition within 1 hour. If the inoperable channel is bypassed, the desirability of maintaining this channel in the bypassed condition shall be reviewed in accordance with Specification 6.5.1.6e. The channel shall be returned to OPERABLE status no later than during the next COLD SHUTDOWN.

With a channel process measurement circuit that affects multiple functional units inoperable or in test, bypass or trip all associated functional units as listed below.

Process Measurement Circuit	Functional Unit Bypassed
1. Containment Pressure - High	Containment Pressure - High (ESF) Containment Pressure - High (RPS)
2. Steam Generator Pressure - Low	Steam Generator Pressure - Low Steam Generator ΔP 1 and 2 (EFAS)
3. Steam Generator Level	Steam Generator Level - Low Steam Generator Level - High Steam Generator ΔP (EFAS)

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP VALUES

<u>FUNCTIONAL UNIT</u>	<u>TRIP VALUE</u>	<u>ALLOWABLE VALUES</u>
6. CONTAINMENT COOLING (CCAS)		
a. Manual CCAS (Trip Buttons)	Not Applicable	Not Applicable
b. Manual STAS (Trip Buttons)	Not Applicable	Not Applicable
c. Automatic Actuation Logic	Not Applicable	Not Applicable
7. LOSS OF POWER (LOVS, SDVS, or DGVSS)		
a. 4.16 kv Emergency Bus Undervoltage (Loss of Voltage and Degraded Voltage)	See Fig. 3.3-1 (4) 3675 V	See Fig. 3.3-1 (4) 3554 - 3796 V
b. 4.16 kv Emergency Bus Undervoltage (Degraded Voltage)	4228 V	4181 - 4275 V
8. EMERGENCY FEEDWATER (EFAS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Steam Generator (A&B) Level-Low	$\geq 21\%$ (3)	$\geq 20\%$ (3)
c. Steam Generator ΔP -High (SG-A > SG-B)	≤ 125 psi	≤ 140 psi
d. Steam Generator ΔP -High (SG-B > SG-A)	≤ 125 psi	≤ 140 psi
e. Steam Generator (A&B) Pressure - Low	≥ 741 psia (2)	≥ 729 psia (2)

TABLE 3.3-4 (Continued)

TABLE NOTATION

- (1) Value may be decreased manually, to a minimum of greater than or equal to 300 psia, as pressurizer pressure is reduced, provided the margin between the pressurizer and this value is maintained at less than or equal to 400 psia;* the setpoint shall be increased automatically as pressurizer pressure is increased until the trip setpoint is reached. Trip may be manually bypassed below 400 psia; bypass shall be automatically removed whenever pressurizer is greater than or equal to 400 psia.
- (2) Value may be decreased manually as steam generator pressure is reduced, provided the margin between the steam generator pressure and this value is maintained at less than or equal to 200 psi;* the setpoint shall be increased automatically as steam generator pressure is increased until the trip setpoint is reached.
- (3) % of the distance between steam generator upper and lower level instrument nozzles.
- (4) ~~Inverse time relay set value 3165, trip will occur within the tolerances specified in Figure 3.3-1 for the range of bus voltages, deleted~~
- (5) Actuated equipment only; does not result in CIAS.
- (6) The trip setpoint shall be set sufficiently high to prevent spurious alarms/trips yet sufficiently low to assure an alarm/trip should an inadvertent release occur.
- (7) Prior to the completion of DCP 53N, the setpoints for Containment Airborne Radiation Monitor 2RT-7804-1 shall be determined by the ODCM.
- (8) The trip setpoint shall be set sufficiently high to prevent spurious alarm/trips yet sufficiently low to assure an alarm/trip should a fuel handling accident occur.

*Variable setpoints are for use only during normal, controlled plant heatups and cooldowns.

Table 3.3-5 (Continued)

INITIATING SIGNAL AND FUNCTIONRESPONSE TIME (SEC)5. Steam Generator Pressure - Low

MSIS

- | | |
|--|------|
| (1) Main Steam Isolation (HV8204, HV8205) | 8.9 |
| (2) Main Feedwater Isolation (HV4048, HV4052) | 10.9 |
| (3) Steam Blowdown and Sample Isolation
(HV8421, HV8421) | 20.9 |
| (4) Auxiliary Feedwater Isolation (NOTE 7)
(HV4053, HV4054, HV4057, HV4058)
(HV4705, HV4713, HV4730, HV4731)
(HV4706, HV4712, HV4714, HV4715) | 40.9 |

6. Refueling Water Storage Tank - Low

RAS

- | | |
|--|----------------|
| (1) Containment Sump Valves Open | 50.7* |
| (2) ECCS Miniflow Isolation Valves Close | 50.7* (Note 8) |

7. 4.16 kv Emergency Bus Undervoltage

- | | |
|---|----------------|
| a. LOVS (loss of voltage and degraded voltage) Figure 3.3-1 | 1.05 (Note 9) |
| b. Degraded voltage | |
| i. SDVS (Sustained Degraded Voltage) | 135.0 |
| ii. DGVSS (Degraded Grid Voltage with SIAS) | 6.14 (Note 10) |

8. Steam Generator Level - Low (and No Pressure-Low Trip)

EFAS

- | | |
|--|---------------|
| (1) Auxiliary Feedwater (AC trains) | 52.7*/52.7** |
| (2) Auxiliary Feedwater (Steam/DC train) | 42.7 (NOTE 6) |

9. Steam Generator Level - Low (and ΔP - High)

EFAS

- | | |
|--|---------------|
| (1) Auxiliary Feedwater (AC trains) | 52.7*/52.7** |
| (2) Auxiliary Feedwater (Steam/DC train) | 42.7 (NOTE 6) |

10. Control Room Ventilation Airborne Radiation

CRIS

- | | |
|---|--|
| (1) Control Room Ventilation - Emergency Mode | |
|---|--|

Not Applicable

11. Control Room Toxic Gas (Chlorine)

TGIS

- | | |
|---|--|
| (1) Control Room Ventilation - Isolation Mode | |
|---|--|

16 (NOTE 5)

12. Control Room Toxic Gas (Ammonia)

TGIS

- | | |
|---|--|
| Control Room Ventilation - Isolation Mode | |
|---|--|

36 (NOTE 5)

Table 3.3-5 (Continued)

INITIATING SIGNAL AND FUNCTION	RESPONSE TIME (SEC)
13. <u>Control Room Toxic Gas (Butane/Propane)</u> TGIS Control Room Ventilation - Isolation Mode	36 (NOTE 5)
14. <u>Fuel Handling Building Airborne Radiation</u> FHIS Fuel Handling Building Post-Accident Cleanup Filter System	Not Applicable
15. <u>Containment Airborne Radiation</u> CPIS Containment Purge Isolation	2 (NOTE 2)
16. <u>Containment Area Radiation</u> CPIS Containment Purge Isolation	2 (NOTE 2)

NOTES:

1. Response times include movement of valves and attainment of pump or blower discharge pressure as applicable.
2. Response time includes emergency diesel generator starting delay (applicable to A. C. motor-operated valves other than containment purge valves), instrumentation and logic response only. Refer to Table 3.6-1 for containment isolation valve closure times.
3. All CIAS-actuated valves except MSIVs, MFIVs, and CCW Valves 2HV-6211, 2HV-6216, 2HV-6223 and 2HV-6236.
- 4a. CCW noncritical loop isolation Valves 2HV-6212, 2HV-6213, 2HV-6218, and 2HV-6219 close.
- 4b. Containment emergency cooler CCW isolation Valves 2HV-6366, 2HV-6367, 2HV-6368, 2HV-6369, 2HV-6370, 2HV-6371, 2HV-6372 and 2HV-6373 open.
5. Response time includes instrumentation, logic and isolation damper closure times only.
6. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3.
7. Include HV4762 and HV4763 following implementation of DCP 195J.
8. Prior to completion of DCP 6234 valve closure is manually initiated. Following completion of DCP 6234, valves are to close automatically on a RAS coincident with a high-high containment sump signal.
9. Response time is for step voltage loss from nominal voltage to 0.0 volts
10. Response time is measured from initiation of SIAS.
- * Emergency diesel generator starting delay (10 sec.) and sequence loading delays for SIAS are included.
- ** Emergency diesel generator starting delay (10 sec) is included.

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
7. LOSS OF POWER (LOVS, SDVS, or DGVSS)				
a. 4.16 kv Emergency Bus Undervoltage (Loss of Voltage and Degraded Voltage)	S	(6)	(6)	1, 2, 3, 4
b. 4.16 kv Emergency Bus Undervoltage (Degraded Voltage)	S	(6)	(6)	1, 2, 3, 4
8. EMERGENCY FEEDWATER (EFAS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3
b. SG Level (A/B)-Low and ΔP (A/B) - High	S	(6)	Q	1, 2, 3
c. SG Level (A/B) - Low and No Pressure - Low Trip (A/B)	S	(6)	Q	1, 2, 3
d. Automatic Actuation Logic	N.A.	N.A.	Q(3), SA(4)	1, 2, 3
9. CONTROL ROOM ISOLATION (CRIS)				
a. Manual CRIS (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Manual SIAS (Trip Buttons)	N.A.	N.A.	R	N.A.
c. Airborne Radiation				
i. Particulate/Iodine	S	R	M	All
ii. Gaseous	S	R	M	All
d. Automatic Actuation Logic	N.A.	N.A.	R(3)	All
10. TOXIC GAS ISOLATION (TGIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Chlorine - High	S	R	M	All
c. Ammonia - High	S	R	M	All
d. Butane/Propane - High	S	R	M	All
e. Automatic Actuation Logic	N.A.	N.A.	R(3)	All

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SAN ONOFRE - UNIT 2

~~Figure 3.3-1~~
~~DEGRADED BUS VOLTAGE TRIP SETTING~~
3/4 3-40

AMENDMENT NO.

ATTACHMENT D

Proposed Specifications

Unit 3

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
7. LOSS OF POWER (LOVS, SDVS, or DGVSS)					
a. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage and Degraded Voltage)	4/Bus	2/Bus	3/Bus	1, 2, 3, 4	9*, 10*
b. 4.16 kv Emergency Bus Undervoltage (Degraded Voltage)	4/Bus	2/Bus	3/Bus	1, 2, 3, 4(d)	9*, 10*
8. EMERGENCY FEEDWATER (EFAS)					
a. Manual (Trip Buttons)	2 sets of 2 per S/G	1 set of 2 per S/G	2 sets of 2 per S/G	1, 2, 3	11
b. Automatic Actuation Logic	4/SG	2/SG	3/SG	1, 2, 3	9*, 10*
c. SG Level (A/B) - Low and ΔP (A/B) - High	4/SG	2/SG	3/SG	1, 2, 3	9*, 10*
d. SG Level (A/B) - Low and No S/G Pressure - Low Trip (A/B)	4/SG	2/SG	3/SG	1, 2, 3	9*, 10*

TABLE 3.3-3 (Continued)

TABLE NOTATION

- (a) Trip function may be bypassed in this MODE when pressurizer pressure is less than 400 psia; bypass shall be automatically removed when pressurizer pressure is greater than or equal to 400 psia.
- (b) An SIAS signal is first necessary to enable CSAS logic.
- (c) Actuated equipment only; does not result in CIAS.
- (d) Applicability for SDVS is Modes 1, 2, 3, and 4 when the diesel generator circuit breaker is open.
- # The provisions of Specification 3.0.3 are not applicable.
- * The provisions of Specification 3.0.4 are not applicable.
- ** With irradiated fuel in the storage pool.

ACTION STATEMENTS

ACTION 8 - With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION 9 - With the number of channels OPERABLE one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may continue provided the inoperable channel is placed in the bypassed or tripped condition within 1 hour. If the inoperable channel is bypassed, the desirability of maintaining this channel in the bypassed condition shall be reviewed in accordance with Specification 6.5.1.6e. The channel shall be returned to OPERABLE status no later than during the next COLD SHUTDOWN.

With a channel process measurement circuit that affects multiple functional units inoperable or in test, bypass or trip all associated functional units as listed below.

Process Measurement Circuit	Functional Unit Bypassed
1. Containment Pressure - High	Containment Pressure - High (ESF) Containment Pressure - High (RPS)
2. Steam Generator Pressure - Low	Steam Generator Pressure - Low Steam Generator ΔP 1 and 2 (EFAS)
3. Steam Generator Level	Steam Generator Level - Low Steam Generator Level - High Steam Generator ΔP (EFAS)

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP VALUES

<u>FUNCTIONAL UNIT</u>	<u>TRIP VALUE</u>	<u>ALLOWABLE VALUES</u>
6. CONTAINMENT COOLING (CCAS)		
a. Manual CCAS (Trip Buttons)	Not Applicable	Not Applicable
b. Manual SIAS (Trip Buttons),	Not Applicable	Not Applicable
c. Automatic Actuation Logic	Not Applicable	Not Applicable
7. LOSS OF POWER (LOVS, SDVS, or DGVSS)		
a. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage and Degraded Voltage)	See Fig. 3.3-1 (4) 3675 V	See Fig. 3.3-1 (4) 3554 - 3796 V
b. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)	4228 V	4181 - 4275 V
8. EMERGENCY FEEDWATER (EFAS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Steam Generator (A&B) Level-Low	$\geq 21\%$ (3)	$\geq 20\%$ (3)
c. Steam Generator ΔP -High (SG-A > SG-B)	≤ 125 psi	≤ 140 psi
d. Steam Generator ΔP -High (SG-B > SG-A)	≤ 125 psi	≤ 140 psi
e. Steam Generator (A&B) Pressure - Low	≥ 741 psia (2)	≥ 729 psia (2)
f. Automatic Actuation Logic	Not Applicable	Not Applicable

TABLE 3.3-4 (Continued)TABLE NOTATION

- (1) Value may be decreased manually, to a minimum of greater than or equal to 300 psia, as pressurizer pressure is reduced, provided the margin between the pressurizer and this value is maintained at less than or equal to 400 psia;* the setpoint shall be increased automatically as pressurizer pressure is increased until the trip setpoint is reached. Trip may be manually bypassed below 400 psia; bypass shall be automatically removed whenever pressurizer is greater than or equal to 400 psia.
- (2) Value may be decreased manually as steam generator pressure is reduced, provided the margin between steam generator pressure and this value is maintained at less than or equal to 200 psi;* the setpoint shall be increased automatically as steam generator pressure is increased until the trip setpoint is reached.
- (3) % of the distance between steam generator upper and lower level instrument nozzles.
- (4) ~~Inverse time relay set value 3165, trip will occur within the tolerances specified in Figure 3.3-1 for the range of bus voltages.~~deleted
- (5) Actuated equipment only; does not result in CIAS.
- (6) The trip setpoint shall be set sufficiently high to prevent spurious alarms/trips yet sufficiently low to assure an alarm/trip should an inadvertent release occur.
- (7) Prior to the completion of DCP 53N, the setpoints for Containment Airborne Radiation Monitor 3RT-7804-1 shall be determined by the ODCM.
- (8) The trip setpoint shall be set sufficiently high to prevent spurious alarm/trips yet sufficiently low to assure an alarm/trip should a fuel handling accident occur.

*Variable setpoints are for use only during normal, controlled plant heatups and cooldowns.

**Above normal background.

Table 3.3 5 (Continued)

INITIATING SIGNAL AND FUNCTIONRESPONSE TIME (SEC)5. Steam Generator Pressure - Low

- a. MSIS
 - (1) Main Steam Isolation (HV8204, HV8205) 8.9
 - (2) Main Feedwater Isolation (HV4048, HV4052) 10.9
 - (3) Steam, Blowdown and Sample Isolation (HV8419, HV8421) 20.9
 - (4) Auxiliary Feedwater Isolation (NOTE 7) 40.9
 - (HV4053, HV4054, HV4057, HV4058)
 - (HV4705, HV4713, HV4730, HV4731) (HV4706, HV4712, HV4714, HV4715)

6. Refueling Water Storage Tank - Low

- a. RAS
 - (1) Containment Sump Valves Open 50.7*
 - (2) ECCS Miniflow Isolation Valves Close 50.7* (Note 8)

7. 4.16 kV Emergency Bus Undervoltage

- a. LOVS (loss of voltage and degraded voltage) ~~Figure 3.3-11.05~~ (Note 9)
- b. Degraded voltage
 - i. SDVS (Sustained Degraded Voltage) 135.0
 - ii. DGVSS (Degraded Grid Voltage with SIAS) 6.14 (Note 10)

8. Steam Generator Level - Low (and No Pressure-Low Trip)

- a. EFAS
 - (1) Auxiliary Feedwater (AC trains) 52.7*/52.7**
 - (2) Auxiliary Feedwater (Steam/DC train) 42.7 (Note 6)

9. Steam Generator Level - Low (and P - High)

- a. EFAS
 - (1) Auxiliary Feedwater (AC trains) 52.7*/52.7**
 - (2) Auxiliary Feedwater (Steam/DC train) 42.7 (Note 6)

10. Control Room Ventilation Airborne Radiation

- a. CRIS
 - (1) Control Room Ventilation - Emergency Mode Not Applicable

11. Control Room Toxic Gas (Chlorine)

- a. TGIS
 - (1) Control Room Ventilation - Isolation Mode 16 (NOTE 5)

12. Control Room Toxic Gas (Ammonia)

- a. TGIS
 - (1) Control Room Ventilation - Isolation Mode 36 (NOTE 5)

Table 3.3-5 (Continued)

<u>INITIATING SIGNAL AND FUNCTION</u>	<u>RESPONSE TIME (SEC)</u>
13. <u>Control Room Toxic Gas (Butane/Propane)</u> TGIS Control Room Ventilation - Isolation Mode	36 (NOTE 5)
14. <u>Fuel Handling Building Airborne Radiation</u> FHIS Fuel Handling Building Post-Accident Cleanup Filter System	Not Applicable
15. <u>Containment Airborne Radiation</u> CPIS Containment Purge Isolation	2 (NOTE 2)
16. <u>Containment Area Radiation</u> CPIS Containment Purge Isolation	2 (NOTE 2)

NOTES:

1. Response times include movement of valves and attainment of pump or blower discharge pressure as applicable.
 2. Response time includes emergency diesel generator starting delay (applicable to AC motor operated valves other than containment purge valves), instrumentation and logic response only. Refer to Table 3.6-1 for containment isolation valve closure times.
 3. All CIAS-Actuated valves except MSIVs and MFIVs and CCW valves 3HV-6211, 3HV-6216, 3HV-6223 and 3HV-6236.
 - 4a. CCW non-critical loop isolation valves 3HV-6212, 3HV-6213, 3HV-6218 and 3HV-6219.
 - 4b. Containment emergency cooler CCW isolation valves 3HV-6366, 3HV-6367, 3HV-6368, 3HV-6369, 3HV-6370, 3HV-6371, 3HV-6372 and 3HV-6373 open.
 5. Response time includes instrumentation, logic, and isolation damper closure times only.
 6. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3.
 7. Include HV4762 and HV4763 following implementation of DCP 195J.
 8. Prior to completion of DCP 6234, valve closure is manually initiated. Following completion of DCP 6234, valves are to close automatically on a RAS coincident with a high-high containment sump signal.
 9. Response time is for step voltage loss from nominal voltage to 0.0 volts.
 10. Response time is measured from initiation of SIAS.
- * Emergency diesel generator starting delay (10 sec.) and sequence loading delays for SIAS are included.
- ** Emergency diesel generator starting delay (10 sec.) is included.

TABLE 4.3-2 (continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
7. LOSS OF POWER (LOVS, SDVS, or DGVSS)				
a. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage and Degraded Voltage)	S	(6)	(6)	1, 2, 3, 4
b. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)	S	(6)	(6)	1, 2, 3, 4
8. EMERGENCY FEEDWATER (EFAS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3
b. SG Level (A/B)-Low and ΔP (A/B) - High	S	(6)	Q	1, 2, 3
c. SG Level (A/B) - Low and No Pressure - Low Trip (A/B)	S	(6)	Q	1, 2, 3
d. Automatic Actuation Logic	N.A.	N.A.	Q(3), SA(4)	1, 2, 3
9. CONTROL ROOM ISOLATION (CRIS)				
a. Manual CRIS (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Manual SIAS (Trip Buttons)	N.A.	N.A.	R	N.A.
c. Airborne Radiation				
i. Particulate/Iodine	S	R	M	All
ii. Gaseous	S	R	M	All
d. Automatic Actuation Logic	N.A.	N.A.	R(3)	All
10. TOXIC GAS ISOLATION (TGIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Chlorine - High	S	R	M	All
c. Ammonia - High	S	R	M	All
d. Butane/Propane - High	S	R	M	All
e. Automatic Actuation Logic	N.A.	N.A.	R(3)	All

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~~Figure 3.3-1~~
~~DEGRADED BUS VOLTAGE TRIP SETTING~~

ENCLOSURE 2

UNITS 2 AND 3 TECHNICAL SPECIFICATIONS

PCNs 401, 405, 431, AND 429 MARKUPS

TABLE 3.3-3 (Continued)

TABLE NOTATION

- (a) Trip function may be bypassed in this MODE when pressurizer pressure is less than ~~400~~ 472 psia; bypass shall be automatically removed when pressurizer pressure is greater than or equal to ~~400~~ 472 psia.
- (b) An SIAS signal is first necessary to enable CSAS logic.
- (c) Actuated equipment only; does not result in CIAS.
- (d) Applicability for SDVS is Modes 1, 2, 3, and 4 when the diesel generator circuit breaker is open.
- * The provisions of Specification 3.0.3 are not applicable.
- * The provisions of Specification 3.0.4 are not applicable.
- ** With irradiated fuel in the storage pool.

PCN
451

PCN
424

ACTION STATEMENTS

- ACTION 8 - With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- ACTION 9 - With the number of channels OPERABLE one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may continue provided the inoperable channel is placed in the bypassed or tripped condition within 1 hour. If the inoperable channel is bypassed, the desirability of maintaining this channel in the bypassed condition shall be reviewed in accordance with Specification 6.5.1.6e. The channel shall be returned to OPERABLE status no later than during the next COLD SHUTDOWN.

With a channel process measurement circuit that affects multiple functional units inoperable or in test, bypass or trip all associated functional units as listed below.

Process Measurement Circuit	Functional Unit Bypassed
1. Containment Pressure - High	Containment Pressure - High (ESF) Containment Pressure - High (RPS)
2. Steam Generator Pressure - Low	Steam Generator Pressure - Low Steam Generator ΔP 1 and 2 (EFAS)
3. Steam Generator Level	Steam Generator Level - Low Steam Generator Level - High Steam Generator ΔP (EFAS)

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP VALUES

<u>FUNCTIONAL UNIT</u>	<u>TRIP VALUE</u>	<u>ALLOWABLE VALUES</u>
6. CONTAINMENT COOLING (CCAS)		
a. Manual CCAS (Trip Buttons)	Not Applicable	Not Applicable
b. Manual SIAS (Trip Buttons) deleted intentionally	Not Applicable	Not Applicable
c. Automatic Actuation Logic	Not Applicable	Not Applicable
7. LOSS OF POWER (LOVS, SDVS, or DGVSS)		
a. 4.16 kv Emergency Bus Undervoltage (Loss of Voltage and Degraded Voltage)	See Fig. 3.3-1 (4) 3675 V	See Fig. 3.3-1 (4) 3554 - 3796 V
b. 4.16 kv Emergency Bus Undervoltage (Degraded Voltage)	4228 V	4181 - 4275 V
8. EMERGENCY FEEDWATER (EFAS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Steam Generator (A&B) Level-Low	$\geq 21\%$ (3)	$\geq 20\%$ (3)
c. Steam Generator ΔP -High (SG-A > SG-B)	≤ 125 psi	≤ 140 psi
d. Steam Generator ΔP -High (SG-B > SG-A)	≤ 125 psi	≤ 140 psi
e. Steam Generator (A&B) Pressure - Low	≥ 741 psia (2)	≥ 729 psia (2)
f. Automatic Actuation Logic	Not Applicable	Not Applicable

PCN 401

PCN 424

TABLE 3.3-4 (Continued)

TABLE NOTATION

- (1) Value may be decreased manually, to a minimum of greater than or equal to 300 psia, as pressurizer pressure is reduced, provided the margin between the pressurizer and this value is maintained at less than or equal to 400 psia;* the setpoint shall be increased automatically as pressurizer pressure is increased until the trip setpoint is reached. Trip may be manually bypassed below 400 472 psia; bypass shall be automatically removed whenever pressurizer is greater than or equal to 400 472 psia. | PCN 431
- (2) Value may be decreased manually as steam generator pressure is reduced, provided the margin between the steam generator pressure and this value is maintained at less than or equal to 200 psi;* the setpoint shall be increased automatically as steam generator pressure is increased until the trip setpoint is reached.
- (3) % of the distance between steam generator upper and lower level instrument nozzles.
- (4) ~~Inverse time relay set value 3165, trip will occur within the tolerances; specified in Figure 3.3-1 for the range of bus voltages.~~ deleted | PCN 429
- (5) Actuated equipment only; does not result in CIAS.
- (6) The trip setpoint shall be set sufficiently high to prevent spurious alarms/trips yet sufficiently low to assure an alarm/trip should an inadvertent release occur.
- (7) Prior to the completion of DCP 53N, the setpoints for Containment Airborne Radiation Monitor 2RT-7804-1 shall be determined by the ODCM.
- (8) The trip setpoint shall be set sufficiently high to prevent spurious alarm/trips yet sufficiently low to assure an alarm/trip should a fuel handling accident occur.

* Variable setpoints are for use only during normal, controlled plant heatups and cooldowns.

** Above normal background.

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES FOR WHICH SURVEILLANCE IS REQUIRED</u>
7. LOSS OF POWER (LOVS, SDVS, or DGVSS)				
a. 4.16 kv Emergency Bus Undervoltage (Loss of Voltage and Degraded Voltage)	S	(6)	(6)	1, 2, 3, 4
b. 4.16 kv Emergency Bus Undervoltage (Degraded Voltage)	S	(6)	(6)	1, 2, 3, 4
8. EMERGENCY FEEDWATER (EFAS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3
b. SG Level (A/B)-Low and ΔP (A/B) - High	S	(6)	Q	1, 2, 3
c. SG Level (A/B) - Low and No Pressure - Low Trip (A/B)	S	(6)	Q	1, 2, 3
d. Automatic Actuation Logic	N.A.	N.A.	Q(3), SA(4)	1, 2, 3
9. CONTROL ROOM ISOLATION (CRIS)				
a. Manual CRIS (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Manual SIAS (Trip Buttons)	N.A.	N.A.	R	N.A.
c. Airborne Radiation				
i. Particulate/Iodine Deleted	S	R	M	All
ii. Gaseous	S	R	M	All
d. Automatic Actuation Logic	N.A.	N.A.	R(3)	All
10. TOXIC GAS ISOLATION (TGIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Chlorine - High	S	R	M	All
c. Ammonia - High	S	R	M	All
d. Butane/Propane - High	S	R	M	All
e. Automatic Actuation Logic	N.A.	N.A.	R(3)	All

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TABLE 3.3-3 (Continued)

TABLE NOTATION

- (a) Trip function may be bypassed in this MODE when pressurizer pressure is less than ~~400~~ 472 psia; bypass shall be automatically removed when pressurizer pressure is greater than or equal to ~~400~~ 472 psia.
- (b) An SIAS signal is first necessary to enable CSAS logic.
- (c) Actuated equipment only; does not result in CIAS.
- (d) Applicability for SDVS is Modes 1, 2, 3, and 4 when the diesel generator circuit breaker is open.
- * The provisions of Specification 3.0.3 are not applicable.
- * The provisions of Specification 3.0.4 are not applicable.
- ** With irradiated fuel in the storage pool.

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ACTION STATEMENTS

- ACTION 8 - With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- ACTION 9 - With the number of channels OPERABLE one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may continue provided the inoperable channel is placed in the bypassed or tripped condition within 1 hour. If the inoperable channel is bypassed, the desirability of maintaining this channel in the bypassed condition shall be reviewed in accordance with Specification 6.5.1.6e. The channel shall be returned to OPERABLE status no later than during the next COLD SHUTDOWN.

With a channel process measurement circuit that affects multiple functional units inoperable or in test, bypass or trip all associated functional units as listed below.

Process Measurement Circuit	Functional Unit Bypassed
1. Containment Pressure - High	Containment Pressure - High (ESF) Containment Pressure - High (RPS)
2. Steam Generator Pressure - Low	Steam Generator Pressure - Low Steam Generator ΔP 1 and 2 (EFAS)
3. Steam Generator Level	Steam Generator Level - Low Steam Generator Level - High Steam Generator ΔP (EFAS)

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP VALUES

<u>FUNCTIONAL UNIT</u>	<u>TRIP VALUE</u>	<u>ALLOWABLE VALUES</u>
6. CONTAINMENT COOLING (CCAS)		
a. Manual CCAS (Trip Buttons)	Not Applicable	Not Applicable
b. Manual SIAS (Trip Buttons), deleted intentionally	Not Applicable	Not Applicable
c. Automatic Actuation Logic	Not Applicable	Not Applicable
7. LOSS OF POWER (LOVS, SDVS, or DGVSS)		
a. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage and Degraded Voltage)	See Fig. 3.3-1 (4) 3675 V	See Fig. 3.3-1 (4) 3554 - 3796 V
b. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)	4228 V	4181 - 4275 V
8. EMERGENCY FEEDWATER (EFAS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Steam Generator (A&B) Level-Low	$\geq 21\%$ (3)	$\geq 20\%$ (3)
c. Steam Generator ΔP -High (SG-A > SG-B)	≤ 125 psi	≤ 140 psi
d. Steam Generator ΔP -High (SG-B > SG-A)	≤ 125 psi	≤ 140 psi
e. Steam Generator (A&B) Pressure - Low	≥ 741 psia (2)	≥ 729 psia (2)
f. Automatic Actuation Logic	Not Applicable	Not Applicable

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TABLE 3.3-4 (Continued)

TABLE NOTATION

- (1) Value may be decreased manually, to a minimum of greater than or equal to 300 psia, as pressurizer pressure is reduced, provided the margin between the pressurizer and this value is maintained at less than or equal to 400 psia;* the setpoint shall be increased automatically as pressurizer pressure is increased until the trip setpoint is reached. Trip may be manually bypassed below ~~400~~ 472 psia; bypass shall be automatically removed whenever pressurizer is greater than or equal to ~~400~~ 472 psia. | PCN 431
- (2) Value may be decreased manually as steam generator pressure is reduced, provided the margin between steam generator pressure and this value is maintained at less than or equal to 200 psi;* the setpoint shall be increased automatically as steam generator pressure is increased until the trip setpoint is reached.
- (3) % of the distance between steam generator upper and lower level instrument nozzles.
- (4) ~~Inverse time relay set value 3165V, trip will occur within the tolerances specified in Figure 3.3-1 for the range of bus voltages deleted~~ ; | PCN 429
- (5) Actuated equipment only; does not result in CIAS.
- (6) The trip setpoint shall be set sufficiently high to prevent spurious alarms/trips yet sufficiently low to assure an alarm/trip should an inadvertent release occur.
- (7) Prior to the completion of DCP 53N, the setpoints for Containment Airborne Radiation Monitor 3RT-7804-1 shall be determined by the ODCM.
- (8) The trip setpoint shall be set sufficiently high to prevent spurious alarm/trips yet sufficiently low to assure an alarm/trip should a fuel handling accident occur.

* Variable setpoints are for use only during normal, controlled plant heatups and cooldowns.

** Above normal background.

TABLE 4.3-2 (continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
7. LOSS OF POWER (LOVS, SDVS, or DGVSS)				
a. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage and Degraded Voltage)	S	(6)	(6)	1, 2, 3, 4
b. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)	S	(6)	(6)	1, 2, 3, 4
8. EMERGENCY FEEDWATER (EFAS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3
b. SG Level (A/B)-Low and ΔP (A/B) - High	S	(6)	Q	1, 2, 3
c. SG Level (A/B) - Low and No Pressure - Low Trip (A/B)	S	(6)	Q	1, 2, 3
d. Automatic Actuation Logic	N.A.	N.A.	Q(3), SA(4)	1, 2, 3
9. CONTROL ROOM ISOLATION (CRIS)				
a. Manual CRIS (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Manual SIAS (Trip Buttons)	N.A.	N.A.	R	N.A.
c. Airborne Radiation				
i. Particulate/Iodine Deleted	S	R	M	All
ii. Gaseous	S	R	M	All
d. Automatic Actuation Logic	N.A.	N.A.	R(3)	All
10. TOXIC GAS ISOLATION (TGIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Chlorine - High	S	R	M	All
c. Ammonia - High	S	R	M	All
d. Butane/Propane - High	S	R	M	All
e. Automatic Actuation Logic	N.A.	N.A.	R(3)	All

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