

August 3, 1993

Docket Nos. 50-361  
and 50-362

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

Mr. Edwin A. Guiles  
Vice President  
Engineering and Operations  
San Diego Gas & Electric Co.  
101 Ash Street  
San Diego, California 92112

Gentlemen:

SUBJECT: ISSUANCE OF AMENDMENT FOR SAN ONOFRE NUCLEAR GENERATING STATION,  
UNIT NO. 2 (TAC NO. M85101) AND UNIT NO. 3 (TAC NO. M85102)

The Commission has issued the enclosed Amendment No. 108 to Facility Operating License No. NPF-10 and Amendment No. 97 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 November 20, 1994 [sic 1992], designated by you as PCN-410.

These amendments revise the Technical Specification 3/4.4.5, "Reactor Coolant System Leakage," to allow the required water inventory balance to be performed within 120 hours of the previous balance when this activity requires interruption of transient evolutions. Previously, performance of a water inventory balance was required every 72 hours.

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

Sincerely,

Original signed by:  
Mel B. Fields, Project Manager  
Project Directorate V  
Division of Reactor Projects III/IV/V  
Office of Nuclear Reactor Regulation

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Enclosures:

1. Amendment No. 108 to NPF-10
2. Amendment No. 97 to NPF-15
3. Safety Evaluation

cc w/enclosures:  
See next page

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

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Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No.108 to NPF-10
2. Amendment No. 97 to NPF-15
3. Safety Evaluation

cc w/enclosures:  
See next page

Messrs. Ray and Guiles  
Southern California Edison Company

San Onofre Nuclear Generating  
Station, Unit Nos. 2 and 3

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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.108  
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 November 20, 1994 [sic 1992], complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

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

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 108, are hereby incorporated in the license. Southern California Edison Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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

FOR THE NUCLEAR REGULATORY COMMISSION

*for* 

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

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: August 3, 1993

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 108 TO FACILITY OPERATING LICENSE NO. NPF-10

DOCKET NO. 50-361

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

REMOVE

3/4 4-18

INSERT

3/4 4-18

## REACTOR COOLANT SYSTEM

### OPERATIONAL LEAKAGE

#### LIMITING CONDITION FOR OPERATION

---

3.4.5.2 Reactor Coolant System leakage shall be limited to:

- a. No PRESSURE BOUNDARY LEAKAGE,
- b. 1 gpm UNIDENTIFIED LEAKAGE,
- c. 1 gpm total primary-to-secondary leakage through all steam generators and 720 gallons per day through any one steam generator.
- d. 10 gpm IDENTIFIED LEAKAGE from the Reactor Coolant System, and
- e. 1 GPM leakage at a Reactor Coolant System pressure of  $2235 \pm 20$  psig from any Reactor Coolant System Pressure Isolation Valve specified in Table 3.4-1.

APPLICABILITY: MODES 1, 2, 3 and 4

#### ACTION:

- a. With any PRESSURE BOUNDARY LEAKAGE, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With any Reactor Coolant System leakage greater than any one of the limits, excluding PRESSURE BOUNDARY LEAKAGE and leakage from Reactor Coolant System Pressure Isolation Valves, reduce the leakage rate to within limits within 4 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c. With any Reactor Coolant System Pressure Isolation Valve leakage greater than the above limit, isolate the high pressure portion of the affected system from the low pressure portion within 4 hours by use of at least two closed manual or deactivated automatic valves, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

#### SURVEILLANCE REQUIREMENTS

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4.4.5.2.1 Reactor Coolant System leakages shall be demonstrated to be within each of the above limits by:

- a. Monitoring the containment atmosphere gaseous or particulate radioactivity monitor at least once per 12 hours.
- b. Monitoring the containment sump inlet flow at least once per 12 hours.

## REACTOR COOLANT SYSTEM

### SURVEILLANCE REQUIREMENTS (Continued)

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- c. Performance of a Reactor Coolant System water inventory balance at least once per 72 hours during steady state operation. If a transient evolution is occurring 72 hours from the last water inventory balance, then a water inventory balance shall be performed within 120 hours of the last water inventory balance.
- d. Monitoring the reactor head flange leakoff system at least once per 24 hours.

4.4.5.2.2 Each Reactor Coolant System Pressure Isolation Valve specified in Table 3.4-1 shall be demonstrated OPERABLE by verifying valve leakage to be within its limit:

- a. At least once per refueling interval.
- b. Prior to entering MODE 2 whenever the plant has been in COLD SHUTDOWN for 72 hours or more and if leakage testing has not been performed in the previous 9 months.
- c. Prior to declaring the valve operable following maintenance, repair or replacement work on the valve.
- d. Within 48 hours following valve actuation due to automatic or manual action or flow through the valve (for valves in Section B of Table 3.4-1).

The provisions of Specification 4.0.4 are not applicable for entry into MODE 3 or 4.



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. 97  
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 November 20, 1994 [sic 1992], complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

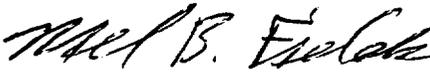
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C(2) of Facility Operating License No. NPF-15 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 97, are hereby incorporated in the license. Southern California Edison Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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

FOR THE NUCLEAR REGULATORY COMMISSION

*for* 

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

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: August 3, 1993

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 97 TO FACILITY OPERATING LICENSE NO. NPF-15

DOCKET NO. 50-362

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

REMOVE

3/4 4-19

INSERT

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## REACTOR COOLANT SYSTEM

### SURVEILLANCE REQUIREMENTS (Continued)

---

- c. Performance of a Reactor Coolant System water inventory balance at least once per 72 hours during steady state operation. If a transient evolution is occurring 72 hours from the last water inventory balance, then a water inventory balance shall be performed within 120 hours of the last water inventory balance.
- d. Monitoring the reactor head flange leakoff system at least once per 24 hours.

4.4.5.2.2 Each Reactor Coolant System Pressure Isolation Valve specified in Table 3.4-1 shall be demonstrated OPERABLE by verifying valve leakage to be within its limit:

- a. At least once per refueling interval.
- b. Prior to entering MODE 2 whenever the plant has been in COLD SHUTDOWN for 72 hours or more and if leakage testing has not been performed in the previous 9 months.
- c. Prior to returning the valve to service following maintenance, repair or replacement work on the valve.
- d. Within 24 hours following valve actuation due to automatic or manual action or flow through the valve (for valves in Section B of Table 3.4-1).

The provisions of Specification 4.0.4 are not applicable for entry into MODE 3 or 4.

TABLE 3.4-1

REACTOR COOLANT SYSTEM PRESSURE ISOLATION VALVES

SECTION A

3-018-A-551	HPSI Check
3-019-A-551	HPSI Check
3-020-A-551	HPSI Check
3-021-A-551	HPSI Check
3-152-A-551	Hot leg injection to loop #1
3-156-A-551	Hot leg injection to loop #2
3-157-A-551	Hot leg injection check
3-158-A-551	Hot leg injection check
3 HV-9337	SDC Suction Isolation
3 HV-9339	SDC Suction Isolation
3 HV-9377	SDC Suction Isolation
3 HV-9378	SDC Suction Isolation

SECTION B

8-072-A-552	LPSI Check
8-073-A-552	LPSI Check
8-074-A-552	LPSI Check
8-075-A-552	LPSI Check
12-027-A-551*	Cold leg injection to loop #1A
12-029-A-551*	Cold leg injection to loop #1B
12-031-A-551*	Cold leg injection to loop #2A
12-033-A-551*	Cold leg injection to loop #2B
12-040-A-551	SIT Check
12-041-A-551	SIT Check
12-042-A-551	SIT Check
12-043-A-551	SIT Check

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\* Redundant to LPSI and SIT checks



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO.108 TO FACILITY OPERATING LICENSE NO. NPF-10  
AND AMENDMENT NO. 97 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 November 20, 1994 [sic 1992], Southern California Edison Company, et al. (SCE or the licensee) submitted a request for changes to the Technical Specification 3/4.4.5, "Reactor Coolant System Leakage," for San Onofre Nuclear Generating Station, Unit Nos. 2 and 3. The proposed changes would revise the Surveillance Requirement 4.4.5.2.1.c to allow a transient evolution to continue and the required water inventory balance to be performed within 120 hours of the previous balance in lieu of performing the water inventory balance every 72 hours.

2.0 EVALUATION

In part, the licensee has provided the following explanation and justification:

"The Reactor Coolant System Boundary Leakage Detection System is designed to ensure that expected leakage is limited, monitored, and separated from unidentified leakage. TS 3/4.4.5.2, "Reactor Coolant System - Operational Leakage," requires monitoring Reactor Coolant System (RCS) leakage, thereby providing additional assurance of detecting an impending failure of the RCS boundary.

The basis for TS 3/4.4.5.2 "Operational Leakage" is to ensure the unidentified portion of the leakage from the RCS is less than a threshold value of 1 gpm. This threshold value is sufficiently low to ensure early detection of leakage. The limit of 10 gpm of identified leakage provides allowances for a limited amount of leakage from known sources whose presence will not interfere with the detection of unidentified leakage

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and will be considered as a portion of the allowable limit..."

"The current [Surveillance Requirement] (SR) 4.4.5.2.1.c requires a water inventory balance every 72 hours. To perform an accurate water inventory balance, the following plant conditions must be met:

- Makeup operations to the volume control tank are secured.
- Sampling of the RCS and interconnected systems are secured.
- Venting and draining of the RCS and interconnected systems are secured.
- Boration and dilution operations are secured.
- Purification ion exchanges and back-flushable filters shall not be shifted.
- Letdown to radwaste diversion is secured.
- Reactor power level variations are minimized.
- RCS temperature variations are minimized.
- Presurizer level setpoint is not to be changed during the performance of the water inventory balance.
- Safety injection tank levels shall be low enough to ensure that draining will not be required for the duration of the water inventory balance.

To meet these requirements, transient evolutions such as heat-ups, cooldowns or power changes are interrupted and plant conditions stabilized every 72 hours. A transient power evolution, which is expected to be the limiting case, will cause a Xenon transient which can last up to 36 hours. San Onofre Units 2 and 3 perform transient evolutions as part of normal operations. During a plant startup Xenon will build up and will take an additional 36 hours to reach equilibrium after reactor power is stabilized. This same phenomenon occurs when the reactor is returned to full power following the heat treatment of the circulating water system, which is performed every 6 weeks. These evolutions must be interrupted to allow for Xenon equilibrium to occur prior to performing the water inventory balance. This 36 hours has to be a holding period for the plant to stabilize. This proposed change will allow the transient evolution to continue for an additional limited period of time before stabilizing the plant is required following the completion of the transient evolution. In the worst case this change would allow 72 hours for the transient evolution, 36 hours for stabilizing the plant, and 12 hours for performing the water inventory balance. Therefore, a water inventory balance will be performed within 120 hours of the last water inventory balance.

The main plant transients which are affected are plant startups and power changes for the circulating water system heat treatments. The plant startup causes the largest Xenon oscillation. The power transients to support a heat treatment of the circulating water system would not normally cause as long a delay as a startup evolution, but they are performed every six weeks, a much greater frequency than a plant startup.

New wording for SR 4.4.5.2.1.c proposes to allow the transient evolution to continue and the required water inventory balance to be performed within 120 hours of the last water inventory balance. RCS leakage will be monitored during this time by the other three surveillances specified in Surveillance Requirement 4.4.5.2.1, which are:

- a. Monitoring the containment atmosphere gaseous or particulate radioactivity monitor at least once per 12 hours.
- b. Monitoring the containment sump inlet flow at least once per 12 hours.
- d. Monitoring the reactor head flange leakoff system at least once per 24 hours.

The experience at San Onofre indicates that transients are not a primary cause of RCS leakage. However, the potential does exist for transient induced leakage due to the transient stresses and fatigue. More importantly, the water inventory balance is not the first indicator of a leak because it is only performed once every 72 hours. The three additional methods will continue to be employed, and if the leak rate limit is exceeded, as detected by any one method, the plant will be shutdown as directed by TS 3.4.5. Additionally, experiences shows the first indication of a leak is normally an increase in the containment sump level...."

"In summary, the three surveillances listed above provide the primary means of leak detection and we have demonstrated these will identify leaks in much less than 72 hours. Therefore, the water inventory balance is a confirmation method rather than an initial leak detection method."

The staff has reviewed the licensee's evaluations and concluded that the requested change is acceptable because the early detection of unidentified leakage is assured by any one of three additional and independent monitoring requirements as identified in the licensee's discussion above. Further, the staff agrees that the RCS water inventory balance provides only confirmation of the unidentified leakage identified by the other techniques; consequently, delaying the procedure for 48 hours will not affect safe operation of the facility nor endanger the public health and safety.

### 3.0 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.

### 4.0 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 8784). 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.

### 5.0 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.

Principal Contributor: John O. Bradfute

Date: August 3, 1993