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Director, Nuclear Regulatory Affairs and
Emergency Planning

February 4, 2013 10 CFR 50.4

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Subject: **Docket No. 50-361**
Response to Request for Additional Information (RAI 6)
Regarding Confirmatory Action Letter Response
(TAC No. ME 9727)
San Onofre Nuclear Generating Station, Unit 2

References:
1. Letter from Mr. Elmo E. Collins (USNRC) to Mr. Peter T. Dietrich (SCE), dated March 27, 2012, Confirmatory Action Letter 4-12-001, San Onofre Nuclear Generating Station, Units 2 and 3, Commitments to Address Steam Generator Tube Degradation

2. Letter from Mr. Peter T. Dietrich (SCE) to Mr. Elmo E. Collins (USNRC), dated October 3, 2012, Confirmatory Action Letter – Actions to Address Steam Generator Tube Degradation, San Onofre Nuclear Generating Station, Unit 2

3. Letter from Mr. James R. Hall (USNRC) to Mr. Peter T. Dietrich (SCE), dated December 26, 2012, Request for Additional Information Regarding Response to Confirmatory Action Letter, San Onofre Nuclear Generating Station, Unit 2

Dear Sir or Madam,

On March 27, 2012, the Nuclear Regulatory Commission (NRC) issued a Confirmatory Action Letter (CAL) (Reference 1) to Southern California Edison (SCE) describing actions that the NRC and SCE agreed would be completed to address issues identified in the steam generator tubes of San Onofre Nuclear Generating Station (SONGS) Units 2 and 3. In a letter to the NRC dated October 3, 2012 (Reference 2), SCE reported completion of the Unit 2 CAL actions and included a Return to Service Report (RTSR) that provided details of their completion.

By letter dated December 26, 2012 (Reference 3), the NRC issued Requests for Additional Information (RAIs) regarding the CAL response. Enclosure 1 of this letter provides the responses to RAI 6.

P.O. Box 128
San Clemente, CA 92672

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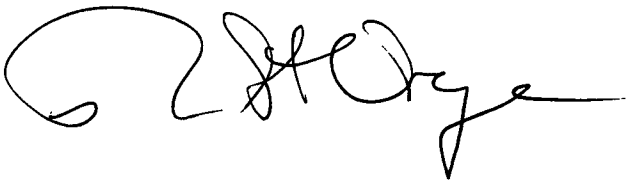
NRR

There are no new regulatory commitments contained in this letter. If you have any questions or require additional information, please call me at (949) 368-6240.

Sincerely,



Enclosure:

1. Response to RAI 6

cc: E. E. Collins, Regional Administrator, NRC Region IV
J. R. Hall, NRC Project Manager, SONGS Units 2 and 3
G. G. Warnick, NRC Senior Resident Inspector, SONGS Units 2 and 3
R. E. Lantz, Branch Chief, Division of Reactor Projects, NRC Region IV

ENCLOSURE 1

SOUTHERN CALIFORNIA EDISON

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

REGARDING RESPONSE TO CONFIRMATORY ACTION LETTER

DOCKET NO. 50-361

TAC NO. ME 9727

Response to RAI 6

RAI 6

Regarding Reference 4, page 4-5, it seems that depths of undetected flaws are assumed to be associated with POD $\leq$ 0.05. Why is this conservative? Is there a possibility that some undetected flaws may be associated with higher values of POD?

RESPONSE

It is possible that there could exist some undetected wear above the 5% probability of detection (POD) performance level. However, the likelihood of any significant number of undetected indications with depths that exceed the 5% POD at the beginning of the next operating cycle is very low. This is based on the conditions following Southern California Edison's (SCE's) enhanced inspections and tube plugging for Unit 2 as discussed below:

1) A large sample of tubes in the high-wear region underwent a double inspection, first with the bobbin probe followed later with +Point™. The resulting POD performance will be better than either technique.

2) As discussed in RAI Reference 4, the threshold of detection for the +Point™ is approximately 5% through wall (TW). Based on Examination Technique Specification Sheet (ETSS) 27902.2 data for +Point™, all indications above this threshold value were detected for the ETSS data set.

3) Screening criteria were developed to identify tubes susceptible to tube-to-tube wear (TTW). These tubes were preventively plugged. These preventively plugged tubes are the most likely to have TTW.

The use of POD thresholds for TTW and support wear are reasonable and conservative for assessing the mid-cycle operation for Unit 2. To evaluate the sensitivity of this assumption for undetected TTW, the operational assessment (OA) model in RAI Reference 4 was evaluated for a higher threshold value for the +Point™ probe. This threshold value was conservatively taken as 0.95 instead of 0.05. The 0.95 POD detection limit is used in defining the worst-case indication at beginning of the operating cycle when performing a deterministic single-tube analysis per the industry guidelines. This would effectively double the threshold depth for an undetected TTW indication from about 5% TW to 10% TW in the Unit 2 simulation based on Figure 4-3 of RAI Reference 4. The results from this analysis reduce the allowable inspection interval by less than 0.06 years at power. The selection of the threshold detection limit for TTW has a minor impact on the probability of burst results shown in Figure 5-4 of RAI Reference 4 even when a more conservative POD threshold value is assumed.

The treatment of undetected tube support wear in the 1350 no degradation detected (NDD) tubes is very conservative. RAI Reference 4 assumes that every tube in this group has undetected tube wear at both anti-vibration bar (AVB) and tube support plate (TSP) locations. The wear locations are assigned based on the distribution of tube support wear observed for the tube that had detected wear at the end of the previous operating cycle. The model algorithm assigns five active wear locations, on average, in each NDD tube (two minimum, one at AVB and one at TSP). This assumes that the presence of tube/support wear in the NDD tubes during the mid-cycle will be the same as observed in the worn tubes in the first cycle. Additionally, the likelihood of having multiple NDD indications with significant depths at the beginning of the next operating cycle is low. The process of assigning wear locations with depths using a 5% POD threshold for the 1350 NDD tubes will result in a conservative estimate of wear index at the beginning of the next operating cycle.