Mr. Harold B. Ray October 31, 2005
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 - RELATED TO THE RELIEF REQUEST ISI-3-14 TO USE SUBSEQUENT EDITION AND ADDENDA OF THE CODE, SECTION XI, FOR PRESSURE TESTING REQUIREMENTS (TAC NOS. MC5791 AND MC5792)

Dear Mr. Ray:

By letter dated January 28, 2005, Southern California Edison (SCE) submitted relief request ISI-3-14. The relief request proposed the use of the 1998 Edition through the 2000 Addenda of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, Article IWA-4540, for the pressure testing requirements for Class 1, 2, and 3 items following repair/replacement activities performed by welding or brazing on a pressure-retaining boundary for San Onofre Nuclear Generating Station, Units 2 and 3. SCE provided additional information to support its relief request in its letter dated September 2, 2005.

Based on the attached safety evaluation, the Nuclear Regulatory Commission staff concluded that SCE's request to use the later edition and addenda of the ASME Code, Section XI, for these requirements is authorized pursuant to Paragraph 50.55a(g)(4)(iv) of Title 10 of the *Code of Federal Regulations* (10 CFR) for SONGS, Units 2 and 3, for the third 10-year inservice inspection interval.

Sincerely,

/RA/
Daniel S. Collins, Acting Chief, Section 2
Project Directorate IV
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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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO RELIEF REQUEST TO USE SUBSEQUENT EDITION AND ADDENDA

OF ASME CODE, SECTION XI, FOR PRESSURE TESTING REQUIREMENTS

FOR REPAIRS/REPLACEMENTS PERFORMED BY WELDING OR BRAZING

SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 AND 3

SOUTHERN CALIFORNIA EDISON

DOCKET NOS. 50-361 AND 50-362

1.0 INTRODUCTION

By letter dated January 28, 2005, Southern California Edison (the licensee) submitted relief request ISI-3-14. The relief request proposed the use of the 1998 Edition through the 2000 Addenda of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, Article IWA-4540, for the pressure testing requirements for Class 1, 2, and 3 items following repair/replacement activities performed by welding or brazing on a pressure-retaining boundary for San Onofre Nuclear Generating Station (SONGS), Units 2 and 3. The licensee provided additional information to support its relief request in its letter dated September 2, 2005.

2.0 REGULATORY REQUIREMENTS

Section 50.55a of Title 10 of the *Code of Federal Regulations* (10 CFR 50.55a) requires that inservice inspection (ISI) of ASME Code Class 1, 2, and 3 components be performed in accordance with the applicable Edition and Addenda of the ASME Code, Section XI, incorporated within a facility's licensing basis, except where specific relief has been granted by the Nuclear Regulatory Commission (NRC) pursuant to 10 CFR 50.55a(g)(6)(i). The regulation in 10 CFR 50.55a(g)(4)(iv) allows the use of portions of subsequent Editions and Addenda of the ASME Code, Section XI, which have been incorporated by reference in paragraph 10 CFR 50.55a(b)(2) of that section for inservice examination of components and system pressure tests, subject to the approval by NRC.

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components (including supports) shall meet the requirements, except the design and access provisions and the preservice examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," to the extent practical within the limitations of design, geometry, and materials of construction of the components.

The regulations require that ISI of components and system pressure tests conducted during the first 10-year interval and subsequent intervals comply with the requirements in the latest edition and addenda of the ASME Code, Section XI, incorporated by reference in 10 CFR 50.55a(b) 12 months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. The applicable Code of record for the SONGS, Units 2 and 3, ISI and pressure testing programs is the 1995 Edition through the 1996 Addenda of the ASME Code, Section XI. SONGS, Units 2 and 3, are currently in the third 10-year ISI interval, which concludes on August 17, 2013.

3.0 TECHNICAL EVALUATION

The licensee requested to use the pressure testing requirements for repair/replacement activities performed by welding or brazing on a pressure retaining boundary specified in the 1998 Edition through the 2000 Addenda of the ASME Code, Section XI, Article IWA-4540, “Pressure Testing of Class 1, 2, and 3 Items,” for SONGS, Units 2 and 3. Additionally, the licensee requested to use Articles IWA-5000 and IWB-5000, IWC-5000, or IWD-5000, as applicable, from the 1998 Edition through the 2000 Addenda of the ASME Code, Section XI, for conducting system pressure tests following repair/replacement activities performed by welding or brazing on a pressure retaining boundary. The requirements specified in the 1998 Edition through the 2000 Addenda of the ASME Code, Section XI, IWA-4540, IWA-5000, IWB-5000, IWC-5000, and IWD-5000 are incorporated by reference into 10 CFR 50.55a(b)(2), subject to one limitation regarding IWA-5000 specified by 10 CFR 50.55a(b)(2)(xx). It is stated in Paragraph 50.55a(b)(2) that references to Section XI of the ASME Code "include ... the 1997 Edition (Division 1) through the 2003 Addenda (Division 1)." The licensee's use of the 1998 Edition through the 2000 Addenda falls within this range of editions of the ASME Code.

The 2000 Addenda of the ASME Code, Section XI, Article IWA-4540, provides additional flexibility with respect to pressure testing requirements, while ensuring that the appropriate testing is conducted to verify the integrity of the welded or brazed joint. In general, Article IWA-4540 requires pressure testing for all Class 1, 2, and 3 items following repair/replacement activities performed by welding or brazing on a pressure-retaining boundary. The 2000 Addenda of Article IWA-4540 requires that licensees conduct either (1) a system hydrostatic test in accordance with Article IWA-5000, or (2) all of the following: a system leakage test in accordance with Article IWA-5000, compliance with the owner’s requirements, and compliance with the nondestructive examination (NDE) methodologies and acceptance criteria of the 1992 Edition or later of the ASME Code, Section III, prior to returning the item to service. In its letter dated January 28, 2005, the licensee stated that it will implement the NDE methodologies and acceptance criteria from the 1995 Edition through the 1996 Addenda of the ASME Code, Section III, in connection with its implementation of the 2000 Addenda of the ASME Code, Section XI, Article IWA-4540.

The 1995 Edition through the 1996 Addenda of the ASME Code, Section XI, Article IWA-4540, did not contain requirements for NDE methodologies and acceptance criteria accompanying pressure testing. Furthermore, this earlier Edition and Addenda of the ASME Code, Section XI, Article IWA-4540, did not explicitly authorize system pressure tests below hydrostatic pressure levels. Therefore, the revisions to Article IWA-4540 in the 1998 Edition through the 2000 Addenda provide additional flexibility with respect to the implementation of the requirements, while ensuring that safety is maintained. Implementation of the 1998 Edition through the 2000 Addenda of the ASME Code, Section XI, Article IWA-4540, will provide assurance that the

necessary actions are taken toward determining whether repairs and replacements that involve welding or brazing meet the appropriate acceptance criteria, without placing an undue burden on the licensee.

The licensee indicated that it will continue to perform pressure testing of mechanical joints that are made during the installation of pressure retaining items in accordance with the requirements of the 1995 Edition through the 1996 Addenda of the ASME Code, Section XI, Subparagraph IWA-4540(c). This subparagraph was removed from the 2000 Addenda of the ASME Code, Section XI, Article IWA-4540.

The licensee has also requested to use the related requirements of Articles IWA-5000 and IWB-5000, IWC-5000, or IWD-5000, as applicable, from the 1998 Edition through the 2000 Addenda of the ASME Code, Section XI for conducting system pressure tests following repair/replacement activities performed by welding or brazing on a pressure retaining boundary. The 1998 Edition through the 2000 Addenda of the ASME Code, Section XI, Article IWA-4540, subparagraph (a) specifies that the applicable hydrostatic or leakage testing requirements shall be carried out in accordance with Article IWA-5000 of the ASME Code, Section XI. Articles IWB-5000, IWC-5000, and IWD-5000 are, in turn, referenced by Article IWA-5000 and specify system pressure test requirements for each ASME Code Class. Articles IWB-5000, IWC-5000, and IWD-5000 respectively apply to ASME Code Class 1, 2, and 3 components.

In its letter dated September 2, 2005, the licensee indicated that it will abide by the requirements of 10 CFR 50.55a(b)(2)(xx), which provides a modification to the requirements of the 1997 through 2002 Addenda of the ASME Code, Section XI, Article IWA-5000, regarding test pressure holding times during the performance of system leakage tests.

Based on the above, the NRC staff concludes that the licensee's request to use the requirements specified in the 1998 Edition through the 2000 Addenda of the ASME Code, Section XI, Article IWA-4540, and related requirements, for SONGS, Units 2 and 3, provides an acceptable level of quality and safety.

4.0 CONCLUSIONS

The 1998 Edition through the 2000 Addenda of the ASME Code, Section XI requirements, as described in the licensee’s submittal, have been incorporated by reference into 10 CFR 50.55a(b)(2). Therefore, the NRC staff finds that the licensee's request to implement the pressure testing requirements for repair/replacement activities performed by welding or brazing on a pressure-retaining boundary specified in the 1998 Edition through the 2000 Addenda of the ASME Code, Section XI, Article IWA-4540, and the related requirements of IWA-5000 and IWB-5000, IWC-5000, or IWD-5000, as applicable, is authorized pursuant to 10 CFR 50.55a(g)(4)(iv) for SONGS, Units 2 and 3, for the third 10-year ISI interval.

All other requirements of the ASME Code, Section XI, for which relief has not been specifically requested and approved, remain applicable, including third party review by the Authorized Nuclear Inservice Inspector.

Principal Contributor: Christopher Sydnor

Date: October 31, 2005

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