SOUTHERN CALIFORNIA
EDISON®
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Brian Katz
Vice President

September 26, 2007

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

Subject: **Docket Nos. 50-361 and 50-362**
Response to Request for Additional Information and Submittal of Supplement 2 to Proposed Technical Specification Change Number NPF-10/15-572 License Amendment Request, "Proposed Technical Specification Change, Steam Generator Tube Surveillance Program, Tube Repair"
San Onofre Nuclear Generating Station, Units 2 and 3

References: 1) Letter from N. Kalyanam (NRC) to Richard M. Rosenblum (SCE) dated August 16, 2007, Subject: San Onofre Nuclear Generating Station, Units 2 and 3 – Request for Additional Information on the Proposed Amendment on Steam Generator Tube Surveillance Program, Tube Repair (TAC Nos. MD2584 and MD2585)

2) Letter from Brian Katz (SCE) to Document Control Desk (NRC) dated June 28, 2007, Subject: San Onofre Nuclear Generating Station, Units 2 and 3, Dockets Nos. 50-361 and 50-362, Response to Request for Additional Information and Submittal of Supplement 1 to Proposed Technical Specification Change Number NPF-10/15-572 License Amendment Request, "Proposed Technical Specification Change, Steam Generator Tube Surveillance Program, Tube Repair"

Dear Sir or Madam:

This letter provides information that was requested by the NRC staff in Reference 1, during review of Supplement 1 for this amendment request (Reference 2).

P.O. Box 128
San Clemente, CA 92674-0128
949-368-9275
Fax 949-368-9881

A001
NRR

Enclosure 3, (Supplement 2 to this amendment request) is the Southern California Edison (SCE) response to request number 22 of the NRC request for additional information (Reference 1). Supplement 2 adds a limitation in Technical Specifications (i.e., a date by which all sleeves will be removed from service).

Supplement 2 provides a revised Technical Specification page for each Unit to incorporate the SCE response to request number 22 of Reference 1. The revised pages are to replace the corresponding pages previously submitted in Supplement 1.

Enclosure 4 is the Westinghouse-provided response to Request Number 21 associated with the Westinghouse Technical Report SG-SGDA-05-48-P Revision 1.

The No Significant Hazards Consideration and Environmental Evaluation provided with PCN-572 both remain bounding.

Should you have any questions, or require additional information, please contact Ms. L. T. Conklin at (949) 368-9443.

Sincerely,

Brian Katz

Enclosures:

1. Notarized affidavit, Unit 2
2. Notarized affidavit, Unit 3
3. Supplement 2 to the Proposed License Amendment Request, Proposed Change Number 572, with attachments A – D (revised Technical Specification change pages)
4. Westinghouse-Provided Response to NRC Request for Additional Information (RAI) Regarding San Onofre Nuclear Generating Station Units 2 and 3 Steam Generator Tube Surveillance Technical Specification Amendment

cc: E. E. Collins, Jr., Regional Administrator, NRC Region IV
N. Kalyanam, NRC Project Manager, San Onofre Units 2 and 3
C. C. Osterholtz, NRC Senior Resident Inspector, San Onofre Units 2 and 3
S. Y. Hsu, California Department of Health Services, Radiologic Health Branch

Enclosure 1

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Application of SOUTHERN CALIFORNIA EDISON COMPANY, ET AL. for a Class 103 License to Acquire, Possess, and Use a Utilization Facility as Part of Unit No. 2 of the San Onofre Nuclear Generating Station	)))))	Docket No. 50-361 Supplement 2 to Amendment Application No. 245

SOUTHERN CALIFORNIA EDISON COMPANY, ET AL. pursuant to 10 CFR 50.90, hereby submit Supplement 2 to Amendment Application No. 245. This amendment application consists of Supplement 2 to Proposed Change No. 572 which is a request to revise Facility Operating License NPF-10 to update the Technical Specification steam generator program.

State of California
County of San Diego

Brian Katz

Brian Katz, Vice President

Subscribed and sworn to ~~(or affirmed)~~ before me on this 26th day of September, 2007.

by Brian Katz

personally known to me ~~or proved to me on the basis of satisfactory evidence~~ to be the person who appeared before me.

Dawn A. Farrell

Notary Public

DAWN A. FARRELL
Commission # 1623105
Notary Public - California
San Diego County
My Comm. Expires Nov 20, 2009

Enclosure 2

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Application of SOUTHERN CALIFORNIA EDISON COMPANY, ET AL. for a Class 103 License to Acquire, Possess, and Use a Utilization Facility as Part of Unit No. 3 of the San Onofre Nuclear Generating Station	)))))	Docket No. 50-362 Supplement 2 to Amendment Application No. 230

SOUTHERN CALIFORNIA EDISON COMPANY, ET AL. pursuant to 10 CFR 50.90, hereby submit Supplement 2 to Amendment Application No. 230. This amendment application consists of Supplement 2 to Proposed Change No. 572 which is a request to revise Facility Operating License NPF-15 to update the Technical Specification steam generator program.

State of California
County of San Diego

Brian Katz
Brian Katz, Vice President

Subscribed and sworn to ~~(or affirmed)~~ before me on this 26th day of September, 2007.

By Brian Katz

personally known to me ~~or proved to me on the basis of satisfactory evidence~~ to be the person who appeared before me.

Dawn A. Farrell
Notary Public

DAWN A. FARRELL
Commission # 1623105
Notary Public - California
San Diego County
My Comm. Expires Nov 20, 2009

ENCLOSURE 3

Supplement 2 to the Proposed License Amendment Request

Proposed Change Number 572 with attachments A – D
(Revised Technical Specification change pages)

LICENSEE'S EVALUATION

DESCRIPTION FOR PROPOSED TECHNICAL SPECIFICATION CHANGE NPF-10/15-572 SUPPLEMENT 2, STEAM GENERATOR TUBE SURVEILLANCE PROGRAM, TUBE REPAIR

San Onofre Nuclear Generating Station Units 2 and 3

PCN-572 SUPPLEMENT 2 PROPOSED TECHNICAL SPECIFICATION CHANGE REVISIONS (changes indicated by highlight and strikeout)

Unit 2: see Attachment A
Unit 3: see Attachment B

PCN-572 SUPPLEMENT 2 PROPOSED TECHNICAL SPECIFICATIONS PAGE
(Replacement Page – to replace a corresponding page previously submitted to the NRC in Supplement 1)

Unit 2: see Attachment C
Unit 3: see Attachment D

1.0 INTRODUCTION

Supplement 2 to PCN-572 provides a limitation that all sleeves will be removed from service by a specific date (in response to an NRC request for additional information).

2.0 PROPOSED CHANGE

Supplement 2 provides a revised page for each Unit to incorporate the SCE response to NRC Request Number 22 regarding provision of a limitation that all steam generator sleeves will be removed from service by a specified date. The revised Technical Specification pages included in Supplement 2 are to replace the corresponding page number 5.0-16 for each Unit previously submitted in Supplement 1 to this amendment request.

3.0 REGULATORY SAFETY ANALYSIS

The No Significant Hazards Consideration and Environmental Evaluation provided with PCN-572 both remain bounding.

Attachment A

PCN-572 SUPPLEMENT 2

PROPOSED TECHNICAL SPECIFICATION CHANGE REVISIONS

(Supplement 2 Changes indicated by highlight and strikeout

on Supplement 1 Technical Specifications page.)

SONGS Unit 2

5.5 Procedures, Programs, and Manuals (continued)

5.5.2.11 Steam Generator (SG) Program (continued)

type and location of flaws to which the tubes may be susceptible and, based on this assessment, to determine which inspection methods need to be employed and at what locations.

1. Inspect 100% of the tubes in each SG during the first refueling outage following SG replacement.

2. Inspect 100% of the tubes at sequential periods of 60 effective full power months. The first sequential period shall be considered to begin after the first inservice inspection of the SGs. No SG shall operate for more than 24 effective full power months or one refueling outage (whichever is less) without being inspected.

3. If crack indications are found in any SG tube, then the next inspection for each SG for the degradation mechanism that caused the crack indication shall not exceed 24 effective full power months or one refueling outage (whichever is less). If definitive information, such as from examination of a pulled tube, diagnostic non-destructive testing, or engineering evaluation indicates that a crack-like indication is not associated with a crack(s), then the indication need not be treated as a crack.

4. All sleeves shall be inspected with eddy current prior to initial operation. This includes pressure retaining portions of the parent tube in contact with the sleeve, the sleeve-to-tube weld and the pressure retaining portion of the sleeve.

e. Provisions for monitoring operational primary to secondary LEAKAGE.

f. Provisions for SG tube repair methods. Steam generator tube repair methods shall provide the means to re-establish the RCS pressure boundary integrity of SG tubes without removing the tube from service. For the purposes of these Specifications, tube plugging is not a repair. All acceptable tube repair methods are listed below.

1. TIG welded sleeving with heat treatment, as described in ABB/CE Topical Report, CEN-630-P, Rev. 2, is ~~currently~~ approved by the NRC until the existing Steam Generators are removed from service, forecasted by December 2009.

Tube repair can be performed on certain tubes that have been previously plugged as a corrective or preventive measure. A tube inspection of the entire length of the tube shall be performed on a previously plugged tube prior to returning the tube to service.

Attachment B

PCN-572 SUPPLEMENT 2

PROPOSED TECHNICAL SPECIFICATION CHANGE REVISIONS

(Supplement 2 Changes indicated by highlight and strikeout

on Supplement 1 Technical Specification page.)

SONGS Unit 3

5.5 Procedures, Programs, and Manuals (continued)

5.5.2.11 Steam Generator (SG) Program (continued)

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Attachment C

PCN-572 SUPPLEMENT 2 PROPOSED TECHNICAL SPECIFICATIONS PAGE

(Replacement Page for the Corresponding Supplement 1 Page)

SONGS Unit 2

5.5 Procedures, Programs, and Manuals (continued)

5.5.2.11 Steam Generator (SG) Program (continued)

type and location of flaws to which the tubes may be susceptible and, based on this assessment, to determine which inspection methods need to be employed and at what locations.

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Tube repair can be performed on certain tubes that have been previously plugged as a corrective or preventive measure. A tube inspection of the entire length of the tube shall be performed on a previously plugged tube prior to returning the tube to service.

Attachment D

PCN-572 SUPPLEMENT 2 PROPOSED TECHNICAL SPECIFICATIONS PAGE

(Replacement Page for the Corresponding Supplement 1 Page)

SONGS Unit 3

5.5 Procedures, Programs, and Manuals (continued)

5.5.2.11 Steam Generator (SG) Program (continued)

type and location of flaws to which the tubes may be susceptible and, based on this assessment, to determine which inspection methods need to be employed and at what locations.

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ENCLOSURE 4

Westinghouse-Provided Response to NRC Request for Additional Information (RAI) Regarding San Onofre Nuclear Generating Station, Units 2 and 3 Steam Generator Tube Surveillance Technical Specification Amendment Request

Subejct: San Onofre Nuclear Generating Station, Units 2 and 3 – Request for Additional Information on the Proposed Amendment on Steam Generator Tube Surveillance Program, Tube Repair (TAC Nos. MD2584 and MD2585)

Response to RAIs dated August 16, 2007, Docket Nos. 50-361 and 50-362

21. In your June 28, 2007, letter, you indicated (in your response to question 20), that the text in your July 14, 2006, letter (Enclosure 5) was discussing the leakage from two different sources: the tube-to-tubesheet joint and the tube-to-sleeve joint. Please clarify whether this is correct. If so, how was the leakage from the tube-to-sleeve joint distinguished from the leakage from the tube-to-tubesheet joint and which results in Table 6-1 apply to the tube-to-sleeve joint?

Response: As described in Southern California Edison's July 14, 2006 letter, Enclosure 5 (Westinghouse Technical Report SG-SGDA-05-48-P Revision 1), the tube was capped with a Swagelok fitting and connected to a condenser for collection of leakage from the tube-to-sleeve joint. Leakage from the tube-to-tubesheet joint was voided to the autoclave and collected. See Figure 3-1 of SG-SGDA-05-48-P Revision 1. As stated in SG-SGDA-05-48-P Revision 1, the leakage data contained in Table 6-1 applies to the tube-to-sleeve joint only as leakage from the tube-to-tubesheet joint was negligible.

In addition, please clarify the following:

a. The text of page 6-1 of your July 14, 2006, letter (Enclosure 5) indicates that samples 1, 2, 6, and 8 and all 7/8-inch samples essentially did not leak during room temperature testing. Assuming that leakage of 2.7×10^{-6} gallons per minute (gpm) is considered negligible (per your June 28, 2007, letter), please clarify whether sample 5 leaked under room temperature conditions.

Response: Per SG-SGDA-05-48-P Revision 1, sample Leak-05-3/4 had zero leakage at room temperature and 1500 pounds per square inch (psi) differential (psid) pressure. As stated in the report, in some cases, leakage was only detectable by collection of residual moisture from the sample discharge line, and was assigned a value of 2.72×10^{-6} gpm. A review of the leak test data indicates that the leakage from specimens assigned a value of 2.72×10^{-6} gpm was <0.01 grams per minute at both 1500 and 2650 psid. A leakage specification of 2.72×10^{-6} gpm equates to 0.01 grams per minute. A zero leakage specification would then indicate there was no residual moisture in the discharge line.

The integrated leak rate of sample 5 at 2650 psid and room temperature conditions varied from 4.4×10^{-6} gpm to 1.8×10^{-5} gpm. The more conservative value of 1.8×10^{-5} gpm was included in Table 6-1 of SG-SGDA-05-48-P Revision 1. The difference between a 2650 psid leak rate of 4.4×10^{-6} gpm to 1.8×10^{-5} gpm and an assigned 2650 psid leak rate of 2.72×10^{-6} gpm is exceptionally small; thus the performance of sample 5 is not systematically different from the other samples with a zero or 2.72×10^{-6} gpm leakage specification.

b. You indicated that the leak rate from the room temperature specimens is bounded by 2.72×10^{-6} gpm. In this case, please clarify the leak rate for specimen 4 (3/4-inch tubing), which is reported in Table 6-1 as having leaked at 5.44×10^{-5} gpm.

Response: SG-SGDA-05-48-P Revision 1 states that specimen 4 was sectioned after leak testing. It was found that the placement of the 1/16 inch diameter flow holes was such that the lower edge of the hole intersected the nickel-microlok band interface. Thus the 1/16-inch diameter flow hole was located entirely within the microlok region. With the subsequent staking of the sleeve to cause separation between the tube and sleeve at the flow hole the effective leak path for this sample was significantly reduced compared to the other samples. Thus the applicability of this sample is questionable due to the placement of the flow holes and subsequent

staking. Despite this condition, the leak rate at 1500 psid and room temperature conditions was only 5.4×10^{-5} gpm.

Note that SG-SGDA-05-48-P Revision 1 (Section 6) recommends application of a leak rate (for observed parent tube degradation adjacent to the sleeve nickel band region) of 2×10^{-5} gpm per sleeve based on the *high temperature* leak test. The high temperature leak rate data shows that the leak rates were reduced compared to room temperature tests, which is anticipated due to thermal expansion of the tube-sleeve assembly.