August 19, 1999

Mr. Harold B. Ray
Executive Vice President
Southern California Edison Company
San Onofre Nuclear Generating Station
P.O. Box 128
San Clemente, CA 92674-0128

SUBJECT: SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 AND 3 - ISSUANCE OF AMENDMENTS RE: PRESSURIZER SAFETY VALVE SETPOINTS (TAC NOS. MA3541 AND MA3542)

Dear Mr. Ray:

The Commission has issued the enclosed Amendment No. 156 to Facility Operating License No. NPF-10 and Amendment No.147 to Facility Operating License No. NPF-15 for San Onofre Nuclear Generating Station, Units 2 and 3, respectively. The amendments consist of changes to the Technical Specifications (TSs) in response to your application dated September 4, 1998 (PCN-493), as supplemented December 8, 1998, and February 16, 1999.

The amendments revise TS 3.4.10, Pressurizer Safety Valves, to increase the as-found pressurizer safety valve setpoint tolerances.

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,
/s/
L. Raghavan, Senior Project Manager, Section 2
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-361 and 50-362

Enclosures: 1. Amendment No. 156 to NPF-10
2. Amendment No. 147 to NPF-15
3. Safety Evaluation

cc w/encls: See next page

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

August 19, 1999

Mr. Harold B. Ray
Executive Vice President
Southern California Edison Company
San Onofre Nuclear Generating Station
P.O. Box 128
San Clemente, CA 92674-0128

SUBJECT: SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 AND 3 - ISSUANCE OF AMENDMENTS RE: PRESSURIZER SAFETY VALVE SETPOINTS (TAC NOS. MA3541 AND MA3542)

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3. Safety Evaluation

cc w/encls: See next page

San Onofre Nuclear Generating Station, Units 2 and 3

cc:

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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 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 156
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 4, 1998, as supplemented December 8, 1998, and February 16, 1999, 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. 156 , 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 shall be implemented within 30 days of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Stephen Dembek, Chief, Section 2
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: August 19, 1999

ATTACHMENT TO LICENSE AMENDMENT NO. 156

FACILITY OPERATING LICENSE NO. NPF-10

DOCKET NO. 50-361

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

| REMOVE | INSERT |
|---|---|
| 3.4-28 | 3.4-28 |
| 3.4-29 | 3.4-29 |

## 3.4 REACTOR COOLANT SYSTEM (RCS)

### 3.4.10 Pressurizer Safety Valves

LCO 3.4.10 Two pressurizer safety valves shall be OPERABLE with as-found lift settings of 2500 psia, +3% or -2%.

APPLICABILITY: MODES 1, 2, and 3.

----------NOTE----------
The lift settings are not required to be within LCO limits during MODE 3 for the purpose of setting the pressurizer safety valves under ambient (hot) conditions. This exception is allowed for 36 hours following entry into MODE 3 provided a preliminary cold setting was made prior to heatup.

Each pressurizer safety valve has an as-found tolerance of +3% or -2%. Following testing in accordance with TS 5.5.2.10, pressurizer safety valves shall be set within ±1% of the specified setpoint.
---

ACTIONS

| CONDITION | REQUIRED ACTION | | COMPLETION TIME |
|---|---|---|---|
| A. One pressurizer safety valve inoperable. | A.1 | Restore valve to OPERABLE status. | 15 minutes |
| B. Required Action and associated Completion Time not met.<br><br>OR<br><br>Two pressurizer safety valves inoperable. | B.1<br><br>AND<br><br>B.2 | Be in MODE 3.<br><br><br><br>Be in MODE 4. | 6 hours<br><br><br><br>12 hours |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|---|---|---|
| SR 3.4.10.1 | Verify each pressurizer safety valve is OPERABLE in accordance with inservice testing program. Following testing as-found lift settings shall be within +3% or -2%. However, pressurizer safety valves shall be set to within ±1% of the specified setpoint. | In accordance with the Inservice Testing Program |

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 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 147
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 4, 1998, as supplemented December 8, 1998, and February 16, 1999, 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. 147 , 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 shall be implemented within 30 days of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Stephen Dembek, Chief, Section 2
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: August 19, 1999

ATTACHMENT TO LICENSE AMENDMENT NO. 147

FACILITY OPERATING LICENSE NO. NPF-15

DOCKET NO. 50-362

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

| REMOVE | INSERT |
|---|---|
| 3.4-28 | 3.4-28 |
| 3.4-29 | 3.4-29 |

## 3.4 REACTOR COOLANT SYSTEM (RCS)

### 3.4.10 Pressurizer Safety Valves

LCO 3.4.10 Two pressurizer safety valves shall be OPERABLE with as found lift settings of 2500 psia, +3% or -2%.

APPLICABILITY: MODES 1, 2, and 3.

---NOTE---
The lift settings are not required to be within LCO limits during MODE 3 for the purpose of setting the pressurizer safety valves under ambient (hot) conditions. This exception is allowed for 36 hours following entry into MODE 3 provided a preliminary cold setting was made prior to heatup.

Each pressurizer safety valve has an as-found tolerance of +3% or -2%. Following testing in accordance with TS 5.5.2.10, pressurizer safety valves shall be set within ±1% of the specified setpoint.
---

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| A. One pressurizer safety valve inoperable. | A.1 Restore valve to OPERABLE status. | 15 minutes |
| B. Required Action and associated Completion Time not met.<br><br>OR<br><br>Two pressurizer safety valves inoperable. | B.1 Be in MODE 3.<br><br>AND<br><br>B.2 Be in MODE 4. | 6 hours<br><br><br><br>12 hours |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|---|---|---|
| SR 3.4.10.1 | Verify each pressurizer safety valve is OPERABLE in accordance with inservice testing program. Following testing as-found lift settings shall be within +3% or -2%. However, pressurizer safety valves shall be set to within ±1% of the specified setpoint. | In accordance with the Inservice Testing Program |

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 156 TO FACILITY OPERATING LICENSE NO. NPF-10

AND AMENDMENT NO. 147 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 4, 1998 (PCN-493), Southern California Edison (the licensee) proposed changes to the San Onofre Nuclear Generating Station (SONGS) Units 2 and 3 technical specifications (TSs) to increase the pressurizer safety valve (PSV) setpoint tolerance from ±1% to +3% or -2%. By letters dated December 8, 1998, and February 16, 1999, the licensee also submitted additional information in response to staff questions. The specific TS changes evaluated herein are for TS Limiting Condition for Operation 3.4.10 and Surveillance Requirement 3.4.10.1. Following the testing, the licensee proposes to reset the PSVs to within 1% of the specified setpoint.

The licensee's letter dated February 16, 1999, provided clarifications and additional information that were within the scope of the original *Federal Register* notice and did not change the staff's initial proposed no significant hazards consideration determination (64 FR 6711).

## 2.0 EVALUATION

At SONGS, there are two PSVs with a specified setpoint of 2500 psia. The licensee stated that during refueling outages the PSVs are removed and setpoint tested. In the past, there have been occurrences of the as-found setpoints being outside the TS-required setpoint band of 2500 psia ±1%. The licensee also stated that to minimize TS violations caused by setpoint drift, it has performed the necessary analyses to support the proposed expansion of the as-found TS tolerance to +3% or -2%. The licensee stated that the as-found upper tolerance limit of +3% is based on limiting the reactor coolant system (RCS) pressure to 120% of design pressure for the feedwater system pipe break (FSPB) event, and 110% of design pressure for all other design-basis events. The licensee stated that the as-found lower tolerance limit of -2% is based on ensuring a reactor trip occurs on pressurizer pressure prior to PSV actuation. The licensee proposes to reset the PSVs to within 1% of nominal setpoints after testing. This would reduce the possibility of setpoint drift outside the allowable tolerance.

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The licensee, in its submittals, has provided the results of its reanalysis for the Updated Final Safety Analysis Report (UFSAR) Chapter 15 events that are sensitive to PSV setpoints including the loss of condenser vacuum with and without the concurrent single failure, the chemical and volume control system (CVCS) malfunction with and without the concurrent single failure, and FSPB. The analytical value assumed in the reanalysis of the UFSAR Chapter 15 events for the PSV tolerance was +3% and -2%, based on a nominal set pressure of 2500 psia. The reanalysis also included the analytical value of 61% for the pressurizer level (57% TS value and up to 4% total loop uncertainty). The pressurizer level TS value of 57% was previously approved by the staff in license amendments 155/146 for Units 2 and 3, respectively, dated August 19, 1999.

The current plant high pressurizer pressure trip setpoint is 2375 psia. In previous analyses the setpoints were assumed as 2437 psia for non-environmental events, and 2450 psia for environmental events. To accommodate the large PSV tolerance, the licensee re-performed the total loop uncertainty (TLU) analysis, which resulted in a lower TLU value. The lower TLU value allowed a change in the analysis setpoints to 2410 psia for non-environmental events and 2434 psia for environmental events. There has been no change to the actual plant trip setpoint.

The licensee's reanalysis of the UFSAR Chapter 15 events that are sensitive to PSV setpoints are evaluated below.

(1) Loss of Condenser Vacuum Event

In the reanalysis of the loss of condenser vacuum event, if credit is not taken for reactor trip from the turbine trip, a reactor trip would occur as a result of high pressurizer pressure. The most limiting single failure during this event is the failure of a pressurizer level measurement channel producing false low level signal, and resulting in activation of both standby charging pumps and isolation of the letdown system. The results of the licensee's reanalysis show that the peak RCS and steam generator pressures are below 110% of their design pressures and there will be no water-solid condition in the pressurizer during this event. Operator actions were not assumed in this analysis within 30 minutes of the beginning of the transient which is consistent with the previous analysis of this event.

Since the maximum RCS pressure remains below the acceptance limit of 110% of RCS design pressure and no water will be released through the PSVs for the maximum RCS pressure case, the staff finds the licensee's analysis acceptable.

(2) CVCS Malfunction Event

In the reanalysis of the CVCS malfunction event, the licensee assumed a pressurizer level control system failure which could initiate operation of all three charging pumps and isolate letdown. In this event, various pressurizer level and pressure control indications and alarms are available to alert the operator of the event. In this reanalysis, the licensee credited operator action within 15 minutes to correct the additional charging flow and terminate this event prior to filling the pressurizer. The operator action time for this event was originally 30 minutes. In order to support a reduction of the operator action time required for this event from 30 minutes to 15 minutes, the licensee performed a simulation of this event on the plant simulator. The licensee has provided additional information including emergency operating procedures to demonstrate that the assumed 15-minute operator actions to terminate this event is achievable.

The adequacy of this assumed operator action time was previously evaluated in the staff safety evaluation dated August 19, 1999, associated with license amendments 155/146 for Units 2 and 3, respectively, relating to pressurizer level (PCN-470). The results of the analysis indicated that the peak pressurizer water volume in this event is less than 1200 cubic feet. Maintaining the pressurizer water volume less than 1465.7 cubic feet ensures that the pressurizer is not water solid and no water will flow through the PSV. The peak RCS and steam generator pressure remain below 110% of their design pressures. Since the peak RCS and steam generator pressure remain below their acceptance limits and no water will be released through the PSVs for the maximum RCS pressure case, the staff finds the licensee's analysis acceptable.

(3) FSPB Event

In the reanalysis of the FSPB event, the licensee assumes an operator action time of 30 minutes for accident mitigation which is consistent with the previous analysis. The results of this analysis indicate that the peak pressurizer volume is 1320 cubic feet which is less than 1465.7 cubic feet to ensure that the pressurizer is not water solid and no water will flow through the PSV. The peak RCS pressure of 2832 psia is less than 120% of its design pressure, which meets the acceptance criteria used for this event at SONGS Units 2 and 3 and therefore the staff finds the licensee's analysis acceptable.

(4) Transient Overpressure Analyses

The licensee has performed transient overpressure analyses to support the proposed increase in the PSV setpoint tolerance. To address the effect of possible inaccuracy in setpoint testing, the licensee stated that setpoint testing instrument uncertainty is up to + or - 0.25%, which is accounted for in determining the as-found setpoint testing performed by the offsite testing laboratory. The staff finds the setpoint testing instrument uncertainty of + or - 0.25% to be reasonable.

The licensee evaluated the effect of the increased PSV setpoint tolerance on the performance of safety-related valves. The licensee determined that safety-related valves are capable of performing their respective safety functions during the applicable analyzed transient events. Since the safety-related valves are capable of performing their respective safety functions, the staff finds the licensee's overpressure analysis acceptable.

## 3.0 SUMMARY

Based on our evaluation discussed in Section 2.0 above, the proposed as-found PSV operability setpoints of 2500 psia +3% and -2% meet the acceptance criteria for each event analyzed and therefore, the staff has concluded that the licensee's proposed changes are acceptable. The operator action times assumed in the supporting analysis and the TLU associated with the plant high pressurizer pressure trip setpoint have been addressed by the NRC staff in license amendments 155/146 for Units 2 and 3, respectively, relating to pressurizer level.

## 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the California State official was notified of the proposed issuance of the amendments. 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 (64 *FR* 6711). 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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: C. Liang
G. Hammer

Date: August 19, 1999