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Dwight E. Nunn
Vice President

November 4, 2002

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

Subject: **Docket Nos. 50-361 50-362**
Response to NRC Request for Additional Information Regarding the Southern California Edison 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

References: 1) 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

2) Letter from D. E. Nunn (SCE) to the Document Control Desk (NRC) Dated July 31, 2002; 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

Dear Sir or Madam:

This letter provides additional information to the Nuclear Regulatory Commission (NRC) regarding the Southern California Edison Company (SCE) 15-day response to NRC Bulletin 2002-01, "Reactor Pressure Vessel Head Degradation and Reactor Coolant Pressure Boundary Integrity" for San Onofre Nuclear Generating Station Units 2 and 3.

SCE provided the required 15-day response to NRC Bulletin 2002-01 on April 2, 2002 (Reference 1). Subsequently, the NRC staff requested additional clarifying information to reference 1 to aid in the NRC staff review. Additionally, SCE completed a reactor vessel head inspection at Unit 2 that included both a bare metal visual inspection of the head and volumetric examinations using eddy current and ultrasonic testing. The results of that inspection were submitted to the NRC on July 31, 2002 (Reference 2).

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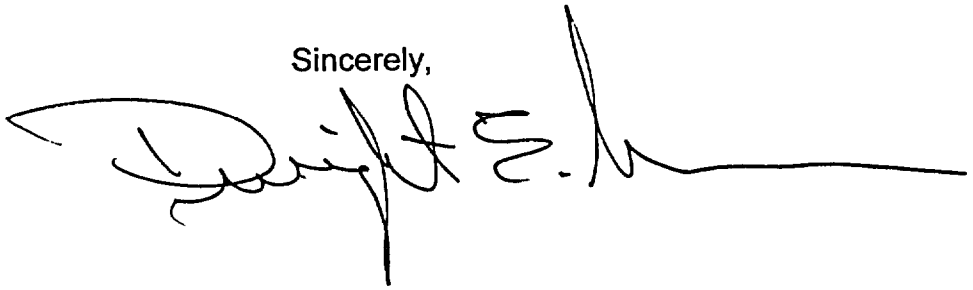
The specific NRC questions and the SCE responses are provided as an enclosure to this letter. If you have any questions or would like additional information concerning this subject, please call Mr. Jack Rainsberry at (949) 368-7420.

Sincerely,



Enclosure

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

Enclosure to the Response to the NRC Request for Additional Information Regarding the SCE 15-day Response to NRC Bulletin 2002-01

NRC Request

Please clarify if deposits have been found on the base metal of the head (i.e., in the portions that can be inspected). If deposits were detected, discuss the possibility that similar (or more severe) deposits could be located in the central portion of the reactor vessel head (i.e., the portion that can not be inspected). Include in your response the general location (i.e., in periphery or central portion of the head) of the control element drive mechanism vent valve leaks referenced in your Bulletin 2002-01 15-day response.

SCE Response

Unit 2

Light boric acid staining and dust like deposits had been observed on the San Onofre Nuclear Generating Station (SONGS) Unit 2 head. During the Unit 2 Cycle 12 refueling outage bare metal visual and volumetric examinations of the reactor pressure vessel head (RPVH) were performed and the RPVH was cleaned. Details of this inspection were provided to the NRC in a letter from D. E. Nunn (SCE) to the Document Control Desk (NRC) dated July 31, 2002; 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.

During the SONGS Unit 2 Cycle 12 refueling outage SCE removed all of the RPVH insulation and performed an effective bare metal visual examination of all 102 RPVH penetrations. That inspection identified numerous locations of minor boric acid deposits and staining. However, as anticipated in our Bulletin 2002-01 response, none of these deposits involved more than surface corrosion. SCE did not find any evidence of an aggressive corrosive environment.

Unit 3

Light boric acid staining and dust like deposits had been observed on the Unit 3 head periphery, similar to that discovered at Unit 2. These deposits were associated with external spillage. SCE did not find any evidence that these boric acid deposits were associated with a source of leakage under the unexposed, central portion of the RPVH. Based on our experience of inspections at both Units 2 and 3, it is considered likely that similar deposits from previous, external spillage would exist under the fixed insulation. However, SCE believes that severe deposits could not exist without being detected because extrusion of boric acid through the insulation or trails of boric acid residue would have been identified during previous bare metal peripheral RPVH inspections.

The observed boric acid deposits and stains were presumed to have originated during control element drive mechanism (CEDM) venting operations, CEDM vent valve leaks and an incore instrument failure that lead to external leakage. The CEDM venting operation is performed following each refueling outage and involves all CEDMs, therefore spills during this process would be nominally distributed across the periphery and central RPVH areas. CEDM vent valve leaks are normally detected shortly after the venting operation and result in minimal boric acid transport to the RPVH surface. These post-venting leaks are distributed in both peripheral and central areas of the RPVH. In 1992, SONGS Unit 3 had a very small operational CEDM vent valve leak at CEDM 50. This CEDM is located at the outer periphery of the central RPVH area where any significant accumulation of boric acid would have become evident in the adjacent bare metal inspection.

The inspection performed during the SONGS Unit 2 Cycle 12 refueling outage, discussed above, supports the expectation of SCE that the SONGS 3 RPVH is in similarly good condition. SCE plans to confirm this expectation by removing the insulation and performing a bare metal visual during the Unit 3 Cycle 12 refueling outage that is planned to begin on January 6, 2003.

NRC Request

Following the March 1991 Unit 2 incore instrument leak, was the bare metal of the reactor pressure vessel head inspected in the location where the leak reached the reactor pressure vessel head? Was all of the boric acid cleaned from the reactor pressure vessel head?

SCE Response

The leak occurred near the RPVH lift rig, approximately 20 feet above the RPVH. The area was cleaned, but a bare metal inspection was not performed at that time. However, during the Unit 2 Cycle 12 refueling outage, a bare metal inspection of the RPVH was performed and the RPVH was cleaned. Details of this inspection were provided to the NRC in a letter from D. E. Nunn (SCE) to the Document Control Desk (NRC) dated July 31, 2002; 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.

State of California
County of San Diego

Subscribed and sworn to (or affirmed) before me this 4th day of November, 2002.

By: _____
Dwight E. Nunn
Vice President

_____
Notary Public

MARIANE SANCHEZ
Commission # 1375470
Notary Public - California
San Diego County
My Comm. Expires Oct 14, 2006