March 17, 1995

Mr. Harold B. Ray
Senior Vice President
Southern California Edison Company
Irvine Operations Center
23 Parker Street
Irvine, California 92718

SUBJECT: ISSUANCE OF AMENDMENT FOR SAN ONOFRE NUCLEAR GENERATING STATION, UNIT NO. 2 (TAC NO. M87830) AND UNIT NO. 3 (TAC NO. M87831)

Dear Mr. Ray:

The Commission has issued the enclosed Amendment No. 118 to Facility Operating License No. NPF-10 and Amendment No. 107 to Facility Operating License No. NPF-15 for San Onofre Nuclear Generating Station, Unit Nos. 2 and 3. The amendments consist of changes to the Technical Specifications (TS) in response to your application dated September 30, 1993, as supplemented by letters dated November 16, 1993, January 18, 1995, and February 2, 1995.

These amendments revise the TS to (1) divide item 7 of Tables 3.3-3, 3.3-4, 3.3-5, and 4.3-2 into item 7a that addresses the existing loss-of-voltage (LOV) function and item 7b that separately addresses the degraded grid voltage (DGV) function; (2) add footnote (d) to Table 3.3-3 to indicate that the DGV actuation relay logic is applicable in Modes 1, 2, 3, and 4 when the diesel generator circuit breaker is open; (3) replace the reference to Figure 3.3-1 in item 7a of Tables 3.3-4 and 3.3-5 with definite voltage and time values; (4) add note 9 to Table 3.3-5 to explain the response time for an LOV signal; and (5) delete Figure 3.3-1, "Degraded Bus Voltage Trip Setting."

A copy of our related Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly Federal Register notice.

Sincerely,

Original Signed By

Mel B. Fields, Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

9503280120 950317
PDR ADOCK 05000361
P PDR

Docket Nos. 50-361
and 50-362

Enclosures:
1. Amendment No. 118 to NPF-10
2. Amendment No. 107 to NPF-15
3. Safety Evaluation

cc w/encls: See next page

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TQuay	OGC, O15B18
CGrimes	ACRS (4), T2E26
Region IV	MFields
CBerlinger	KPerkins, RIV/WC

270012

DOCUMENT NAME: S087830.AMD *See Previous Concurrence Sheet

OFC	LA:DRPW	EELB*	OGC	PM:PD4-2
NAME	DFoster-Curseen	CBerlinger		MFields:pk
DATE	/ /95	3/8/95	3/16/95	3/16/95

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DOCUMENT NAME: COPY

March 17, 1995

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OFFICIAL RECORD COPY

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

March 17, 1995

Mr. Harold B. Ray
Senior Vice President
Southern California Edison Company
Irvine Operations Center
23 Parker Street
Irvine, California 92718

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These amendments revise the TS to (1) divide item 7 of Tables 3.3-3, 3.3-4, 3.3-5, and 4.3-2 into item 7a that addresses the existing loss-of-voltage (LOV) function and item 7b that separately addresses the degraded grid voltage (DGV) function; (2) add footnote (d) to Table 3.3-3 to indicate that the DGV actuation relay logic is applicable in Modes 1, 2, 3, and 4 when the diesel generator circuit breaker is open; (3) replace the reference to Figure 3.3-1 in item 7a of Tables 3.3-4 and 3.3-5 with definite voltage and time values; (4) add note 9 to Table 3.3-5 to explain the response time for an LOV signal; and (5) delete Figure 3.3-1, "Degraded Bus Voltage Trip Setting."

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Sincerely,

Mel B. Fields

Mel B. Fields, Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Docket Nos. 50-361
and 50-362

Enclosures:
1. Amendment No. 118 to NPF-10
2. Amendment No. 107 to NPF-15
3. Safety Evaluation

cc w/encls: See next page

Mr. Harold B. Ray
Southern California Edison Company

San Onofre Nuclear Generating Station
Unit Nos. 2 and 3

cc w/encls:
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Mayor
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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. 118
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 September 30, 1993, as supplemented by letters dated November 16, 1993, January 18, 1995, and February 2, 1995, 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.

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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. 118, 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 completion of the current Cycle 8 refueling outage and must be fully implemented prior to returning SONGS Unit 2 to power.

FOR THE NUCLEAR REGULATORY COMMISSION

Mel B. Fields

Mel B. Fields, Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 17, 1995

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 118 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 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 3-16	3/4 3-16
3/4 3-19	3/4 3-19
3/4 3-23	3/4 3-23
3/4 3-26	3/4 3-26
3/4 3-29	3/4 3-29
3/4 3-30	3/4 3-30
3/4 3-32	3/4 3-32
3/4 3-40	3/4 3-40

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 (LOVS, SDVS, or DGVSS)					
a. 4.16 kV Emergency Bus Undervoltage (Loss of 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

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 (LOVS, SDVS, or DGVSS)		
a. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage)	3675 V	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	≥ 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 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 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP VALUES

FUNCTIONAL UNIT	TRIP VALUE	ALLOWABLE VALUES
11. FUEL HANDLING ISOLATION (FHIS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Airborne Radiation		
i. Gaseous	(8)	(8)
c. Automatic Actuation Logic	Not Applicable	Not Applicable
12. CONTAINMENT PURGE ISOLATION (CPIS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Airborne Radiation		
i. Gaseous	(6)(7)	(6)(7)
ii. Particulate	(6)(7)	(6)(7)
iii. Iodine	(6)(7)	(6)(7)
c. Containment Area Radiation (Gamma)	$\leq$ 325 mR/hr (MODES 1-4) $\leq$ 2.4 mR/hr (MODE 6)	$\leq$ 340 mR/hr (MODES 1-4) $\leq$ 2.5 mR/hr (MODE 6)
d. 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 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) 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.

**Above normal background.

Table 3.3-5 (Continued)

INITIATING SIGNAL AND FUNCTION	RESPONSE 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 (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	
a. LOVS (loss of voltage, 127F) (Note 9)	1.00+/-00.05
b. Degraded voltage, (127D)	2.00+/-00.20
i. SDVS (Sustained Degraded Voltage)	
(a) Auxiliary Timing Relay 162D	110.00+/-22.00
ii. DGVSS (Degraded Grid Voltage with SIAS)	
(a) Auxiliary Timing Relay 162S	4.30+/-00.19
(b) Auxiliary Timing Relay 162T	1.25+/-00.40
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. Control Room Toxic Gas (Butane/Propane)	
TGIS	
Control Room Ventilation - Isolation Mode	36 (NOTE 5)
14. Fuel Handling Building Airborne Radiation	
FHIS	
Fuel Handling Building Post-Accident Cleanup Filter System	Not Applicable
15. Containment Airborne Radiation	
CPIS	
Containment Purge Isolation	2 (NOTE 2)
16. Containment Area Radiation	
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.

* 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

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 (LOVS, SDVS, or DGVSS)				
a. 4.16 kV Emergency Bus Undervoltage (Loss of 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

TABLE 4.3-3

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
PROCESS MONITORS (Continued)				
3. Noble Gas Monitors				
a. Plant Vent Stack (2RT-7865-1, 3RT-7865-1, 2/3RT-7808)	D	R	Q	1, 2, 3, 4
b. Condenser Evacuation System (2RT-7870-1, 2RT-7818-1)	D	R	Q	1, 2, 3, 4(1)

NOTES:

#In accordance with Table 4.3-2 surveillance requirements for these instrument channels.

*With irradiated fuel in the storage pool.

(1) With any main steam isolation valve and/or any main steam isolating valve bypass valve not fully closed.

(2) At least once per refueling interval.

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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. 50-362

SAN ONOFRE NUCLEAR GENERATING STATION, UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 107
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 September 30, 1993, as supplemented by letters dated November 16, 1993, January 18, 1995, and February 2, 1995, 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. 107, 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 completion of the Cycle 8 refueling outage and must be fully implemented prior to returning SONGS Unit 3 to power.

FOR THE NUCLEAR REGULATORY COMMISSION

Mel B. Fields

Mel B. Fields, Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 17, 1995

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 107 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 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 3-16	3/4 3-16
3/4 3-19	3/4 3-19
3/4 3-23	3/4 3-23
3/4 3-26	3/4 3-26
3/4 3-29	3/4 3-29
3/4 3-30	3/4 3-30
3/4 3-32	3/4 3-32
3/4 3-40	3/4 3-40

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 (LOVS, SDVS, or DGVSS)					
a. 4.16 kV Emergency Bus Undervoltage (Loss of 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 3.3-3 (Continued)

TABLE NOTATION

ACTION 10 - With the number of channels OPERABLE one less than the Minimum Channels OPERABLE, STARTUP and/or POWER OPERATION may continue provided the following conditions are satisfied:

a. Verify that one of the inoperable channels has been bypassed and place the other inoperable channel in the tripped condition within 1 hour.

b. All functional units affected by the bypassed/tripped channel shall also be placed in the bypassed/tripped condition as listed below:

	Process Measurement Circuit	Functional Unit Bypassed/Tripped
1.	Containment Pressure Circuit	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 - Low	Steam Generator Level - Low Steam Generator Level - High Steam Generator ΔP (EFAS)

STARTUP and/or POWER OPERATION may continue until the performance of the next required CHANNEL FUNCTIONAL TEST. Subsequent STARTUP and/or POWER OPERATION may continue if one channel is restored to OPERABLE status and the provisions of ACTION 9 are satisfied.

ACTION 11 - With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channels to OPERABLE status within 48 hours or be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.

ACTION 12 - With the number of OPERABLE channels one less than the Total Number of Channels, be in at least HOT STANDBY within 6 hours and in at least HOT SHUTDOWN within the following 6 hours; however, one channel may be bypassed for up to 1 hour for surveillance testing provided the other channel is OPERABLE.

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 (LOVS, SDVS, or DGVSS)		
a. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage)	3675 V	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	≥ 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 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP VALUES

FUNCTIONAL UNIT	TRIP VALUE	ALLOWABLE VALUES
11. FUEL HANDLING ISOLATION (FHIS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Airborne Radiation		
i. Gaseous	(8)	(8)
c. Automatic Actuation Logic	Not Applicable	Not Applicable
12. CONTAINMENT PURGE ISOLATION (CPIS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Airborne Radiation		
i. Gaseous	(6)(7)	(6)(7)
ii. Particulate	(6)(7)	(6)(7)
iii. Iodine	(6)(7)	(6)(7)
c. Containment Area Radiation (Gamma)	$\leq$ 325 mR/hr (MODES 1-4) $\leq$ 2.4 mR/hr (Mode 6)	$\leq$ 340 mR/hr (MODES 1-4) $\leq$ 2.5 mR/hr (MODE 6)
d. 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 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) 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 FUNCTION	RESPONSE 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 (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	
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, 127F) (Note 9)	1.00+/-00.05
b. Degraded voltage, (127D)	2.00+/-00.20
i. SDVS (Sustained Degraded Voltage)	
(a) Auxiliary Timing Relay 162D	110.00+/-22.00
ii. DGVSS (Degraded Grid Voltage with SIAS)	
(a) Auxiliary Timing Relay 162S	4.30+/-00.19
(b) Auxiliary Timing Relay 162T	1.25+/-00.40
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)

INITIATING SIGNAL AND FUNCTION	RESPONSE TIME (SEC)
13. Control Room Toxic Gas (Butane/Propane) TGIS	
Control Room Ventilation - Isolation Mode	36 (NOTE 5)
14. Fuel Handling Building Airborne Radiation FHIS	
Fuel Handling Building Post-Accident Cleanup Filter System	Not Applicable
15. Containment Airborne Radiation CPIS	
Containment Purge Isolation	2 (NOTE 2)
16. Containment Area Radiation 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, MFIVs, and CCW valves 3HV-6211, 3HV-6216, 3HV-6223 and 3HV-6236.

4a. CCW noncritical 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.

* Emergency diesel generator starting delay (10 seconds) and sequence loading delays for SIAS are included.

** Emergency diesel generator starting delay (10 seconds) is included.

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. deleted 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 (LOVS, SDVS, or DGVSS)				
a. 4.16 kV Emergency Bus Undervoltage (Loss of 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

TABLE 4.3-3 (Continued)

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
PROCESS MONITORS (Continued)				
3. Noble Gas Monitors				
a. Plant Vent Stack (2/3 RT-7808, 2RT-7865-1, 3RT-7865-1)	D	R	Q	1, 2, 3, 4
b. Condenser Evacuation System (3RT-7818, 3RT-7870-1)	D	R	Q	1, 2, 3, 4(1)

NOTES:

#In accordance with Table 4.3-2 surveillance requirements for these instrument channels.
*With irradiated fuel in the storage pool.

(1) With any main steam isolation valve and/or any main steam isolating valve bypass valve not fully closed.

(2) At least once per refueling interval.

DELETED INTENTIONALLY

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 118 TO FACILITY OPERATING LICENSE NO. NPF-10

AND AMENDMENT NO. 107 TO FACILITY OPERATING LICENSE NO. NPF-15

SOUTHERN CALIFORNIA EDISON COMPANY

SAN DIEGO GAS AND ELECTRIC COMPANY

THE CITY OF RIVERSIDE, CALIFORNIA

THE CITY OF ANAHEIM, CALIFORNIA

SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 AND 3

DOCKET NOS. 50-361 AND 50-362

1.0 INTRODUCTION

By letter dated September 30, 1993, as supplemented by letters dated November 16, 1993, and January 18 and February 2, 1995, Southern California Edison Company, et al. (SCE or the licensee) submitted a request for changes to the Technical Specifications (TS) for San Onofre Nuclear Generating Station (SONGS) Unit Nos. 2 and 3. The proposed changes would (1) divide item 7 of Tables 3.3-3, 3.3-4, 3.3-5, and 4.3-2 into item 7a that addresses the existing loss-of-voltage (LOV) function and item 7b that separately addresses the degraded grid voltage (DGV) function; (2) add footnote (d) to Table 3.3-3 to indicate that the DGV actuation relay logic is applicable in Modes 1, 2, 3, and 4 when the diesel generator circuit breaker is open; (3) replace the reference to Figure 3.3-1 in Tables 3.3-4 item 7a and 3.3-5 item 7 with definite voltage and time values; (4) add note 9 to Table 3.3-5 to explain the response time for an LOV signal; and (5) delete Figure 3.3-1, "Degraded Bus Voltage Trip Setting."

The initial notice in the Federal Register only referenced the September 30, 1993, letter. The additional information contained in the November 16, 1993, January 18, 1995, and February 2, 1995, letters was clarifying in nature, within the scope of the initial notice and did not affect the NRC staff's proposed no significant hazards consideration determination.

2.0 DISCUSSION

By letter dated September 30, 1993, SCE proposed an amendment to the TS for the degraded grid voltage (DGV) protection system at SONGS Units 2 and 3. The proposed amendment changes portions of TS 3/4.3.2, "Engineering Safety Feature Actuation Systems (ESFAS) Instrumentation," shown in Figure 3.3-1 and

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Tables 3.3-3, 3.3-4, 3.3-5, and 4.3-2. The licensee's November 16, 1993, letter provided an evaluation of how the proposed modification will comply with staff positions on degraded voltage protection. The licensee's January 18, 1995, letter provided additional supporting technical information for this TS change request, and the licensee's February 2, 1995, letter amended the original TS change request to expand the response time testing requirements for the new degraded voltage protection signals.

After SONGS Unit 1 was permanently shut down in 1992, SCE performed a new grid stability and voltage study. The study confirmed that, if several events were to occur at the same time, sustained DGV conditions were possible at SONGS Units 2 and 3. SCE later determined that an amendment request was necessary to enhance the existing DGV protection scheme. In addition to the TS amendment, the licensee proposes a design modification to the existing loss-of-voltage (LOV) logic to provide more reliable protection when LOV exists with a safety injection actuation signal (SIAS).

Currently, undervoltage (i.e., LOV and DGV) protection functions for the 4.16 kV Class 1E safety buses at SONGS are performed by a single set of induction disc-type relays (Westinghouse Type CV-2) with an inverse time characteristic. The current TS gives no definite trip values and time delays for each of the undervoltage relays; the relays trip according to the time-voltage characteristic curve shown in TS Figure 3.3-1, "Degraded Bus Voltage Trip Setting," and the DGV function relies on an LOV signal generated by the severity of the degraded voltage conditions. To give more reliable undervoltage protection at the safety buses, SCE proposes that the existing relays be used only for LOV protection and that new solid-state DGV protection relays (Brown Boveri Type 27N) be installed for the DGV function.

Under the existing design, if a DGV condition occurs following an SIAS in a unit, the Class 1E safety buses, which are normally powered from the reserve auxiliary transformer (AT), will attempt to transfer through the cross-tie to an alternate power source (i.e., alternate reserve AT) of the adjacent unit. If power is not available from the alternate reserve AT within 4 seconds after the transfer, the unit will then transfer the safety buses to their associated standby sources (i.e., emergency diesel generators [EDGs]).

Since all the offsite power sources to the safety buses are supplied from a common switchyard, the licensee states that power from the alternate reserve AT could be degraded once power from the reserve AT was in a degraded condition. A direct transfer of the 4.16 kV Class 1E buses to the EDGs could eliminate unnecessary time delays inherent in the existing undervoltage transfer logic, which seeks the alternate power source before transferring the buses to its respective EDGs. On this basis, the licensee considers it preferable to have the safety buses transfer directly to the EDGs when a DGV condition exists concurrently with an SIAS.

Using the same logic, the licensee also proposes a design modification that would allow the safety buses to be transferred directly to their respective EDGs when LOV exists concurrently with an SIAS. Once this design modification is implemented, the safety buses at SONGS will transfer directly to the EDGs

when either a DGV or an LOV condition occurs after an SIAS. For the undervoltage cases without an SIAS, the safety buses will continue to transfer to the alternate reserve AT.

3.0 EVALUATION

The NRC staff has reviewed the proposed changes to TS 3/4.3.2 shown in Figure 3.3-1 and Tables 3.3-3, 3.3-4, 3.3-5, and 4.3-2. The staff's evaluation follows.

Changes for Item 7 in Tables 3.3-3, 3.3-4, 3.3-5, and 4.3-2

The licensee proposes to change the heading "LOSS OF POWER (LOV)" of item 7 in the tables to read "LOSS OF POWER (LOV, SDVS, or DGVSS)" and to separate item 7 into two sections (items 7a and 7b) by removing the phrase "and Degraded Voltage" in item 7a, "4.16 kV Emergency Bus Undervoltage (Loss of Voltage and Degraded Voltage)," and making a new section, item 7b, "4.16 kV Emergency Bus Undervoltage (Degraded Voltage)."

With installation of a new DGV protection system, the licensee needs to divide item 7 so as to address the DGV function separately from the existing LOV function. Accordingly, the licensee proposes to (1) change the headings of the above undervoltage protection system functions to include three different undervoltage cases (LOV, sustained degraded voltage signal (SDVS), and degraded grid voltage with SIAS signal (DGVSS)) and (2) divide the undervoltage protection systems into two separate sections, item 7a for LOV and item 7b for DGV.

The staff has reviewed the proposed heading changes to accommodate three different undervoltage cases (item 7) and to incorporate the LOV and DGV sections of the undervoltage protection systems in the above tables. Since the SDVS is the same as a DGV case and the DGVSS is the same as a DGV case with an SIAS, the changes are administrative in nature. The staff finds that the proposed format is consistent with the existing LOV TS, which the staff had approved. On this basis, the staff concludes that the heading changes in item 7 and the division of the LOV and DGV sections for undervoltage protection into items 7a and 7b are acceptable.

DGV Relay Logic Channels and Surveillance in Tables 3.3-3 and 4.3-2

With the addition of the DGV protection system (item 7b), the licensee proposes (1) new relay actuation logic channels for the DGV relays in Table 3.3-3 (a total of four channels per bus with a minimum of two channels per bus to trip and a minimum of three operable channels per bus when the unit is in Modes 1 through 4) and (2) a surveillance requirement for the DGV relays in Table 4.3-2 that a channel check be performed once every shift and a channel calibration and functional test every refueling interval while the unit is in Modes 1 through 4. Footnote (d) to Table 3.3-3 has been added to indicate that the DGV actuation relay logic is applicable in Modes 1, 2, 3, and 4 when the diesel generator circuit breaker is open.

The staff has reviewed the DGV relay actuation channel configuration and surveillance requirements proposed in item 7b in Tables 3.3-3 and 4.3-2 and compared them with those for the existing LOV relays (item 7a). The staff finds that the actuation logic and the surveillance requirements for DGV relays are identical to those for the existing LOV relays. Regarding the addition of Footnote (d) to Table 3.3-3, the licensee states that LOV relays will remain in service when the EDG is in parallel with the offsite power (e.g., EDGs in testing modes). The staff finds that an undervoltage trip for a DGV condition is not desirable when the standby power source is already in use.

Since the proposed changes for DGV relays provide the same level of assurance of operability as the existing requirements for the LOV undervoltage scheme, the staff concludes that the proposed DGV relay actuation channel configuration and surveillance requirements shown in item 7b in Tables 3.3-3 and 4.3-2 are acceptable.

Trip Values, Allowable Values, and Time Delays for LOV and DGV Relays in Tables 3.3-4 and 3.3-5

The licensee proposes the following new trip values, allowable values, and time delays for undervoltage relays (item 7) in these tables:

(1) for an LOV case (item 7a), a definite trip value of 3675 V with allowable values of 3554 to 3796 V and a response time of 1.00 +/- 0.05 seconds; and

(2) for degraded grid voltage relays (item 7b), the trip value is 4228 V with allowable values of 4181 to 4275 V. The time delay values of 2.0 +/- 0.2 seconds are provided seperately for sustained degraded voltage situations and for degraded grid voltage with SIAS situations. For sustained degraded voltage, the response time is set at 110.00 +/- 22.00 seconds. For degraded grid voltage with SIAS, the time delay is set at 4.30 +/- 0.19 seconds for auxiliary timing relay 162S, and at 1.25 +/- 0.40 seconds for auxiliary timing relay 162T.

With the proposed definite trip values and response times for LOV and DGV relays, the licensee proposes to delete Figure 3.3-1, "Degraded Bus Voltage Trip Setting," and the existing reference (item 4 of the "Table Notation" section of Table 3.3-4) to undervoltage relay trip setpoints in Figure 3.3-1. In addition, note 9 is proposed for Table 3.3-5 to clarify that the 1.00 second response time for an LOV signal is for a step voltage loss from nominal bus voltage to 0.0 volts.

After SONGS Unit 1 was shut down permanently in 1992, the licensee recognized that sustained DGV conditions could occur at the remaining SONGS units. The licensee stated that the above trip setpoint values and time delays for the LOV and DGV relays proposed in this amendment request had been reevaluated using new voltage calculations. However, the licensee's amendment submittal of September 30, 1993, did not include the voltage setpoint calculations that were used as a basis for selecting the proposed TS trip values, allowable

values, and time delays for LOV and DGV relays. The licensee's January 18, 1995, letter provided the supporting calculations: E4C-082 (system dynamic voltages during design basis accident), E4C-090 (auxiliary system voltage regulation), E4C-098 (4 kV switchgear protective setting calculation), and E4C-099 (SR 480 V power circuit breaker settings).

The staff has reviewed the licensee's calculations to determine (1) whether adequate voltage can be provided at the terminals of all engineering safety features (ESF) equipment to perform safety functions under a minimum allowable switchyard voltage of 218 kV and (2) whether the time delay would exceed the maximum time delay that is assumed in the final safety analysis report (FSAR) accident analyses.

The staff finds that the proposed undervoltage protection system has the capability to separate the safety buses from the offsite power system after an SIAS and to detect a sustained degraded condition and that the safety bus will transfer directly to the standby power source within 10 seconds. This 10-second delay is bounded by and consistent with the assumptions of the accident analysis in Chapter 15 of the updated FSAR. The staff finds that the 134.2-second overall time delay has been selected so that the permanently connected Class 1E loads on the safety buses will not be damaged.

The staff concludes that the proposed trip values and time delays for the undervoltage relays will protect the Class 1E equipment from sustained degraded voltages under accident (i.e., DGVSS) and nonaccident conditions (i.e., SDVS) and are, therefore, acceptable. With the proposed definite voltage trip value and time delay for the LOV relays, the staff also concludes that the deletion of Figure 3.3-1, the reference to Figure 3.3-1, and the addition of note 9, which clarifies initiation of the LOV response time, are acceptable.

The staff requested the licensee to submit an assessment of how the SONGS enhanced DGV protection scheme and related proposed TS comply with (1) the guidance of the NRC's June 3, 1977, letter concerning installation of the DGV protection system under Multiplant Action (MPA) B-23, and (2) the current DGV protection requirement of Standard Review Plan, Section 8.3, Branch Technical Position (BTP) PSB-1, "Adequacy of Station Electrical Distribution System Voltages."

The licensee's November 16, 1993, letter provided the assessment of how the SONGS enhanced DGV protection scheme and related proposed TS comply with the above requirements. The staff reviewed the information contained in this submittal and determined that the proposed undervoltage protection scheme meets all the positions in BTP PSB-1, except the requirement that the analytical techniques and assumptions used for the voltage analysis be verified by an actual test. This verification was provided in the licensee's January 18, 1995, letter, which compared the pre-operational transformer tap verification test data to results predicted analytically for both steady-state voltage simulation and dynamic voltage simulation. In both cases, the analytical predictions resulted in voltages at the 4 kV and 480 V emergency buses that were conservative when compared to the actual measured voltages.

The staff concludes that the results of this comparison demonstrates that the PSB-1 acceptance criteria have been met, and therefore the techniques and assumptions used in voltage analysis are acceptable.

The licensee also proposes a design modification to allow the safety buses to go directly to the standby power sources should an LOV condition occur after an SIAS in a unit. This would eliminate the delay inherent in the existing scheme, since the logic first seeks the alternate reserve AT before transferring the safety buses to the EDGs.

Since the proposed design modification would affect the interaction between the onsite and offsite power sources, the staff asked the licensee how the proposed design modification would affect its commitment to 10 CFR Part 50, Appendix A, General Design Criterion (GDC) 17. The licensee referred to the original safety evaluation report (NUREG-0712), in which the staff states that each SONGS offsite configuration provides two immediate access circuits (i.e., power from reserve AT and alternate reserve AT) from the preferred power system to the onsite emergency buses. On this basis, the staff concluded in NUREG-0712 that this configuration exceeded the requirements of GDC 17 and, therefore, was acceptable.

With regard to the proposed modification, the licensee explained that the alternate preferred power supply (i.e., alternate reserve AT) previously identified as an immediate access circuit was now being designated as a delayed access circuit. Once the design modification is completed, the licensee will classify each unit at SONGS having one immediate access circuit and one delayed access circuit. The licensee states that this interpretation (i.e., one immediate and one delayed access circuit) still satisfies GDC 17, since one offsite circuit will be immediately available following an SIAS. The staff agrees with the licensee's assessment and concludes that since the licensee's proposed modification satisfies GDC 17, it is acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the California State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (58 FR 59755). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no

environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

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