

July 31, 2002

Document Control Desk
U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C., 20555-0001

Subject: Docket No. 50-361
30-day Unit 2 Post Refueling Outage Response to NRC Bulletin
2001-01 "Circumferential Cracking of Reactor Pressure Vessel Head
Penetration Nozzles" and NRC Bulletin 2002-01, "Reactor Pressure
Vessel Head Degradation and Reactor Coolant Pressure Boundary
Integrity" for San Onofre Nuclear Generating Station, Unit 2

References: See Enclosure 1

Dear Sir or Madam:

This letter provides the Southern California Edison Company (SCE) 30-day post refueling outage response to NRC Bulletin 2001-01, "Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles" and NRC Bulletin 2002-01, "Reactor Pressure Vessel Head Degradation and Reactor Coolant Pressure Boundary Integrity" (References 1 and 2) for San Onofre Nuclear Generating Station (SONGS) Unit 2.

As required by NRC Bulletin 2001-01, SCE provided responses that included the information requested by Items 1 and 4 of the bulletin in a letter dated August 31, 2001 (Reference 3). Items 2 and 3 of Bulletin 2001-01 did not apply to SONGS. As required by NRC Bulletin 2002-01, SCE provided responses that included the information requested by Items 1A through E of the bulletin in a letter dated April 2, 2002 (Reference 4). Those responses noted that the inspection of SONGS Unit 2 reactor vessel head was planned to occur during the outage scheduled to begin in May of 2002. The inspection effort has recently been completed, and consistent with the 30-day reporting requirements of Bulletin 2001-01, Item 5 and Bulletin 2002-01, Item 2, the inspection scope and results of the SONGS Unit 2 reactor vessel head inspection are provided in Enclosure 2.

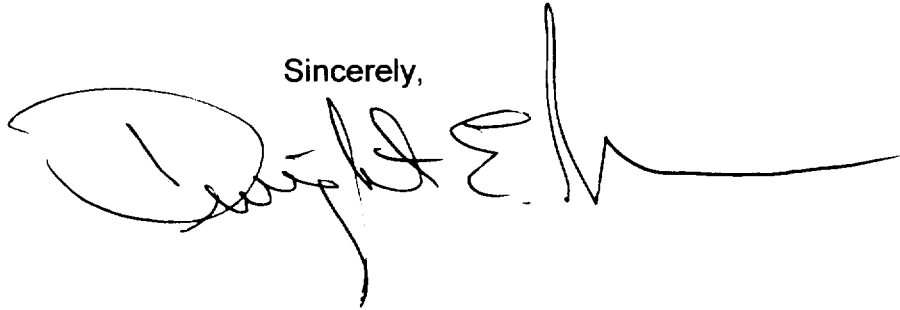
In conclusion, SCE has completed the reactor vessel head inspections at SONGS Unit 2, as committed in the responses to NRC Bulletins 2001-01 and 2002-01 (References 3 and 4). No primary water stress corrosion cracking was identified in any reactor vessel head penetration or attachment weld, no through-wall leakage was identified at any reactor vessel head penetration, and no indication of reactor vessel head degradation

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(i.e., wastage of the reactor vessel head base metal) other than minor surface corrosion was identified during the performance of the inspections at SONGS Unit 2. Consequently, the SONGS Unit 2 reactor head was cleaned and neither corrective actions nor root cause evaluations were required.

If you have any questions or would like additional information concerning this subject, please call Mr. Jack Rainsberry (949) 368-7420.

Sincerely,

A handwritten signature in black ink, appearing to read "Douglas E. Merschoff". The signature is written in a cursive style with a long horizontal line extending to the right.

Enclosures

cc: E. W. Merschoff, Regional Administrator, NRC Region IV
A. B. Wang, NRC Project Manager, San Onofre Units 2, and 3
C. C. Osterholtz, NRC Senior Resident Inspector, San Onofre Units 2 & 3

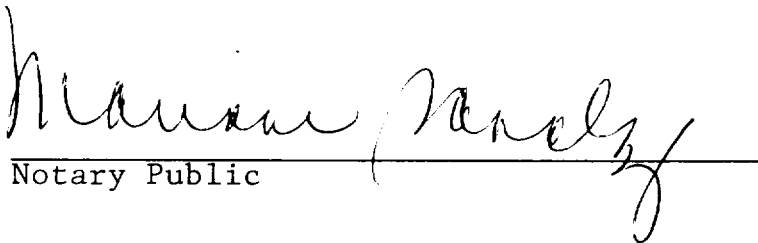
State of California
County of San Diego

Subscribed and sworn to (or affirmed) before me this 31st day of

July, 2002.

By: 

Dwight E. Nunn
Vice President


Notary Public



Enclosure 1 to the SCE 30-day Response to NRC Bulletins 2001-01 and 2002-01

References

- 1) NRC Bulletin 2001-01, "Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles," dated August 3, 2001.
- 2) NRC Bulletin 2002-01, "Reactor Pressure Vessel Head Degradation and Reactor Coolant Pressure Boundary Integrity," dated March 18, 2002
- 3) Letter from D. E. Nunn (SCE) to the Document Control Desk (NRC) dated August 31, 2001; Subject: Docket Nos. 50-361 and 50-362, 30-day Response to NRC Bulletin 2001-01, "Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles, San Onofre Nuclear Generating Station, Units 2 and 3"
- 4) Letter from D. E. Nunn (SCE) to the Document Control Desk (NRC) Dated April 2, 2002; Subject: Docket Nos. 50-361 and 50-362, 15-day Response to NRC Bulletin 2002-01, "Reactor Pressure Vessel Head Degradation and Reactor Coolant Pressure Boundary Integrity," San Onofre Nuclear Generating Station, Units 2 and 3

**Enclosure 2 to the SCE 30-day Response to
NRC Bulletins 2001-01 and 2002-01**

**San Onofre Nuclear Generating Station (SONGS) Unit 2,
Reactor Pressure Vessel Head Inspection Scope and Results**

NRC Bulletin 2001-01 Request:

5. Addressees are requested to provide the following information within 30 days after plant restart following the next refueling outage:
 - a. a description of the extent of VHP nozzle leakage and cracking detected at your plant, including the number, location, size, and nature of each crack detected;
 - b. if cracking is identified, a description of the inspections (type, scope, qualification requirements, and acceptance criteria), repairs, and other corrective actions you have taken to satisfy applicable regulatory requirements. This information is requested only if there are any changes from prior information submitted in accordance with this bulletin.

SCE Response

Southern California Edison (SCE) did not detect any vessel head penetration (VHP) nozzle leakage or cracking at SONGS Unit 2.

NRC Bulletin 2002-01 Request:

2. Within 30 days after plant restart following the next inspection of the reactor pressure vessel head to identify any degradation, all PWR addressees are required to submit to the NRC the following information:
 - A. The inspection scope (if different than that provided in response to Item 1.D.) and results, including the location, size, and nature of any degradation detected,

SCE Response

As committed to by the response 1.D of NRC Bulletin 2002-01 (Reference 4), SCE performed a qualified volumetric inspection of all 102 reactor pressure vessel head (RPVH) penetrations. The volumetric examinations were performed on 100 percent of the 102 reactor pressure vessel head penetrations with the exception of two locations, a small area

of control element drive mechanism (CEDM) number 91, approximately 20° coverage, and a substantial portion of the vent line.

For CEDM number 91, an eddy current scan of 270° of the surface of the j-groove attachment weld was performed to confirm that there were no surface connected cracks located in the area not covered by the volumetric inspection. There were no indications detected in the eddy current surface scan of CEDM number 91.

In the case of the vent line penetration, volumetric examination was limited by pipe distortion apparently introduced during fabrication. In addition to the partial volumetric examination and an above head effective visual inspection, a borescope was used to perform a visual inspection of the inside surface of the vent pipe to confirm that there were no visual signs of boric acid "bleed out." No indications of primary water stress corrosion cracking or leakage were detected in these examinations.

SCE removed the reactor head insulation and performed an effective visual inspection of 100 percent of the RPVH nozzle penetrations, as discussed in Reference 4. This visual inspection was capable of detecting and discriminating small amounts of boric acid deposits from nozzle leaks. This visual inspection was not compromised by the presence of insulation.

Forty-six penetration attachment welds were also examined using eddy current. These included the penetrations where either the volumetric or the visual examinations were inconclusive and as many discretionary penetrations that could be included without impacting the outage duration. When scanning an area of interest on CEDM number 87, the eddy current probe lifted off of the weld surface due to geometric effects. In this instance a manual dye penetrant examination was performed to complete the inspection. No degradation was identified in any of these supplementary examinations.

NRC Bulletin 2002-01 Request:

2. B. the corrective actions taken and the root cause of the degradation.

SCE Response

No indications found in any penetration were determined to be primary water stress corrosion cracking by the volumetric or eddy current surface examinations. Furthermore, no indication of reactor vessel head degradation was identified during the performance of the volumetric, wetted surface, or visual inspections. Therefore, the SONGS Unit 2 reactor head was cleaned and neither corrective actions nor root cause evaluations were required.