

November 23, 1998

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

SUBJECT: ISSUANCE OF AMENDMENT FOR SAN ONOFRE NUCLEAR GENERATING STATION, UNIT NO. 3 (TAC NO. MA3657)

Dear Mr. Ray:

The Commission has issued the enclosed Amendment No. 136 to Facility Operating License No. NPF-15 for the San Onofre Nuclear Generating Station, Unit No. 3. The amendment consists of changes to the Technical Specifications (TS) in response to your application dated September 22, 1998.

The amendment revises the TS to change the operative parameter for setting and removing the operating bypass bistables for Logarithmic Power Level - High, Reactor Coolant Flow - Low, Local Power Density - High, and Departure from Nucleate Boiling Ratio - Low trips. The operative parameter specified in the TS is being changed from "THERMAL POWER" to logarithmic power. This change makes the TS consistent with both the TS Bases and with the design bases to ensure the reactor protection setpoints are enabled for their specified operating conditions.

This same amendment was issued for SONGS Unit 2 on an emergency basis to allow resumption to power operations. This amendment for Unit 3 is being processed to allow a normal 30-day period for public comments.

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

Sincerely,  
Original Signed By  
James W. Clifford, Senior Project Manager  
Project Directorate IV-2  
Division of Reactor Projects III/IV  
Office of Nuclear Reactor Regulation

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d.f.

Docket No. 50-362

Enclosures: 1. Amendment No.136 to NPF-15  
2. Safety Evaluation

cc w/encls: See next page

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NAME	MGray	EPeyton	JClifford	TCollins	R. Bachmann
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Mr. Harold B. Ray

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November 23, 1998

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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. 136  
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 22, 1998, 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-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. 136, 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.

FOR THE NUCLEAR REGULATORY COMMISSION



James W. Clifford, Senior 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: November 23, 1998

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 136 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.

REMOVE

3.3-8

3.3-9

INSERT

3.3-8

3.3-9

Table 3.3.1-1 (page 1 of 2)  
Reactor Protective System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Linear Power Level - High	1,2	SR 3.3.1.1 SR 3.3.1.4 SR 3.3.1.6 SR 3.3.1.7 SR 3.3.1.8 SR 3.3.1.9 SR 3.3.1.13	≤ 111.0% RTP
2. Logarithmic Power Level - High <sup>(a)</sup>	2 <sup>(b)</sup>	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.12 SR 3.3.1.13	≤ .024 RTP
3. Pressurizer Pressure - High	1,2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.13	≤ 2385 psia
4. Pressurizer Pressure - Low <sup>(c)</sup>	1,2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.12 SR 3.3.1.13	≥ 1700 psia
5. Containment Pressure - High	1,2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.13	≤ 3.4 psig
6. Steam Generator 1 Pressure-Low	1,2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.13	≥ 729 psia
7. Steam Generator 2 Pressure-Low	1,2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.13	≥ 729 psia

(continued)

(a) Trip may be bypassed when logarithmic power is > 1E-4% RTP. Bypass shall be automatically removed when logarithmic power is ≤ 1E-4% RTP. Trip may be manually bypassed during physics testing pursuant to LCO 3.1.12.

(b) When any RTCB is closed.

(c) The setpoint may be decreased to a minimum value of 300 psia, as pressurizer pressure is reduced, provided the margin between pressurizer pressure and the setpoint is maintained ≤ 400 psia. Trips may be bypassed when pressurizer pressure is < 400 psia. Bypass shall be automatically removed before pressurizer pressure exceeds 500 psia (the corresponding bistable allowable value is ≤ 472 psia).

Table 3.3.1-1 (page 2 of 2)  
Reactor Protective System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
8. Steam Generator 1 Level - Low	1,2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.13	≥ 20%
9. Steam Generator 2 Level - Low	1,2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.13	≥ 20%
10. Reactor Coolant Flow - Low <sup>(d)</sup>	1,2	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.12 SR 3.3.1.13	Ramp: ≤ 0.231 psid/sec. Floor: ≥ 12.1 psid Step: ≤ 7.25 psid
11. Local Power Density - High <sup>(d)</sup>	1,2	SR 3.3.1.1 SR 3.3.1.3 SR 3.3.1.4 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.10 SR 3.3.1.11 SR 3.3.1.12 SR 3.3.1.13	≤ 21.0 kW/ft
12. Departure From Nucleate Boiling Ratio (DNBR) - Low <sup>(d)</sup>	1,2	SR 3.3.1.1 SR 3.3.1.2 SR 3.3.1.3 SR 3.3.1.4 SR 3.3.1.5 SR 3.3.1.7 SR 3.3.1.9 SR 3.3.1.10 SR 3.3.1.11 SR 3.3.1.12 SR 3.3.1.13	≥ 1.31

(d) Trip may be bypassed when logarithmic power is < 1E-4% RTP. Bypass shall be automatically removed when logarithmic power is ≥ 1E-4% RTP. During testing pursuant to LCD 3.1.12, trip may be bypassed below 5% RTP. Bypass shall be automatically removed when logarithmic power is ≥ 5% RTP.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 136 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, UNIT 3

DOCKET NO. 50-362

1.0 INTRODUCTION

By application dated September 22, 1998, Southern California Edison Company, et al. (SCE or the licensee) requested changes to the Technical Specifications (Appendix A to Facility Operating License Nos. NPF-10 and NPF-15) for San Onofre Nuclear Generating Station, Unit Nos. 2 and 3. The current technical specifications (TS) for the operating bypass removal bistable for Logarithmic Power Level - High, Reactor Coolant Flow - Low, Local Power Density - High, and Departure from Nucleate Boiling Ratio - Low currently use "THERMAL POWER" as the input process parameter. Thermal power is a term that includes decay heat, which is not a directly measurable parameter, thus is not a reasonable parameter for automatically establishing bistable conditions. The proposed changes would revise the input process parameter for these bistables from "THERMAL POWER" to "logarithmic power."

In their September 22, 1998, amendment request, SCE stated that the proposed changes were required to allow SONGS Unit 2 to restart from the current forced outage. The staff reviewed the circumstances applicable to the amendment request and determined that the circumstances met the requirements of 10 CFR 50.91 for review of the amendment request on an emergency basis. The Commission subsequently approved the proposed changes, and by letter dated September 25, 1998, issued License Amendment No. 142 to Facility Operating License No. NPF-10 for SONGS Unit 2. Since the emergency review provisions provided in 10 CFR 50.91 did not apply to SONGS Unit 3, the staff has reviewed the amendment request for SONGS Unit 3 in accordance with the normal process requirements provided in 10 CFR 50.91. This safety evaluation documents the staff's review of the proposed changes for SONGS Unit 3.

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## 2.0 BACKGROUND

TS Table 3.3.1-1, "Reactor Protective System Instrumentation," includes Notes "a" and "d" that identify operating bypass permissive and enable bistable values. Note "a" permits bypassing the Logarithmic Power Level - High (log power) trip when THERMAL POWER is  $> 1E-4\%$  rated thermal power (RTP). Note "a" also requires automatic enable (specified in the TS as "automatic removal" of the bypass) of the log power trip to occur when THERMAL POWER is  $\leq 1E-4\%$  RTP during a decrease in reactor power. Note "a" is applicable in Mode 2. Note "d" permits bypassing the Reactor Coolant Flow- Low, Local Power Density - High, and Departure From Nucleate Boiling Ratio - Low (RCS Flow/LPD/DNBR) trips when THERMAL POWER is  $< 1E-4\%$  RTP. Note "d" also requires automatic enable of the RCS Flow/LPD/DNBR trips to occur when THERMAL POWER is  $\geq 1E-4\%$  RTP during an increase in reactor power. Note "d" is applicable in Modes 1 and 2.

TS 1.1 defines THERMAL POWER as follows:

"THERMAL POWER shall be the total core heat transfer rate to the reactor coolant."

Thus, "THERMAL POWER" includes the decay heat produced in the core. This definition means that "THERMAL POWER" for SONGS Units 3 will not decay to less than or equal to  $1E-4\%$  RTP for many years after shutdown. In addition, "THERMAL POWER" is not a directly measurable parameter. Since "THERMAL POWER" will not decrease to less than or equal to  $1E-4\%$  RTP for normal duration plant outages, TS Table 3.3.1-1, note "d," would require the RCS Flow/LPD/DNBR trip bypasses to be removed during planned startups when SONGS Unit 3 enters Mode 2. These trip setpoints have a wide variability at this power level due to large uncertainties in the measured parameters. This condition is expected to produce a trip signal as soon as the trip bypasses are removed. Therefore strict adherence to the notes as currently written would preclude plant startups of SONGS Unit 3.

## 3.0 EVALUATION

The TS Table 3.3.1-1 notes "a" and "d" require automatic removal of the bypasses under specified conditions, which would require the use of a measurable parameter. Since the decay heat component of "THERMAL POWER" is not directly measurable, it is not suitable for use for an automatic action. The use of logarithmic nuclear instrumentation instead of "THERMAL POWER" as the process parameter would also make the TS consistent with the design bases for establishing and removing the bypasses. The SONGS Unit 3 TS 3.3.1 Bases, as well as the Bases for the Standard TS for Combustion Engineering designed plants (NUREG-1432) use logarithmic nuclear instrumentation to establish the  $1E-4\%$  RTP bypass/enable. Final Safety Analysis Report (FSAR) Section 7.2 describes the bypass setpoints in terms of power, without specifying the specific parameter used. This section does, however, describe setpoints in terms of measured parameters. In addition, FSAR Section 15.4.1.1.3.B.1 states that the bypass setting of  $1E-4\%$  power is established based on logarithmic power. Thus the intended, as well as the only physically possible means of generating a signal from a measured parameter to automatically remove the bypass, and the intended parameter used to determine

Since neutron flux is, by design, the correct input process variable for the operating bypass permissive and enable bistable values described in SONGS Unit 3 TS Table 3.3.1-1 notes "a" and "d," the change to replace "THERMAL POWER" with logarithmic power is acceptable.

#### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the staff consulted with California State official for comment on the proposed issuance of the amendment. The California State official had no comment on the proposed amendment.

#### 5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves 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 amendment involves no significant hazards consideration, and there has been no public comment on such finding (63 FR 56259). Accordingly, the amendment meets 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 amendment.

#### 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.

Principal Contributor: M. Gray

Date: November 23, 1998