UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SOUTHERN CALIFORNIA EDISON COMPANY

SAN DIEGO GAS AND ELECTRIC COMPANY

THE CITY OF RIVERSIDE, CALIFORNIA

THE CITY OF ANAHEIM, CALIFORNIA

DOCKET NO. 50-361

SAN ONOFRE NUCLEAR GENERATING STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 110
License No. NPF-10

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Southern California Edison Company, et al. (SCE or the licensee) dated April 7, 1992, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C(2) of Facility Operating License No. NPF-10 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 110 , are hereby incorporated in the license. Southern California Edison Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance and must be fully implemented no later than 30 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Theodore R. Quay, Director
Project Directorate V
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 4, 1994

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 110 TO FACILITY OPERATING LICENSE NO. NPF-10

DOCKET NO. 50-361

Revise Appendix A Technical Specifications by removing the pages identified below and inserting the enclosed pages. The revised pages are identified by the captioned amendment number and contain marginal lines indicating the areas of change. The corresponding overleaf pages are also provided to maintain document completeness.

REMOVE	INSERT
3/4 3-15	3/4 3-15
3/4 3-23	3/4 3-23
3/4 3-27	3/4 3-27
3/4 3-31	3/4 3-31

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
4. MAIN STEAM LINE ISOLATION					
a. Manual (Trip Buttons)	2/steam generator	1/steam generator	2/operating steam generator	1, 2, 3	11
b. Steam Generator Pressure - Low	4/steam generator	2/steam generator	3/steam generator	1, 2, 3	9*, 10*
c. Automatic Actuation Logic	4/steam generator	2/steam generator	3/steam generator	1, 2, 3	9*, 10*
5. RECIRCULATION (RAS)					
a. Refueling Water Storage Tank - Low	4	2	3	1, 2, 3, 4	9*, 10*
b. Automatic Actuation Logic	4	2	3	1, 2, 3, 4	9*, 10*
6. CONTAINMENT COOLING (CCAS)					
a. Manual CCAS (Trip Buttons)	2 sets of 2	1 set of 2	2 sets of 2	1, 2, 3, 4	8
b. Deleted intentionally					
c. Automatic Actuation Logic	4	2	3	1, 2, 3, 4	9*, 10*

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURES 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*, 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 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP VALUES

FUNCTIONAL UNIT	TRIP VALUES	ALLOWABLE VALUES
6. CONTAINMENT COOLING (CCAS)		
a. Manual CCAS (Trip Buttons)	Not Applicable	Not Applicable
b. deleted intentionally		
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	≥ 21% (3)	≥ 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 -	≥ 741 psia (2)	≥ 729 psia (2)
f. Automatic Actuation Logic	Not Applicable	Not Applicable

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP VALUES

FUNCTIONAL UNIT	TRIP VALUE	ALLOWABLE VALUES
9. CONTROL ROOM ISOLATION (CRIS)		
a. Manual CRIS (Trip Buttons)	Not Applicable	Not Applicable
b. Manual SIAS (Trip Buttons)	Not Applicable	Not Applicable
c. Airborne Radiation		
i. Particulate/Iodine	$\leq 5.7 \times 10^4$ cpm**	$\leq 6.0 \times 10^4$ cpm**
ii. Gaseous	$\leq 3.8 \times 10^*$ cpm**	$\leq 4.0 \times 10^2$ cpm**
d. Automatic Actuation Logic	Not Applicable	Not Applicable
10. TOXIC GAS ISOLATION (TGIS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Chlorine - High	$\leq$ 14.3 ppm	$\leq$ 15.0 ppm
c. Ammonia - High	$\leq$ 97 ppm	$\leq$ 100 ppm
d. Butane/Propane - High	$\leq$ 193 ppm	$\leq$ 200 ppm
e. Automatic Actuation Logic	Not Applicable	Not Applicable

TABLE 3.3-5

ENGINEERED SAFETY FEATURES RESPONSE TIMES

INITIATING SIGNAL AND FUNCTION	RESPONSE TIME (SEC)
1. Manual	
a. SIAS	
Safety Injection	Not Applicable
Control Room Isolation	Not Applicable
Containment Isolation (3)	Not Applicable
b. CSAS	
Containment Spray	Not Applicable
c. CIAS	
Containment Isolation	Not Applicable
d. MSIS	
Main Steam Isolation	Not Applicable
e. RAS	
Containment Sump Recirculation	Not Applicable
f. CCAS	
Containment Emergency Cooling	Not Applicable
g. EFAS	
Auxiliary Feedwater	Not Applicable
h. CRIS	
Control Room Isolation	Not Applicable
i. TGIS	
Toxic Gas Isolation	Not Applicable
j. FHIS	
Fuel Handling Building Isolation	Not Applicable
k. CPIS	
Containment Purge Isolation	Not Applicable

INITIATING SIGNAL AND FUNCTION	RESPONSE TIME (SEC)
2. Pressurizer Pressure-Low	
a. SIAS	
(1) Safety Injection	
(a) High Pressure Safety Injection	31.2*
(b) Low Pressure Safety Injection	41.2*
(c) Charging Pumps	31.2*
(2) Control Room Isolation	Not Applicable
(3) Containment Isolation (NOTE 3)	11.2* (NOTE 2)
(4) Containment Spray (Pumps)	25.6*
(5) Containment Emergency Cooling	
(a) CCW Pumps	31.2*
(b) CCW Valves (Note 4b)	23.2*
(c) Emergency Cooling Fans	21.2*
3. Containment Pressure-High	
a. SIAS	
(1) Safety Injection	
(a) High Pressure Safety Injection	41.0*
(b) Low Pressure Safety Injection	41.0*
(2) Control Room Isolation	Not Applicable
(3) Containment Spray (Pumps)	25.4*
(4) Containment Emergency Cooling	
(a) CCW Pumps	31.0*
(b) CCW Valves (Note 4b)	23.0*
(c) Emergency Cooling Fans	21.0*
b. CIAS	
(1) Containment Isolation	10.3* (NOTE 2)
(2) Main Feedwater Isolation and Backup Isolation Valves (HV 4048, HV 4052, HV 1105, HV 1106, HV 4047, HV 4051)	10.9
(3) CCW Valves (Note 4a)	20.9
(4) Mainsteam Isolation Valves (HV 8204, HV 8205)	8.9
(5) Minipurge Isolation Valves	5.9
4. Containment Pressure - High-High	
CSAS	
Containment Spray	23.0*

TABLE 4.3-2

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1. SAFETY INJECTION (SIAS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3, 4
b. Containment Pressure - High	S	(6)	Q	1, 2, 3
c. Pressurizer Pressure - Low	S	(6)	Q	1, 2, 3,
d. Automatic Actuation Logic	N.A.	N.A.	Q(3), SA(4)	1, 2, 3, 4
2. CONTAINMENT SPRAY (CSAS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3
b. Containment Pressure -- High - High	S	(6)	Q	1, 2, 3
c. Automatic Actuation Logic	N.A.	N.A.	Q(3), SA(4)	1, 2, 3
3. CONTAINMENT ISOLATION (CIAS)				
a. Manual CIAS (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3, 4
b. Manual SIAS (Trip Buttons)(5)	N.A.	N.A.	(6)	1, 2, 3, 4
c. Containment Pressure - High	S	(6)	Q	1, 2, 3
d. Automatic Actuation Logic	N.A.	N.A.	Q(3), SA(4)	1, 2, 3, 4
4. MAIN STEAM ISOLATION (MSIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3
b. Steam Generator Pressure - Low	S	(6)	Q	1, 2, 3
c. Automatic Actuation Logic	N.A.	N.A.	Q(3), SA(4)	1, 2, 3
5. RECIRCULATION (RAS)				
a. Refueling Water Storage Tank - Low	S	R	Q	1, 2, 3, 4
b. Automatic Actuation Logic	N.A.	N.A.	Q(3), SA(4)	1, 2, 3, 4
6. CONTAINMENT COOLING (CCAS)				
a. Manual CCAS (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3, 4
b. deleted intentionally				
c. Automatic Actuation Logic	N.A.	N.A.	Q(3), SA(4)	1, 2, 3, 4

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				
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

UNITED STATES
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SOUTHERN CALIFORNIA EDISON COMPANY

SAN DIEGO GAS AND ELECTRIC COMPANY

THE CITY OF RIVERSIDE, CALIFORNIA

THE CITY OF ANAHEIM, CALIFORNIA

DOCKET NO. 50-362

SAN ONOFRE NUCLEAR GENERATING STATION, UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 99
License No. NPF-15

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Southern California Edison Company, et al. (SCE or the licensee) dated April 7, 1992, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C(2) of Facility Operating License No. NPF-15 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 99 , are hereby incorporated in the license. Southern California Edison Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance and must be fully implemented no later than 30 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Theodore R. Quay, Director
Project Directorate V
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 4, 1994

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 99 TO FACILITY OPERATING LICENSE NO. NPF-15

DOCKET NO. 50-362

Revise Appendix A Technical Specifications by removing the pages identified below and inserting the enclosed pages. The revised pages are identified by the captioned amendment number and contain marginal lines indicating the areas of change. The corresponding overleaf pages are also provided to maintain document completeness.

REMOVE	INSERT
3/4 3-15	3/4 3-15
3/4 3-23	3/4 3-23
3/4 3-27	3/4 3-27
3/4 3-31	3/4 3-31

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
4. MAIN STEAM LINE ISOLATION					
a. Manual (Trip Buttons)	2/steam generator	1/steam generator	2/operating steam generator	1, 2, 3	11
b. Steam Generator Pressure - Low	4/steam generator	2/steam generator	3/steam generator	1, 2, 3	9*, 10*
c. Automatic Actuation Logic	4/steam generator	2/steam generator	3/steam generator	1, 2, 3	9*, 10*
5. RECIRCULATION (RAS)					
a. Refueling Water Storage Tank - Low	4	2	3	1, 2, 3, 4	9*, 10*
b. Automatic Actuation Logic	4	2	3	1, 2, 3, 4	9*, 10*
6. CONTAINMENT COOLING (CCAS)					
a. Manual CCAS (Trip Buttons)	2 sets of 2	1 set of 2	2 sets of 2	1, 2, 3, 4	8
b. Deleted intentionally					
c. Automatic Actuation Logic	4	2	3	1, 2, 3, 4	9*, 10*

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURES 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*, 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 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES 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. deleted intentionally		
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	≥ 21% (3)	≥ 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)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP VALUES

FUNCTIONAL UNIT	TRIP VALUE	ALLOWABLE VALUES
9. CONTROL ROOM ISOLATION (CRIS)		
a. Manual CRIS (Trip Buttons)	Not Applicable	Not Applicable
b. Manual SIAS (Trip Buttons)	Not Applicable	Not Applicable
c. Airborne Radiation		
i. Particulate/Iodine	$\leq 5.7 \times 10^4$ cpm**	$\leq 6.0 \times 10^4$ cpm**
ii. Gaseous	$\leq 3.8 \times 10^2$ cpm**	$\leq 4.0 \times 10^2$ cpm**
d. Automatic Actuation Logic	Not Applicable	Not Applicable
10. TOXIC GAS ISOLATION (TGIS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Chlorine - High	$\leq$ 14.3 ppm	$\leq$ 15.0 ppm
c. Ammonia - High	$\leq$ 97 ppm	$\leq$ 100 ppm
d. Butane/Propane - High	$\leq$ 193 ppm	$\leq$ 200 ppm
e. Automatic Actuation Logic	Not Applicable	Not Applicable

TABLE 3.3-5

ENGINEERED SAFETY FEATURES RESPONSE TIMES

INITIATING SIGNAL AND FUNCTION	RESPONSE TIME (SEC)
1. Manual	
a. SIAS	
Safety Injection	Not Applicable
Control Room Isolation	Not Applicable
Containment Isolation (3)	Not Applicable
b. CSAS	
Containment Spray	Not Applicable
c. CIAS	
Containment Isolation	Not Applicable
d. MSIS	
Main Steam Isolation	Not Applicable
e. RAS	
Containment Sump Recirculation	Not Applicable
f. CCAS	
Containment Emergency Cooling	Not Applicable
g. EFAS	
Auxiliary Feedwater	Not Applicable
h. CRIS	
Control Room Isolation	Not Applicable
i. TGIS	
Toxic Gas Isolation	Not Applicable
j. FHIS	
Fuel Handling Building Isolation	Not Applicable
k. CPIS	
Containment Purge Isolation	Not Applicable

INITIATING SIGNAL AND FUNCTION		RESPONSE TIME (SEC)
2.	Pressurizer Pressure-Low	
	SIAS	
(1)	Safety Injection	
	(a) High Pressure Safety Injection	31.2*
	(b) Low Pressure Safety Injection	41.2*
	(c) Charging Pumps	31.2*
(2)	Control Room Isolation	Not Applicable
(3)	Containment Isolation (NOTE 3)	11.2* (NOTE 2)
(4)	Containment Spray (Pumps)	25.6*
(5)	Containment Emergency Cooling	
	(a) CCW Pumps	31.2*
	(b) CCW Valves (NOTE 4b)	23.2*
	(c) Emergency Cooling Fans	21.2*
3.	Containment Pressure-High	
a.	SIAS	
(1)	Safety Injection	
	(a) High Pressure Safety Injection	41.0*
	(b) Low Pressure Safety Injection	41.0*
(2)	Control Room Isolation	Not Applicable
(3)	Containment Spray (Pumps)	25.4*
(4)	Containment Emergency Cooling	
	(a) CCW Pumps	31.0*
	(b) CCW Valves (NOTE 4b)	23.0*
	(c) Emergency Cooling Fans	21.0*
b.	CIAS	
(1)	Containment Isolation	10.9* (NOTE 2)
(2)	Main Feedwater Backup Isolation and Backup Isolation Valves (HV 4048, HV 4052, HV 1105, HV 1106, HV 4047, HV 4051)	10.9
(3)	CCW Valves (Note 4a)	20.9
(4)	Mainsteam Isolation Valves (HV 8204, HV 8205)	8.9
(5)	Minipurge Isolation Valves	5.9
4.	Containment Pressure - High-High	
	CSAS	
	Containment Spray	23.0*

TABLE 4.3-2

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1. SAFETY INJECTION (SIAS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3, 4
b. Containment Pressure - High	S	(6)	Q	1, 2, 3
c. Pressurizer Pressure - Low	S	(6)	Q	1, 2, 3
d. Automatic Actuation Logic	N.A.	N.A.	Q(1)(3), SA(4)	1, 2, 3, 4
2. CONTAINMENT SPRAY (CSAS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3
b. Containment Pressure -- High - High	S	(6)	Q	1, 2, 3
c. Automatic Actuation Logic	N.A.	N.A.	Q(1)(3), SA(4)	1, 2, 3
3. CONTAINMENT ISOLATION (CIAS)				
a. Manual CIAS (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3, 4
b. Manual SIAS (Trip Buttons)(5)	N.A.	N.A.	(6)	1, 2, 3, 4
c. Containment Pressure - High	S	(6)	Q	1, 2, 3
d. Automatic Actuation Logic	N.A.	N.A.	Q(1)(3), SA(4)	1, 2, 3, 4
4. MAIN STEAM ISOLATION (MSIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3
b. Steam Generator Pressure - Low	S	(6)	Q	1, 2, 3
c. Automatic Actuation Logic	N.A.	N.A.	Q(1)(3), SA(4)	1, 2, 3
5. RECIRCULATION (RAS)				
a. Refueling Water Storage Tank - Low	S	R	Q	1, 2, 3, 4
b. Automatic Actuation Logic	N.A.	N.A.	Q(1)(3), SA(4)	1, 2, 3, 4
6. CONTAINMENT COOLING (CCAS)				
a. Manual CCAS (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3, 4
b. [illegible]ed intentionally				
c. Automatic Actuation Logic	N.A.	N.A.	Q(1)(3), SA(4)	1, 2, 3, 4

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				
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