

June 21, 2006

Mr. Richard M. Rosenblum
Senior Vice President and 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, UNITS 2 AND 3 -
REQUEST FOR ADDITIONAL INFORMATION ON THE PROPOSED C*
AMENDMENT FOR STEAM GENERATOR TUBE INSPECTION AND REPAIR
IN THE TUBESHEET (TAC NOS. MC8850 AND MC8851)

Dear Mr. Rosenblum:

By letter dated November 3, 2005, as supplemented by letter dated May 1, 2006, Southern California Edison submitted an application to change the San Onofre Nuclear Generating Station, Units 2 and 3, technical specifications related to steam generator tube inspection. The changes would define the depth of the required tube inspections and plugging criteria within the tubesheet.

After reviewing your request, the Nuclear Regulatory Commission staff has determined that additional followup information is required to complete the review. We discussed this information with your staff by telephone and they agreed to provide the additional information requested in the enclosure by August 15, 2006.

If you have any questions, please contact me at (301) 415-1480.

Sincerely,

/RA/

N. Kalyanam, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-361 and 50-362

Enclosure: Request for Additional Information

cc w/encl: See next page

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ACCESSION NO: **ML061740037**

* No major change from Staff provided
RAI

OFFICE	NRR/LPL4/PM	NRR/LPL4/LA	NRR/DE/EEEE*	NRR/LPL4/BC
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REQUEST FOR ADDITIONAL INFORMATION (RAI)
LICENSE AMENDMENT REQUEST FOR PROPOSED TECHNICAL SPECIFICATION
CHANGE REGARDING REPAIR CRITERIA AND INSPECTION DEPTH FOR
STEAM GENERATOR TUBES WITHIN THE TUBESHEET REGION
SOUTHERN CALIFORNIA EDISON
SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 AND 3
DOCKET NOS. 50-361 AND 50-362

By letter dated November 3, 2005 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML053110284), as supplemented by letter dated May 1, 2006 (ADAMS Accession No. ML061240320), Southern California Edison submitted an application to change the San Onofre Nuclear Generating Station, Units 2 and 3 (SONGS 2 and 3), technical specifications (TSs) related to steam generator tube inspection. The changes would define the depth of the required tube inspections and plugging criteria within the tubesheet, with the depth of inspection defined as "C*" ("C-star"). The technical basis for these changes was initially documented for the hot leg in Westinghouse topical report WCAP-16208-P, Revision 0, "NDE [Nondestructive Examination] Inspection Length for CE [Combustion Engineering] Steam Generator Tubesheet Region Explosive Expansions," dated October 2004.

In order to complete its review of the license amendment for SONGS 2 and 3, the Nuclear Regulatory Commission (NRC) staff needs followup information requested below.

It is the NRC staff's understanding that the licensee's application to adopt the TSTF-449, "Steam Generator Tube Integrity," TSs will most likely be processed before the C* tube inspection and repair criteria, and that the C* submittal will, therefore, need to be modified to match the TSTF-449 format and wording. For example, TS 5.5.2.11.c will need to be modified to reference the C* repair limits by incorporating language similar to, "... through application of the alternate tube repair criteria discussed in TS 5.5.2.11.c.1," where TS 5.5.2.11.c.1 would define the C* repair limits.

In addition, the NRC staff needs the additional information requested below in order to complete its review of the C* license amendment for SONGS 2 and 3.

1. Your response to RAI #4 on reporting requirements questions the value of reporting end-of-cycle accident-induced leakage from tubesheet indications within the inspected regions of the tubesheet because the corresponding tubes would be plugged upon detection of the indications. Although the staff recognizes the current approach of plugging flaws on detection in this region should provide very high confidence that no potential leaking or structurally significant flaws are identified in this region, such an approach cannot ensure it with certainty. The purpose of the reporting requirement is to confirm this expectation.

As a result, please confirm that under your reporting requirement to submit the results of your condition monitoring assessment (under the TSTF-449 reporting requirements), you will provide your assessment of accident-induced leakage from all tubesheet indications. In addition, please confirm that you will provide the information requested in the original RAI #4 regarding the nature and number of indications in the tubesheet under the TSTF-449 reporting requirement to provide the location, orientation, and measured sizes of service-induced indications.

2. In proposed TS Section 5.5.2.11.f (page 5.0-18), an exception to the tube repair criteria for tubes that have been repaired states:

For tubes that have been repaired: Below the bottom of the pressure retaining portion of the parent tube in contact with the sleeve (the lower joint that is formed by hard-rolling) or greater than 10.6 inches below the bottom of the hot leg expansion transition, whichever is lower.

The above wording is acceptable provided the bottom of the hot-leg expansion transition (BET) is at or below the top of the tubesheet (TTS), but it does not adequately address cases where the BET is above the TTS. Since the intent of the C* criteria is to permit degradation to remain in the hot-leg tubesheet only when it is located 10.6 inches below the hot-leg BET, 10.6 inches below the TTS, or below the lower sleeve joint, whichever of these three is lowest. Please discuss your plans to revise this TS to make it consistent with the intent of the C* criteria.

3. Proposed TS 5.5.2.11.h (pages 5.0-18a and 5.0-18b) defines tube inspection requirements for tubes in which a lower sleeve joint is located below the C* distance in at least one of the tubesheets as follows:

For all other tubes, a tube inspection means an inspection from the bottom of the sleeve completely around the U-bend to either (a) 10.6 inches below the bottom of the hot leg expansion transition or the top of the tubesheet (whichever is lower) or (b) 11.0 inches below the bottom of the cold leg expansion transition or the top the tubesheet (whichever is lower), as appropriate.

This proposal does not require an adequate depth of inspection in cases where a tube has sleeves installed at both ends within the tubesheet, and both sleeve ends extend below the C* distance. Please discuss your plans to modify your TS in order to address all three possible cases of sleeve ends extending below the C* distance: (1) lower sleeve end extending below the C* distance in the hot-leg tubesheet, (2) lower sleeve end extending below the C* distance in the cold-leg tubesheet, and (3) lower sleeve end extending below the C* distance in both the hot-leg and cold-leg tubesheets.

Finally, the NRC staff notes that if your TSTF-449 amendment is not approved before the C* amendment, we may request additional information concerning the operational leakage limit at SONGS 3.

San Onofre Nuclear Generating Station
Units 2 and 3

cc:

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March 2006