September 9, 1986

Docket Nos.: 50-361
and 50-362

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Gentlemen:

Subject: Issuance of Amendment No. 55 to Facility Operating License NPF-10 and Amendment No. 44 to Facility Operating License NPF-15 San Onofre Nuclear Generating Station, Units 2 and 3

The Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 55 to Facility Operating License No. NPF-10 and Amendment No. 44 to Facility Operating License No. NPF-15 for the San Onofre Nuclear Generating Station, Units 2 and 3, located in San Diego County, California. The amendments revise Technical Specification (TS) 3/4.5.2, "Emergency Core Cooling Systems (ECCS) Subsystems - Tavg greater than or equal to 350°F."

These amendments were requested by your letters of April 2, 1984, and July 1, 1985, and cover Proposed Change Numbers PCN-140 and PCN-189.

A copy of the Safety Evaluation supporting the amendments is also enclosed.

Sincerely,

/S/

Harry Rood, Senior Project Manager
PWR Project Directorate No. 7
Division of PWR Licensing-B

Enclosures:
1. Amendment No. 55 to NPF-10
2. Amendment No. 44 to NPF-15
3. Safety Evaluation

cc: See next page

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Telephone concurrence from B. Vogler

DPWR-B:PBD7	DPWR-B:PBD7	OGC	DPWR-B:PBD7
JLee	HRood/yt		GWKnighton
8/11/86	8/20/86	8/28/86	9/9/86

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

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 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 55
License No. NPF-10

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

   A. The applications for amendment to the license for San Onofre Nuclear Generating Station, Unit 2 (the facility) filed by the Southern California Edison Company on behalf of itself and San Diego Gas and Electric Company, The City of Riverside and the City of Anaheim, California (licensees) dated April 2, 1984 and July 1, 1985, comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations as set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the 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 set forth in 10 CFR Chapter I;

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

   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 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. 55, are hereby incorporated in the license. SCE shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. The change in Technical Specifications is to become effective within 30 days of issuance of the amendment. In the period between issuance of the amendment and the effective date of the new Technical Specifications, the licensees shall adhere to the Technical Specifications existing at the time. The period of time during change over shall be minimized.

4. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Harry Rood

Harry Rood, Senior Project Manager
PWR Project Directorate No. 7
Division of PWR Licensing-B

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 9, 1986

ATTACHMENT TO LICENSE AMENDMENT NO. 55

FACILITY OPERATING LICENSE NO. NPF-10

DOCKET NO. 50-361

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change. Also to be replaced are the following overleaf pages to the amended pages.

Amendment Pages	Overleaf Pages
3/4 3-29	-
3/4 3-30	-
3/4 5-5	3/4 5-6

Table 3.3-5 (Continued)

INITIATING SIGNAL AND FUNCTION	RESPONSE TIME (SEC)
5. Steam Generator Pressure - Low	
MSIS	
(1) Main Steam Isolation (HV8204, HV8205)	6.9
(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 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)

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.

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

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

2. A visual inspection of the containment sump and verifying that the subsystem suction inlets are not restricted by debris and that the sump components (trash racks, screens, etc.) show no evidence of structural distress or abnormal corrosion.

e. At least once per 18 months, during shutdown, by:

1. Verifying that each automatic valve in the flow path actuates to its correct position on SIAS and RAS test signals.

2. Verifying that each of the following pumps start automatically upon receipt of a Safety Injection Actuation Test Signal:

a. High-Pressure Safety Injection pump.

b. Low-Pressure Safety Injection pump.

c. Charging pump.

3. Verifying that on a Recirculation Actuation Test Signal, the containment sump isolation valves open; and that on a RAS test signal coincident with a high-high containment sump test signal, all the recirculation valves to the refueling water tank close.

f. By verifying that each of the following pumps develops the indicated developed head and/or flow rate when tested pursuant to Specification 4.0.5:

1. High-Pressure Safety Injection pumps developed head, at an indicated flow rate of 650 gpm, greater than or equal to 2142 feet for P017, 2101 feet for P018 and 2103 for P019 (see NOTE 1).

2. Low-Pressure Safety Injection pump developed head greater than or equal to 406.1 feet.

3. Charging pump flow rate greater than or equal to 40 gpm.

g. By performing a flow balance test, during shutdown, following completion of modifications to the ECCS subsystems that alter the subsystem flow characteristics and verifying the following flow rates:

1. For High-Pressure Safety Injection pump cold leg injection with a single pump running:

a. The sum of the injection lines flow rates, excluding the highest flow rate, is greater than or equal to 657 gpm for P017 running, 667 gpm for P018 running and 672 gpm for P019 running, and

b. The total pump flow rate is greater than or equal to 900 gpm for P017 running, 913 gpm for P018 running and 918 gpm for P019 running.

SURVEILLANCE REQUIREMENTS (Continued)

2. For a single High-Pressure Safety Injection pump hot/cold leg injection.

   a. The sum of the cold leg injection flow rates is greater than or equal to 385 gpm, and

   b. The hot leg injection flow rate is greater than or equal to 385 gpm.

   c. The combined total hot/cold legs injection flow rate is greater than or equal to 896 gpm.

3. For the Low-Pressure Safety Injection pump with a single pump running:

   a. The flow through each injection leg shall be greater than or equal to 3000 gpm when tested individually and corrected to the same pump suction source and leg back pressure conditions. The difference between high and low flow legs shall be less than or equal to 100 gpm.

   b. The total ECCS flow through 2 cold leg injection lines shall be greater than or equal to 4450 gpm when corrected for elevation head.

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

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 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 44
License No. NPF-15

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

   A. The applications for amendment to the license for San Onofre Nuclear Generating Station, Unit 2 (the facility) filed by the Southern California Edison Company on behalf of itself and San Diego Gas and Electric Company, The City of Riverside and the City of Anaheim, California (licensees) dated April 2, 1984 and July 1, 1985, comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations as set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the 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 set forth in 10 CFR Chapter I;

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

   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 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. 44, are hereby incorporated in the license. SCE shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. The change in Technical Specifications is to become effective within 30 days of issuance of the amendment. In the period between issuance of the amendment and the effective date of the new Technical Specifications, the licensees shall adhere to the Technical Specifications existing at the time. The period of time during change over shall be minimized.

4. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Harry Rood

Harry Rood, Senior Project Manager
PWR Project Directorate No. 7
Division of PWR Licensing-B

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 9, 1986

ATTACHMENT TO LICENSE AMENDMENT NO. 44

FACILITY OPERATING LICENSE NO. NPF-15

DOCKET NO. 50-362

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change. Also to be replaced are the following overleaf pages to the amended pages.

Amendment Page	Overleaf Page
3/4 3-29	-
3/4 3-30	-
3/4 5-4	3/4 5-3
3/4 5-5	3/4 5-6

Table 3.3-5 (Continued)

INITIATING SIGNAL AND FUNCTION	RESPONSE TIME (SEC)
5. Steam Generator Pressure - Low	
a. MSIS	
(1) Main Steam Isolation (HV8204, HV8205)	6.9
(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. LOV (loss of voltage and degraded voltage)	Figure 3.3-1
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 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 seconds) and sequence loading delays for SIAS are included.

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

3/4.5.2 ECCS SUBSYSTEMS - T_{avg} GREATER THAN OR EQUAL TO 350°F

LIMITING CONDITION FOR OPERATION

3.5.2 Two independent Emergency Core Cooling System (ECCS) subsystems shall be OPERABLE with each subsystem comprised of:

a. One OPERABLE high-pressure safety injection pump,

b. One OPERABLE low-pressure safety injection pump, and

c. One OPERABLE charging pump capable of taking suction from either the boric acid makeup tank or the refueling water storage tank.

d. An independent OPERABLE flow path capable of taking suction from the refueling water tank on a Safety Injection Actuation Signal and automatically transferring suction to the containment sump on a Recirculation Actuation Signal.

APPLICABILITY: MODES 1, 2 and 3*.

ACTION:

a. With one ECCS subsystem inoperable, restore the inoperable subsystem to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

b. In the event the ECCS is actuated and injects water into the Reactor Coolant System, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.9.2 within 90 days describing the circumstances of the actuation and the total accumulated actuation cycles to date. The current value of the usage factor for each affected safety injection nozzle shall be provided in this Special Report whenever its value exceeds 0.70.

*With pressurizer pressure greater than or equal to 400 psia.

SURVEILLANCE REQUIREMENTS

4.5.2 Each ECCS subsystem shall be demonstrated OPERABLE:

a. At least once per 12 hours by verifying that the following valves are in the indicated positions with power to the valve operators removed:

Valve Number		Valve Function	Valve Position
a.	HV9353	SDC Warmup	CLOSED
b.	HV9359	SDC Warmup	CLOSED
c.	HV8150	SDC(HX) Isolation	CLOSED
d.	HV8151	SDC(HX) Isolation	CLOSED
e.	HV8152	SDC(HX) Isolation	CLOSED
f.	HV8153	SDC(HX) Isolation	CLOSED
g.	HV0396	SDC Bypass Flow Control	CLOSED
h.	HV8161	SDC(HX) Bypass Flow Isolation	OPEN
i.	Deleted		
j.	Deleted		
k.	HV9420	Hot Leg Injection Isolation	CLOSED
l.	HV9434	Hot Leg Injection Isolation	CLOSED
m.	HV8160	SDC Bypass Flow Control	OPEN
n.	HV8162	LPSI Miniflow Isolation	OPEN
o.	HV8163	LPSI Miniflow Isolation	OPEN

b. At least once per 31 days by:

1. Verifying that the ECCS piping is full of water by venting the ECCS pump casings and accessible discharge piping high points, and

2. Verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.

c. By a visual inspection which verifies that no loose debris (rags, trash, clothing, etc.) is present in the containment which could be transported to the containment sump and cause restriction of the pump suctions during LOCA conditions. This visual inspection shall be performed:

1. For all accessible areas of the containment prior to establishing CONTAINMENT INTEGRITY, and

2. Of the areas affected within containment at the completion of containment entry when CONTAINMENT INTEGRITY is established.

d. At least once per 18 months by:

1. Verifying automatic isolation of the shutdown cooling system from the Reactor Coolant System when RCS pressure is simulated greater than or equal to 715 psia, and that the interlocks prevent opening the shutdown cooling system isolation valves when simulated RCS pressure is greater than or equal to 376 psia.

2. A visual inspection of the containment sump and verifying that the subsystem suction inlets are not restricted by debris and that the sump components (trash racks, screens, etc.) show no evidence of structural distress or abnormal corrosion.

e. At least once per 18 months, during shutdown, by:

1. Verifying that each automatic valve in the flow path actuates to its correct position on SIAS and RAS test signals.

2. Verifying that each of the following pumps start automatically upon receipt of a Safety Injection Actuation Test Signal:

a. High-Pressure Safety Injection pump.

b. Low-Pressure Safety Injection pump.

c. Charging pump.

3. Verifying that on a Recirculation Actuation Test Signal, the containment sump isolation valves open; and that on a RAS test signal coincident with a high-high containment sump test signal, all the recirculation valves to the refueling water tank close.

f. By verifying that each of the following pumps develops the indicated developed head and/or flow rate when tested pursuant to Specification 4.0.5:

1. High-Pressure Safety Injection pumps developed head, at an indicated flow rate of 650 gpm, greater than or equal to 2093 feet for P017, 2132 feet for P018 and 2099 for P019 (see NOTE 1).

2. Low-Pressure Safety Injection pump developed head greater than or equal to 396 feet at miniflow.

3. Charging pump flow rate greater than or equal to 40 gpm.

g. By performing a flow balance test, during shutdown, following completion of modifications to the ECCS subsystems that alter the subsystem flow characteristics and verifying the following flow rates:

1. For High-Pressure Safety Injection pump cold leg injection with a single pump running:

a. The sum of the injection lines flow rates, excluding the highest flow rate, is greater than or equal to 647 gpm for P017 running, 656 gpm for P018 running, and 661 gpm for P019 running, and

b. The total pump flow rate is greater than or equal to 882 gpm for P017 running, 894 gpm for P018 running, and 901 gpm for P019 running.

SURVEILLANCE REQUIREMENTS (Continued)

2. For a single High-Pressure Safety Injection pump hot/cold leg injection.

   a. The sum of the cold leg injection flow rates is greater than or equal to 385 gpm, and

   b. The hot leg injection flow rate is greater than or equal to 385 gpm.

   c. The combined total hot/cold legs injection flow rate is greater than or equal to 896 gpm.

3. For the Low-Pressure Safety Injection pump with a single pump running:

   a. The flow through each injection leg shall be greater than or equal to 3000 gpm when tested individually and corrected to the same pump suction source and leg back pressure conditions. The difference between high and low flow legs shall be less than or equal to 100 gpm.

   b. The total ECCS flow through two cold leg injection lines shall be greater than or equal to 4450 gpm when corrected for elevation head.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 55 TO NPF-10 AND AMENDMENT NO. 44 TO NPF-15

SOUTHERN CALIFORNIA EDISON COMPANY, ET AL.

SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 & 3

DOCKET NOS. 50-361 AND 50-362

INTRODUCTION

Southern California Edison Company (SCE), on behalf of itself and the other licensees, San Diego Gas and Electric Company, The City of Riverside, California, and The City of Anaheim, California, has submitted a number of applications for license amendments for San Onofre Nuclear Generating Station (SONGS), Units 2 and 3. The NRC staff's evaluation of two of these applications is described below.

PROPOSED CHANGE PCN-140

The Emergency Core Cooling System (ECCS) and its subsystems provide core cooling in the event of a loss-of-coolant accident. Technical Specification (TS) 4.5.2.a requires verification at least once per twelve hours of proper valve position for the specified ECCS valves. Manual valves 14-081 and 14-082, which are required by Technical Specification 4.5.2.a to be locked open, serve as isolation valves for valve HV-0396. The flow path in which these three valves are located serves as a bypass to the normal ECCS flowpath, isolation of which has no effect on ECCS operability. Valves 14-081 and 14-082 do not have remote position indication and, therefore, require local position verification. This necessitates frequent (e.g., at least once per twelve hours) entry into a radiation area and unnecessary personnel exposure. The proposed change which is applicable only to Unit 3, would delete valves 14-081 and 14-082 from surveillance requirement 4.5.2.a, so that it will no longer be necessary to verify their positions every twelve hours. This change makes the Unit 3 technical specifications conform to those of Unit 2.

Standard Review Plan Section 6.3, "Emergency Core Cooling System," states that the frequency and scope of periodic ECCS surveillance testing to verify operability must be adequate. In addition, 10 CFR 20 states that personnel radiation exposure should be kept as low as reasonably achievable. The closure of valves 14-081 and 14-082 (isolation valves for HV 0396 (normally closed)) has been previously analyzed for this configuration in the Final Safety Analysis Report

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(FSAR) failure modes and effect analysis of the Unit 3 safety injection system (FSAR Table 6.3-1 for Unit 3, Item 14). It was concluded that inadvertent closure of these valves would have no effect on ECCS operation, since two other valves (i.e., HV 8160 (open) and HV 8161 (open)) allow valves 14-081 and 14-082 to be bypassed and provide the normal ECCS flowpath.

The proposed change to Technical Specification 4.5.2.a will make this technical specification for Unit 3 consistent with the current technical specification at San Onofre Unit 2.

The proposed change is consistent with the Standard Review Plan, since adequate ECCS surveillance testing will still be maintained and personnel radiation exposure will be reduced. Therefore, the staff concludes that the proposed change to Technical Specification 4.5.2.a is acceptable.

PROPOSED CHANGE PCN-189

The ECCS is designed to mitigate the consequences of a loss of coolant accident (LOCA). On detection of a LOCA, the ECCS is automatically actuated by a safety injection actuation signal (SIAS) and maintains core cooling by pumping water into the reactor coolant system, initially from the refueling water storage tank (RWST). Water spilling from the break in the RCS accumulates on the containment floor. On low level in the RWST, a recirculation actuation signal (RAS) is generated, realigning the ECCS pumps to take suction from the containment sump, establishing recirculation.

In small break LOCA's, RCS pressure may remain higher than the maximum pressure developed by the high pressure safety injection (HPSI) pumps following ECCS actuation. Damage to the HPSI pumps would result after a relatively short period in this condition if a minimum flow is not maintained through the pumps. To prevent HPSI pump damage, minimum flow is guaranteed by the ECCS miniflow lines from the ECCS pump discharge to the RWST. It is desirable to close the ECCS miniflow lines following initiation of recirculation of prevent radioactive water from being pumped from the containment sump to the RWST. The RWST is vented to the atmosphere creating a potential release path.

Originally, the ECCS miniflow valves were closed automatically on a RAS generated from low RWST level. Following an event in December, 1982 involving simultaneous SIAS and RAS (i.e., ECCS pumps started and ECCS miniflow valves closed), RAS was removed from the miniflow valves to preclude damage to the ECCS pumps. Currently, closure of the ECCS miniflow valves is manually initiated by the operator. A design change (DCP 6234) is proposed at San Onofre to restore automatic ECCS miniflow valve closure. With the design change, both low RWST level and high containment sump level will be required for automatic closure of the ECCS miniflow valves. Conditioning ECCS miniflow valve closure on low RWST level and high sump level will preclude an event involving simultaneous SIAS and RAS from damaging the ECCS pumps.

To reflect the above design change, the following changes to the technical specifications are proposed by the licensee:

1. TS 3.3.2, Table 3.3-5 specifies response times for ESF equipment. The proposed change would add the ECCS miniflow isolation valves to the equipment included in Table 3.3-5 as actuated by a recirculation actuation signal. A response time of 50.7 seconds is specified (for both Units 2 and 3) which includes an allowance for diesel generator starting and load sequencing. A note is added to indicate that the closure of the ECCS miniflow valves on a RAS is conditioned by high containment sump level.

2. TS 3/4.5.2 specifies operability and surveillance testing requirements for the ECCS. One of the surveillance tests (TS 4.5.2.e.3) requires verification that the ECCS miniflow valves close within a specified period of time (currently 50.7 seconds for Unit 3; 40.7 seconds for Unit 2) upon manual actuation from the control room. The proposed change would require verification that the ECCS miniflow isolation valves close automatically on a RAS test signal coincident with a containment sump level high signal. The required response time is specified in Table 3.3-5.

   The current technical specification requires verification that the ECCS miniflow isolation valves close within a specified time (50.7 seconds for Unit 3, 40.7 seconds for Unit 2) following manual actuation. However, the time interval between RAS and the valve closure time is undefined. The proposed change will require that the valves close automatically within 50.7 seconds on a RAS coincident with high containment sump level for both Units 2 and 3. The proposed requirement to automatically close within 50.7 seconds of a RAS is more restrictive since the existing specification does not require automatic closure and does not define a closure time relative to the occurrence of a RAS. Therefore, the proposed change constitutes additional limitations not currently in the technical specifications.

   Based on the above evaluation, the staff finds that the proposed changes of technical specifications constitute an additional limitation and control not presently included in the technical specifications which improve safe plant operation. Therefore, the staff concludes that the proposed changes to the technical specifications are acceptable.

Contact With State Official

The NRC staff has advised the Chief of the Radiological Health Branch, State Department of Health Services, State of California, of the proposed determinations of no significant hazards consideration. No comments were received.

Environmental Consideration

These amendments involve changes in the installation or use of facility components located within the restricted area. The staff has determined that the amendments involve no significant increase in the amounts of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupation radiation exposure. The Commission has previously issued proposed findings that the amendments involve no significant hazards consideration, and there has been no public comment on such findings. Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR Sec. 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need to be prepared in connection with the issuance of these amendments.

Conclusion

Based upon our evaluation of the proposed changes to the San Onofre Units 2 and 3 Technical Specifications, we have concluded that: there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and such activities will be conducted in compliance with the Commission's regulations and the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public. We, therefore, conclude that the proposed changes are acceptable, and are hereby incorporated into the San Onofre 2 and 3 technical specifications.

Dated: September 9, 1986

ISSUANCE OF AMENDMENT NO. 55 TO FACILITY OPERATING LICENSE NPF-10
AND AMENDMENT NO. 44 TO FACILITY OPERATING LICENSE NPF-15
SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 AND 3

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