January 18, 2006

Mr. Richard M. Rosenblum
Chief Nuclear Officer
Southern California Edison Company
San Onofre Nuclear Generating Station
P.O. Box 128
San Clemente, CA 92674-0128

SUBJECT: SAN ONOFRE NUCLEAR GENERATING STATION (SONGS), UNIT 3 - EVALUATION OF THE RESPONSE TO GENERIC LETTER 2004-01, "REQUIREMENTS FOR STEAM GENERATOR TUBE INSPECTIONS" (TAC NO. MC4850)

Dear Mr. Rosenblum:

On August 30, 2004, the U.S. Nuclear Regulatory Commission (NRC) issued Generic Letter (GL) 2004-01, "Requirements for Steam Generator Tube Inspections." The purpose of GL 2004-01 was to obtain information that would enable the NRC staff to determine whether licensees' steam generator tube inspection programs comply with the existing tube inspection requirements (the plant technical specifications in conjunction with Appendix B to Part 50 of Title 10 of the *Code of Federal Regulations*).

By letter dated October 26, 2004 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML043020250), as supplemented by letter dated November 23, 2005 (ADAMS Accession No. ML053320210), Southern California Edison (SCE), the licensee for SONGS, submitted the response to GL 2004-01.

The NRC Staff has reviewed the SCE response to GL 2004-01 for SONGS, Unit 3. As discussed in the enclosed evaluation, the NRC staff concluded that the licensee's overall response to the GL is acceptable.

If you have any questions, please call the Project Manager, N. Kalyanam, at (301) 415-1480.

Sincerely,

/RA/
David Terao, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-362

Enclosure: Staff Evaluation

cc w/encl: See next page

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EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RESPONSE TO NRC GENERIC LETTER 2004-01

SOUTHERN CALIFORNIA EDISON

SAN ONOFRE NUCLEAR GENERATING STATION, UNIT NO. 3

DOCKET NO. 50-362

On August 30, 2004, the Nuclear Regulatory Commission (NRC) issued Generic Letter (GL) 2004-01, "Requirements for Steam Generator Tube Inspections." The purpose of GL 2004-01 was to obtain information that would enable the NRC staff to determine whether licensees' steam generator (SG) tube inspection programs comply with the existing tube inspection requirements the plant Technical Specifications (TSs) in conjunction with Appendix B of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50.

Licensees who concluded that their SG tube inspections have not been or are not being performed consistent with the NRC's position on the requirements in the TSs, in conjunction with Appendix B of 10 CFR Part 50, were requested to submit a safety assessment. As part of the safety assessment, licensees were to address whether their safety bases for limiting inspections within the tubesheet constitutes a change to the "method of evaluation" for establishing the structural and leakage integrity of the tube-to-tubesheet joint. The NRC staff requested this information since it was expected that licensees' safety bases relied on a mechanical expansion joint rather than the tube-to-tubesheet weld. Since the original tube-to-tubesheet joint was most likely designed by demonstrating that the stresses in the tube, weld, and tubesheet satisfy the allowable stress values in Section III of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), or other similar standard, the NRC staff questioned whether the safety basis for limiting inspections relied on demonstrating that the expansion joint satisfied some criteria (e.g., minimum tube pullout load criteria, allowable leakage) beyond those specified in Section III of the ASME Code.

By letter dated October 26, 2004 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML043020250), as supplemented by letter dated November 23, 2005 (ADAMS Accession No. ML053320210), Southern California Edison, the licensee for San Onofre Nuclear Generating Station (SONGS), Unit 3, submitted a response to GL 2004-01. In the response, you concluded that the safety basis used to support the tube inspection practices does not constitute a change to the method of evaluation. This conclusion appears to be based, in part, on an assumption that the GL was implying that the selection of non-destructive evaluation techniques define the limits of the reactor coolant pressure boundary. The GL's discussion of the original design basis, however, was related to the "safety analysis" performed by certain licensees to support a conclusion that flaws located a certain distance below the top of the tubesheet do not have any safety implications. This safety basis relies on a mechanical interference fit between the tube and the tubesheet for establishing the

tube-to-tubesheet joint (i.e., forming the reactor coolant pressure boundary). However, for many plants (if not all), the original design of the steam generator gave no credit for this interference fit since the weld between the tube and the tubesheet ensured the integrity of the tube-to-tubesheet joint. In fact, the design rules (ASME Code, Section III) do not address the use of an interference fit for maintaining pressure boundary integrity. As a result, the NRC staff questioned whether licensees were using a different method of evaluation for assessing the adequacy of the tube-to-tubesheet joint.

Although your response to the "method of evaluation" item did not focus on the NRC staff's area of concern, we conclude that your overall response to the GL is acceptable. You indicated that your tube inspection practices at SONGS, Unit 3, are not consistent with the NRC staff position, and that this has been entered into your corrective action program. You further indicated that you plan on submitting a license amendment to clarify your steam generator tube inspection practices in the tubesheet region. This license amendment request was submitted on November 3, 2005, and is currently being reviewed by the NRC staff. In the event that a different method of evaluation for the tube-to-tubesheet joint is in use at SONGS, Unit 3, it will be reviewed as part of the license amendment process.

Principal Reviewers: P. Klein
M. Yoder

Date: January 18, 2006

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Units 2 and 3

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