

January 30, 2001

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: POST-ACCIDENT MONITORING
CALIBRATION SURVEILLANCE FREQUENCY EXTENSION (TAC NOS. MA9954
AND MA9955)

Dear Mr. Ray:

The Commission has issued the enclosed Amendment No. 176 to Facility Operating License No. NPF-10 and Amendment No. 167 to Facility Operating License No. NPF-15 for San Onofre Nuclear Generating Station, Units 2 and 3, respectively. The amendments are in response to your application dated September 6, 2000, (PCN-274, Supplement 1), and revise Technical Specification 3.3.11, "Post Accident Monitoring Instrumentation (PAMI)." The amendments extend the PAMI surveillance frequency from 18 to 24 months to accommodate a 24-month fuel cycle.

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,

/RA by J. Cushing for/

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. 176 to NPF-10
2. Amendment No. 167 to NPF-15
3. Safety Evaluation

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The Nuclear Regulator

License No. NPF-10
Amendment No. 176

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DOCKET NO. 50-361

THE CITY OF ANAHEIM, CALIFORNIA

THE CITY OF RIVERSIDE, CALIFORNIA

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Date of Issuance

Specifications

Attachment: C

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

/RA/

FOR THE NUCLEAR REGULATORY COMMISSION

implemented within 30
This license amendment

Specifications and the Environmental
Company shall operate the facility
No. 176, are hereby incorporated
Protection Plan contained in Attachment
The Technical Specifications

Technical Specifications

Operating License No.
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DOCKET NO. 50-361

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The Nuclear Regulator

License No. NPF-15
Amendment No. 167

AMENDMENT TO FACILITY OPER

SAN ONOFRE NUCLEAR GENI

DOCKET NO. 50-362

THE CITY OF ANAHEIM, CALIFORNIA

THE CITY OF RIVERSIDE, CALIFORNIA

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FOR THE NUCLEAR REGULATORY COMMISSION

Technical Support Document for the Final Rule on the Final

And, by the terms of the NRC's license agreement with the licensee, the licensee shall be

2.

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Attachment C has been added to the license on 12/11/2001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 176 TO FACILITY OPERATING LICENSE NO. NPF-10
AND AMENDMENT NO. 167 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 a letter dated September 6, 2000 (PCN-274, Supplement 1), Southern California Edison Company, the licensee for San Onofre Nuclear Generating Station (SONGS), Units 2 and 3, requested Nuclear Regulatory Commission (NRC's) approval to amend operating licenses NPF-10 and NPF-15 by revising the plant's Technical Specifications (TSs). The proposed amendments will revise Surveillance Requirement (SR) 3.3.11.4 to extend the TS-required surveillance interval of selected post-accident monitoring (PAM) system instrument channels from 18 to 24 months. The licensee revised the associated Bases to be consistent with the proposed changes. The proposed extension is required to accommodate the revised, 24-months fuel cycle at SONGS Units 2 and 3. The new calibration surveillance interval would still be eligible for the 25% extension allowed by SR 3.0.2 for a maximum interval of 30 months.

Reactor coolant system (RCS) temperature monitoring instruments have been excluded from the proposed change request because at present, there is inadequate information to support calibration-interval extension for these instruments. In its submittal, the licensee stated that the request to extend the calibration-interval of the RCS temperature instruments from 18 to 24 months will be submitted at a future date. The proposed change will not affect the calibration frequency of PAM instruments for the containment area radiation monitoring function because, in accordance with the current TS SR 3.3.11.5, these instruments are already on a 24-months calibration frequency. In the proposed revision, TS 3.3.11.5 will combine calibration requirements for the containment area radiation monitoring PAM instruments and all other PAM instruments whose calibration frequency is being changed from 18 to 24 months.

2.0 BACKGROUND

In its submittal the licensee stated that the proposed extension is applicable to the calibration interval only. The frequency of channel checks and channel functional tests for the PAM functions will remain unchanged.

The primary purpose of the PAM instruments is to display plant variables that provide information required by the control room operators during accident situations. The information allows the operator to take the manual actions for which no automatic control is provided and that are required for the safety systems to accomplish their safety functions during design-basis events. The operability of PAM instruments ensures that there is sufficient information available on selected plant parameters to monitor and assess plant status and behavior following an accident. The regulatory requirements for these instruments are provided in General Design Criteria (GDC)13, "Instrumentation and Control," GDC 19, "Control Room," and GDC 64, "Monitoring Radioactivity Releases," of 10 CFR Part 50, Appendix A. In addition, 10 CFR 50.34, "Accident Monitoring Instrumentation," contains provisions for measuring and recording certain functions and reading them out in the control room. Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Power Plants To Assess Plant and Environs Conditions During and Following An Accident," gives guidance for complying with the above requirements to provide instrumentation to monitor plant variables and systems during and following an accident in a nuclear power plant. Paragraph C12 of Regulatory Guide 1.97 states, in part, that servicing, testing, and calibration programs should be specified to maintain the capability of the accident monitoring instrumentation. The PAM instrumentation is important because its information guides the operator to respond correctly during post-accident mitigation and recovery efforts.

3.0 PROPOSED CHANGES AND EVALUATION

3.1 Proposed Change

SR 3.3.11.4 currently requires all PAM instrumentation functions 1-27 of TS Table 3.3.11-1, with the exception of function 9 (containment area high radiation monitor), to have a channel calibration performed every 18 months. SR 3.3.11.5 currently requires function 9 to have a channel calibration performed every 24 months.

The proposed change is to extend the surveillance interval so that the channel calibration for each PAM instrument function, except the instruments associated with the RCS temperature, is performed at a 24-month interval. The new calibration surveillance interval would still be eligible for the 25% surveillance interval extension allowed by SR 3.0.2, giving a maximum calibration interval of 30 months (24 months plus 25%).

The proposed SR 3.3.11.4 will still require functions associated with RCS temperature (functions 2, 3, 14, 15, 16, 17 and 20 of Table 3.3.11-1) to have a channel calibration performed every 18 months. The proposed SR 3.3.11.5 will require functions not associated with RCS temperature (functions 1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 18, 19, 21, 22, 23, 24, 25, 26 and 27 Table 3.3.11-1) to have a channel calibration performed every 24 months.

3.2 Evaluation

The information provided by PAM instrumentation may be qualitative, such as trending, or quantitative as applied to specific emergency operating instruction decision points. The licensee performed a usage-review of all PAM instruments to determine whether the nature of information provided by each instrument is qualitative or quantitative. This review was based on CE document NPSD-1009, Revision 1, "I&C Engineering Limits and Bases in EOPs, Including Evaluation of Instrument Uncertainties" (Attachment J to the September 6, 2000, application); and SONGS document 931008S6277, "Instrument Suitability Studies Emergency Operating Procedure, Phase II Report," dated May 1993 (Attachment K). Results of this review indicated that uncertainty analysis and drift study are not required for extending calibration-intervals of instruments employed for qualitative type functions (such as for trending, or for corroborating of other indications), and calibration interval of the qualitative type instruments can be extended based on engineering judgment of its past performance and vendor recommendations where applicable. (Past performance is determined by evaluating the as-left and as-found calibration data from past calibrations, which can be used to assess instrument-drift. In many cases, vendor drift data is also available. The vendor-data is compared with the historically collected data either to validate the vendor/historical data or to select the conservative value. In some cases, depending on the past performance of the instrument or validity of the vendor's data, adding a small margin established by engineering judgment over the assessed drift could yield the most conservative results.) Therefore, the licensee did not perform drift studies for extending the calibration interval for instruments used for the qualitative (corroborative or trending) functions, including excore neutron flux, reactor vessel water level, containment water level (wide range), containment isolation valve position, containment pressure (narrow range), pressurizer safety valve position, containment temperature, containment water level (narrow range), high pressure safety injection (HPSI) flow cold leg, HPSI flow hot leg, and refueling water storage tank level.

Because of the lesser safety significance of these PAM qualitative functions, and the licensee's determination of an appropriate calibration interval using engineering judgment based on an instrument's past performance or manufacturer's data, the staff finds that an instrument drift study program under the auspices of Generic Letter (GL) 91-04 ("Changes in Technical Specification Surveillance Intervals To Accommodate a 24-month Fuel Cycle") is not necessary. The staff finds the licensee's method for determining qualitative instrument drift acceptable and that the instruments will be capable of performing their intended function for the extended surveillance interval. Therefore, the staff finds the proposed change to extend the calibration interval for the above listed instruments functions employed for qualitative PAM function, from 18 months to 24 months, acceptable.

For all PAM instruments that provide quantitative information, except the RCS temperature function instruments and the containment hydrogen monitors, the licensee has conducted drift studies for a surveillance interval of 900 days (30 months). The licensee projected the drift values for 900 days using the methodology described in NUREG-1475, "Applying Statistics." RCS temperature monitoring instruments were excluded because adequate information to perform drift study was not available, and the containment hydrogen monitors were excluded because the hydrogen monitors are calibrated before use in the emergency operating procedures (EOPs).

Using results of the drift study, the licensee revised the setpoint calculations for the 30-month drift values. In its submittal, the licensee stated that its in-house setpoint methodology was based on the guidelines provided in Instrument Society of America Standard ISA-S67-04-1988, "Set Points for Nuclear Safety-Related Instrumentation Used in Nuclear Power Plants," and the uncertainty values were established with a 95% probability at a 95% confidence level. Instruments for the following quantitative PAM functions were included in the drift study and setpoint recalculations: RCS pressure (wide range), containment pressure (wide range), pressurizer level, steam generator water level (wide range), condensate storage tank level, auxiliary feedwater flow, and steamline pressure.

In its submittal, the licensee confirmed that the evaluations for extending the instrument calibration interval were performed in accordance with the criteria and guidance presented in GL 91-04. GL 91-04 lists seven issues that may be addressed to provide an acceptable basis for increasing the calibration interval for instruments performing safety functions. The staff noted that the licensee addressed all seven issues providing an acceptable basis for extending the calibration interval for the PAM instruments employed for the quantitative functions as listed above. The staff finds the proposed calibration interval extension for the above listed quantitative PAM instruments acceptable. In its submittal, the licensee indicated that the setpoint recalculations for the 30-month projected drift did not result in any changes in the existing setpoints, did not impact any assumptions of the plant safety analyses, and did not change any operating instructions.

4.0 SUMMARY

On the basis of its review, the staff concludes that the proposed TS changes to extend surveillance intervals for quantitative instruments are consistent with the guidance in GL 91-04, and that extending calibration interval of qualitative instruments of PAM functions on the basis of instrument's past performance and manufacturer's data is acceptable. The revised setpoint calculations were performed using the acceptable methodology. The licensee demonstrated that the effect of extending the surveillance interval to 24 months on plant safety is negligible and that the PAM instruments will continue to perform within their design limits during the longer surveillance interval. In addition, the requirements of the aforementioned GDC will continue to be met and the guidance of Regulatory Guide 1.97 will continue to be followed. The staff, therefore, finds the proposed TS revisions to extend the surveillance interval of PAM instruments included in the current submittal to 24 months, acceptable. The staff notes that the TS Bases have been changed to reflect the change to the TSs.

5.0 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.

6.0 ENVIRONMENTAL CONSIDERATION

The amendments change 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 (65 FR 62391). 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.

7.0 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.

Contributors: S. V. Athavale
J. Cushing

Date: January 30, 2001