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A Edward Scherer
Manager of Nuclear
Oversight and Regulatory Affairs

November 27, 2001

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Subject: **Docket Nos. 50-361 and 50-362**
Mechanical Nozzle Seal Assembly Code Replacement
Request for Relief from 10 CFR 50.55a
San Onofre Nuclear Generating Station, Units 2 and 3

References: See Enclosure 1

Gentlemen:

By this letter, in accordance with 10 CFR 50.55a(g)(5)(iii), Southern California Edison (SCE) submits the enclosed request for relief from ASME Code, Section III requirements in 10 CFR 50.55(a)(3) to use the Mechanical Nozzle Seal Assembly (MNSA) as an Alternate ASME Code Replacement at the San Onofre Nuclear Generating Station Units 2 and 3 for the period of operation beginning with the Cycle 12 refueling outages and ending with the Cycle 13 refueling outages.

BACKGROUND

San Onofre Nuclear Generating Station (SONGS) Units 2 and 3 began their second ten-year interval on April 1, 1994, under the 1989 Edition of the ASME Code, Section XI, with no Addenda. By letters dated January 29, 1999, and July 11, 2000, References 1 and 2, the NRC granted interim approval for use of the MNSAs at SONGS for the periods of operation ending with the Cycle 11 refueling outages and the Cycle 12 refueling outages, respectively.

During the Cycle 10 refueling outages SCE removed all MNSAs that were installed on the hot legs and replaced them with Alloy 690 nozzles, as committed to the NRC. SCE inspected the removed MNSAs as well as the MNSAs remaining on the pressurizer instrument nozzles and steam generator channel head instrument nozzles. The results of the inspections were satisfactory, and a summary of the visual examination results

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was included in References 3 and 4, when SCE submitted the required post outage NIS-1 forms. Similarly, during the Cycle 11 refueling outages SCE inspected the MNSAs which were installed on the pressurizer instrument nozzles and steam generator channel head instrument nozzles. The results of the inspections for both Units 2 and 3 were satisfactory, and a summary of the Unit 2 visual examination results was included in References 5 and 6, when SCE submitted the required post outage NIS-1 forms.

The satisfactory inspection results of these inspections and the planned replacement in kind of all currently installed MNSAs during the Cycle 12 refueling outages support the continued use of MNSAs at SONGS during Cycle 12 operation. Your approval by March 31, 2002, is requested to support Cycle 12 operation.

If you have any questions or would like additional information regarding this issue, please contact me or Mr. Jack L. Rainsberry at (949) 368-7420.

Sincerely,

Enclosures

cc: E. W. Merschoff, Regional Administrator, NRC Region IV
J. N. Donohew, NRC Project Manager, San Onofre Units 2, and 3
C. C. Osterholtz, NRC Senior Resident Inspector, San Onofre Units 2 & 3

Enclosure 1
REFERENCES

REFERENCES:

1) Letter from William H. Bateman (U.S. NRC) to Harold B. Ray (SCE), dated January 29, 1999; Subject: Use of Mechanical Nozzle Seal Assemblies for the San Onofre Nuclear Generating Station, Units 2 and 3 (TAC Nos. MA1776 and MA1777)

2) Letter from Stephen Dembek (U.S. NRC) to Harold B. Ray (SCE), dated July 11, 2000; Subject: San Onofre Nuclear Generating Station, Units 2 and 3 - Relief Request from [sic] Use of Mechanical Nozzle Seal Assemblies as an Alternate to the American Society of Mechanical Engineers (ASME) Code Repairs (TAC Nos. MA6901 and MA6902)

3) Letter from A. E. Scherer (SCE) to the Document Control Desk (NRC), dated May 24, 1999; Subject: Docket No. 50-361 Owners Report of In-service Inspection, Form NIS-1, San Onofre Nuclear Generating Station Unit-2

4) Letter from A. E. Scherer (SCE) to the Document Control Desk (NRC), dated August 5,1999; Subject: Docket No. 50-362, Owners Report of In-service Inspection, Form NIS-1, San Onofre Nuclear Generating Station Unit-3

5) Letter from A. E. Scherer (SCE) to the Document Control Desk (NRC), dated February 2, 2001; Subject: Docket No. 50-361, Owners Report of In-service Inspection, Form NIS-1, San Onofre Nuclear Generating Station Unit-2

6) Letter from A. E. Scherer (SCE) to the Document Control Desk (NRC), dated April 16, 2001; Subject: Docket No. 50-362, Owners Report of In-service Inspection, Form NIS-1, San Onofre Nuclear Generating Station Unit-3

Enclosure 2
RELIEF REQUEST
MNSA-CYCLE 12

RELIEF REQUEST
MNSA-CYCLE 12
San Onofre Nuclear Generating Station
Unit 2 (Docket 50-361) and Unit 3 (Docket 50-362)

SYSTEM:	Reactor Coolant System (RCS)
COMPONENT/AREA:	Instrument Nozzles: Piping, Pressurizer, Steam Generator
CODE CLASS:	1
CODE APPLICABILITY:	ASME Code Section XI, IWA-7000 Replacement, 1989 Edition with no Addenda
DESCRIPTION	Use of the Mechanical Nozzle Seal Assembly (MNSA) Alternate Method for Replacing Reactor Coolant System Instrument Nozzles
CODE REQUIREMENTS	Per Section XI, IWA 7200, any items used for replacement shall meet the original Construction Code requirements. Use of a later edition of the Construction Code is allowed provided that a Code date reconciliation is performed to show that the replacement item meets the design requirements. Components which are part of the reactor coolant pressure boundary must meet the requirements for Class 1 components in Section III of the ASME Boiler and Pressure Vessel Code as stated in 10 CFR 50.55a(c)(1).
REQUESTED RELIEF	Stress Corrosion Cracking has been experienced in the Inconel 600 nozzles at many nuclear plants. The typical repair of these nozzles involves external weld repairs or half nozzle replacements. The MNSA would be used as an alternative replacement to repair leaks or where there may be susceptibility to leaking in RCS nozzles and piping.

BASIS FOR RELIEF

The Mechanical Nozzle Seal Assembly (MNSA) provides the leakage sealing function plus structural integrity of a nozzle attachment weld in locations (e.g., bottom of the pressurizer) where the typical repair and replacement techniques may be difficult or impractical. Installation of the MNSA will also avoid the need for higher risk plant operations (i.e., reduced inventory or core offloads for repair or replacement of RCS

nozzles). In addition, the MNSA will shorten the repair or replacement time significantly and thereby reduce radiation exposure to workers.

A radiation exposure savings from use of the MNSA instead of the present nozzle repair/replacement method is expected to be approximately 1 person-rem per steam generator nozzle and approximately 1.5 to 2 person-rem per nozzle on the pressurizer. Additionally, the removal of the currently installed MNSAs and subsequent nozzle repair would result in approximately 2 person-rem per nozzle.

Background:

By letters dated January 29, 1999, and July 11, 2000, References A and B, the NRC approved interim use of the MNSAs for two separate periods of time. These approvals were based on several Southern California Edison (SCE) submittals, References C, D, E, F, G, and H.

Discussion:

The design information provided by SCE in References C, D, E, F, G, and H is still applicable and supports the use of the MNSAs at SONGS for the period of operation beginning with the Cycle 12 refueling outage through the Cycle 13 refueling outage, which is Cycle 12.

This use of the MNSAs is further supported by the inspection results of the MNSAs. Satisfactory results were obtained from inspections conducted during the Cycle 10 and Cycle 11 refueling outages. Summaries of the visual examination results were included in references I, J, K and L.

During the Cycle 12 refueling outages, following the performance and documentation of the visual inspections specified in Reference G, SCE will be removing all currently installed MNSAs and replacing them in kind. The removed MNSAs will be examined for any evidence of corrosion. The information gathered by this examination will be used to support continued use of the MNSAs during Cycle 13 and beyond. Additionally, the data gathered will be used to support the request for permanent use of the MNSAs on the Pressurizer instrument nozzles and the Steam Generator channel head instrument nozzles.

In summary, the design of the MNSAs, the satisfactory inspection results, and the complete replacement of the currently installed MNSAs support the continued use of the MNSAs at SONGS.

References:

A) Letter from William H. Bateman (U.S. NRC) to Harold B. Ray (SCE), dated January 29, 1999; Subject: Use of Mechanical Nozzle Seal Assemblies for the San Onofre Nuclear Generating Station, Units 2 and 3 (TAC Nos. MA1776 and MA1777)

B) Letter from Stephen Dembek (U.S. NRC) to Harold B. Ray (SCE), dated July 11, 2000; Subject: San Onofre Nuclear Generating Station, Units 2 and 3 - Relief Request from [sic] Use of Mechanical Nozzle Seal Assemblies as an Alternate to the American Society of Mechanical Engineers (ASME) Code Repairs (TAC Nos. MA6901 and MA6902)

C) Letter from J. L. Rainsberry (SCE) to Document Control Desk (U.S. NRC), dated July 11, 1997; Subject: Docket Nos. 50-361 and 50-362, Mechanical Nozzle Seal Assembly Code Replacement, Request for Relief from 10 CFR 50.55a, San Onofre Nuclear Generating Station, Units 2 and 3

D) Letter from J. L. Rainsberry (SCE) to Document Control Desk (U.S. NRC), dated December 12, 1997; Subject: Docket Nos. 50-361 and 50-362, Mechanical Nozzle Seal Assembly Code Replacement, Request for Relief from 10 CFR 50.55a, San Onofre Nuclear Generating Station, Units 2 and 3

E) Letter from J. L. Rainsberry (SCE) to Document Control Desk (U.S. NRC), dated January 5, 1998; Subject: Docket Nos. 50-361 and 50-362, Mechanical Nozzle Seal Assembly, Code Replacement, Request for Relief from 10 CFR 50.55a, San Onofre Nuclear Generating Station, Units 2 and 3 (TAC Nos. M99558 and M99599)

F) Letter from J. L. Rainsberry (SCE) to Document Control Desk (U.S. NRC), dated January 29, 1998; Subject: Docket Nos. 50-361 and 50-362, Mechanical Nozzle Seal Assembly Code Replacement, Request for Relief from 10 CFR 50.55a, San Onofre Nuclear Generating Station, Units 2 and 3 (TAC Nos. M99558 and M99599)

G) Letter from J. L. Rainsberry (SCE) to Document Control Desk (U.S. NRC), dated April 30, 1998; Subject: Docket Nos. 50-361 and 50-362, Use of the Mechanical Nozzle Seal Assembly, San Onofre Nuclear Generating Station, Units 2 and 3 (TAC Nos. M99558 and M99599)

H) Letter from J. L. Rainsberry (SCE) to Document Control Desk (U.S. NRC), dated November 18, 1998; Subject: Docket Nos. 50-361 and 50-362, Use of the Mechanical Nozzle Seal Assembly, San Onofre Nuclear Generating Station, Units 2 and 3 (TAC Nos. M99558 and M99599)

I) Letter from A. E. Scherer (SCE) to the Document Control Desk (NRC), dated May 24, 1999; Subject: Docket No. 50-361 Owners Report of In-service Inspection, Form NIS-1, San Onofre Nuclear Generating Station Unit-2

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K) Letter from A. E. Scherer (SCE) to the Document Control Desk (NRC), dated February 2, 2001; Subject: Docket No. 50-361, Owners Report of In-service Inspection, Form NIS-1, San Onofre Nuclear Generating Station Unit-2

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