

July 11, 2000

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 - RELIEF  
REQUEST FROM USE OF MECHANICAL NOZZLE ASSEMBLIES AS AN  
ALTERNATE TO THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS  
(ASME) CODE REPAIRS (TAC NOS. MA6901 AND MA6902)

Dear Mr. Ray:

By letter dated September 29, 1999, you submitted to the U.S. Nuclear Regulatory Commission's (NRC's) staff, a request for relief from the ASME Code Section III requirements for Class 1 components to permit an extension of the interim use of installed mechanical nozzle seal assemblies (MNSAs) at the San Onofre Nuclear Generating Station, Units 2 and 3, as an alternative to a Section XI repair of welded reactor coolant system instrumentation nozzles, for the period of operation beginning with the Cycle 11 refueling outages and ending with the Cycle 12 refueling outages. The MNSAs were previously approved for interim installation by NRC letters dated February 17, 1998, and January 29, 1999.

Pursuant to 10 CFR 50.55a(a)(3)(i), the NRC staff finds the proposed use of the installed MNSAs for the interim period of operation beginning with the Cycle 11 refueling outages and ending with the Cycle 12 refueling outages, as alternatives to Section XI Code repairs, acceptable. The NRC staff has determined that the proposed alternatives provide an acceptable level of quality and safety and are therefore authorized pursuant to 10 CFR 50.55a(a)(3)(i).

Our safety evaluation for the relief request is enclosed.

Sincerely,

*/RA/*

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

Docket Nos. 50-361 and 50-362

Enclosure: Safety Evaluation

cc w/encl: See next page

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San Onofre Nuclear Generating Station, Units 2 and 3

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO RELIEF FROM CERTAIN INSERVICE INSPECTION REQUIREMENTS  
TO FACILITY OPERATING LICENSE NOS. NPF-10 AND 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

1.1 Background

By letter dated November 18, 1998, (Ref. 1), Southern California Edison (SCE) requested interim relief from the American Society of Mechanical Engineers (ASME) Code Section III requirements for Class 1 components in 10 CFR 50.55a(c)(1), to permit the use of mechanical nozzle seal assemblies (MNSAs) as an alternative repair method of cracked reactor coolant system (RCS) instrumentation nozzles. This request was made in accordance with the provisions of 10 CFR 50.55a(a)(3) and 10 CFR 50.55a(g)(5)(iii). SCE requested the interim relief through Refueling Outage (RFO) 11 for Units 2 and 3, scheduled for 2000 and 2001, respectively.

In Reference 1, SCE indicated that cycle-by-cycle interim approval would be requested, contingent upon acceptable results of visual inspections, for continued use of the MNSAs. SCE also indicated that it anticipated removing and inspecting all installed MNSAs during the Cycle 12 RFOs to support a subsequent request for long-term use of the MNSAs. By NRC letter dated January 29, 1999 (Ref. 2), the staff accepted and approved the installation of the MNSAs as temporary repairs of the RCS instrument nozzles, on the basis of the commitments stated in Reference 1. The staff also accepted SCE's proposal subject to the visual inspection program that was performed on the MNSAs during the Cycle 10 RFOs. This program was described in an SCE letter dated April 30, 1998 (Ref. 3).

## 1.2 SCE Request

By letter dated September 29, 1999, (Ref. 4) SCE submitted a request to permit an extension of the interim use of installed MNSAs at the San Onofre Nuclear Generating Station (SONGS), Units 2 and 3, for the period of operation beginning with the Cycle 11 refueling outages and ending with the Cycle 12 refueling outages.

## 2.0 EVALUATION

By letters dated May 24, 1999 (Ref. 5), and August 5, 1999 (Ref. 6), SCE reported the results of the visual inspections during the Cycle 10 RFO. SCE stated in these submittals that an examination of all MNSAs in SONGS Units 2 and 3 had been performed, and that the results of the inspection were satisfactory. However, feeler gauge measurements at two locations in one MNSA located on the hot leg in SONGS Unit 2 were found to exceed prescribed tolerances. SCE performed an engineering evaluation and concluded that the found condition was operable, and that the MNSA could perform its original design safety function. However, SCE did not provide detailed information regarding this evaluation. Nevertheless, SCE replaced the MNSA with an Alloy 690-welded nozzle, in accordance with a commitment made in the April 30, 1998, letter (Ref. 3), to replace the two MNSAs on the hot-leg with welded Alloy 690 nozzles. SCE also did not provide any other information regarding the examination of the MNSAs.

In the letter of April 30, 1998, SCE also stated that the visual inspections include feeler gauge measurements of the top plate gap. This determines if the fasteners have moved, if relative movement has occurred between the MNSA and the nozzle, or if the nozzle has separated from the pipe. Based on the information presented, the staff concluded that there was a possibility of the MNSA having separated from the pipe. To address this concern, the staff held a telephone call with SCE on April 14, 2000, to discuss the engineering evaluation of the hot leg MNSAs visual inspection results. SCE stated that the evaluation consisted in a heuristic justification for the readings on the out-of-tolerance hot-leg MNSA. Based on the smallness of the out-of-tolerance measurements, and the fact that the fasteners were found not to have moved, SCE asserted that these feeler gauge measurements were most likely the as-installed dimensions, and that the MNSA had not moved relative to the pipe. The staff accepts this assertion and finds the SCE justification plausible. SCE also indicated that the MNSA had been replaced in accordance with a commitment made in the letter of April 30, 1998, of replacing the two hot leg MNSAs.

SCE intends to remove all MNSAs and replace them with similar MNSAs during the Cycle 12 refueling outages. The removed MNSAs will be examined for any evidence of corrosion. SCE intends to use the information gathered from this examination to support a request for permanent installation of the MNSAs on the pressurizer and the steam generator channel head instrument nozzles. The staff will consider this request at the time it is submitted for staff approval.

## 3.0 CONCLUSION

Based on the licensee's visual inspection results, the staff finds the licensee's request to use the currently installed MNSAs on the steam generator and the pressurizer of Unit 2, and the MNSAs on the pressurizer in Unit 3, acceptable for the period of operation beginning with the

Cycle 11 and ending with the Cycle 12 RFOs, subject to: 1) SCE commitments made in their relief request dated September 29, 1999 (Ref. 4), and 2) visual inspection provisions accepted by the staff in the NRC letter of January 29, 1999 (i.e. American Society of Mechanical Engineers (ASME) VT-1 and VT-2 examinations, boric acid inspections and nozzle inspections, feeler gauge measurement of the top plate gap, and inspection of the condition of the locking tab washers and associated fasteners.) The use of MNSAs (for Cycle 11 and ending with the Cycle 12 RFOs) will provide an acceptable level of quality and safety in that they will ensure pressure boundary integrity as installed and is therefore authorized pursuant to 10 CFR 50.55a(a)(3)(i).

Because the reported visual inspection results identified two indications on one of the two Unit 2 hot-leg MNSAs (which was replaced with an Alloy 690 nozzle), the staff recommends that SCE replace the other MNSA on the hot-leg of Unit 2 with an Alloy 690 nozzle, in accordance with a commitment stated in the SCE letter of April 30, 1998, and the staff conclusion stated in the NRC letter of January 29, 1999.

#### 4.0 REFERENCES

1. Letter of November 18, 1998, from A. E. Scherer, SCE, to the NRC Document Control Desk.
2. Letter of January 29, 1999, from W. H. Bateman, NRC, to H. B. Ray, SCE.
3. Letter of April 30, 1998, from J. L. Rainsberry, SCE, to the NRC Document Control Desk.
4. Letter of September 29, 1999, from A. E. Scherer, SCE, to the NRC Document Control Desk.
5. Letter of May 24, 1999, from A. E. Scherer, SCE, to the NRC Document Control Desk, with Owners Report of Service Inspection for SONGS Unit 2.
6. Letter of August 5, 1999, from A. E. Scherer, SCE, to the NRC Document Control Desk, with Owners Report of Service Inspection for SONGS Unit 3.

Principal Contributor: M. Hartzman

Date: July 11, 2000