

August 9, 2002

Mr. Gregg R. Overbeck  
Senior Vice President, Nuclear  
Arizona Public Service Company  
P. O. Box 52034  
Phoenix, AZ 85072-2034

SUBJECT: PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3 -  
REQUEST FOR ADDITIONAL INFORMATION ON RELIEF REQUESTS  
(RR) - 20 (TAC NOS. MB4498, MB4499, AND MB4500) AND RR-21 (TAC NOS.  
MB4645, MB4646, AND MB4647)

Dear Mr. Overbeck:

By letter dated March 15, 2002, you submitted a request for relief from certain American Society of Mechanical Engineers Boiler and Pressure Vessel Code requirements for Palo Verde Nuclear Generating Station, Units 1, 2, and 3. Specifically, you proposed an alternative for repairing flaws detected in the control element drive mechanism (CEDM) nozzles and connecting J-groove welds. RR-20 is for repairs performed on the inside diameter of the CEDM, and RR-21 is for repairs performed from the outside diameter of the CEDM and the J-groove welds.

The Nuclear Regulatory Commission (NRC) staff has determined that additional information is needed in order to complete its review and evaluation of your request. The enclosed questions were e-mailed to your staff in July 2002. Any differences between the enclosed request for additional information and the questions that were e-mailed are editorial or clarifications. Your staff agreed to submit a response to the questions by August 16, 2002. If you believed that any of the requested information was previously submitted to the NRC staff, please provide us with a specific reference.

Sincerely,

*/RA/*

Donald Naujock, Project Manager, Section 2  
Project Directorate IV  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket Nos. STN 50-528, STN 50-529,  
and STN 50-530

Enclosure: Request for Additional Information

cc w/encl: See next page

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**NRR-088**

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REQUEST FOR ADDITIONAL INFORMATION  
TO FACILITY OPERATING LICENSE NOS. NPF-41, NPF-51, AND NPF-74  
ARIZONA PUBLIC SERVICE COMPANY, ET AL.  
PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3  
DOCKET NOS. STN 50-528, STN 50-529, AND STN 50-530

INTRODUCTION

On March 15, 2002, Arizona Public Service Company (the licensee), submitted Relief Requests (RR) -20 and RR-21. The submittal requested relief from certain requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, 1992 Edition with 1992 Addenda (Code) for the repair of the reactor pressure vessel head (RPV) control element drive mechanism (CEDM) penetration nozzle and the J-groove weld connecting the CEDM nozzle to the RPV head. Specifically, you proposed an embedded flaw repair technique in lieu of ASME Code-requirements. RR-20 is for the repair performed on the inside surface of the CEDM nozzle, and RR-21 is for the repair performed on the outside surface of the CEDM nozzle or on the surface of the J-groove weld. In order to complete its review of the submittal, the Nuclear Regulatory Commission (NRC) staff is requesting the following information/clarification.

QUESTIONS

1. For Unit 2, the second 10-year inservice interval Code of record is the 1992 Edition with 1992 Addenda of Section XI of the ASME Code. The 1992 Edition with 1992 Addenda, IWA-4170(b) requires that repairs and replacements items be performed in accordance with the Construction Code or Section III. Identify your Construction Code, and identify later edition/addenda of Section III that are applicable to the repair/replacement Code applicable for Units 1 and 3.
2. The proposal is to use Westinghouse's topical report LTR-SMT-01-74, "Ultrasonic Testing of CRDM Penetration Tubes for the Detection of Outer Surface Circumferential Cracking: Technical Justification and Qualification Information." The topical report is based on the 1989 Edition of Section XI. Identify the changes in the 1992 Edition/1992 Addenda that occurred after the 1989 Edition and are applicable to the proposed repair/replacement. Provide a technical discussion reconciling the topical report to the later edition/addenda of the Code.

Enclosure

3. The proposed alternative requested relief from IWA-4310 which requires the removal or reduction in size, and states that any remaining portion of the flaw may be evaluated and the component accepted in accordance with the appropriate flaw evaluation rules of Section XI or the design rules of either the Construction Code, or Section III, when the Construction Code was not Section III. The ASME Section IWA-3300 rules require characterization of flaws. Provide a discussion on the characterization of flaws detected by inservice inspection and repair examinations.
4. The proposal is to use the embedded flaw repair technique to repair cracks on the inside diameter of the CEDM as presented in Westinghouse Electric Company, LLC. (The licensee's submittal dated March 15, 2002, referenced Westinghouse letter LTR-NRC-01-41, dated December 13, 2001.) LTR-NRC-01-41 references Westinghouse's topical report LTR-SMT-01-74 repair on the outside diameter of the CEDM and J-groove weld. However, LTR-NRC-01-41 does not provide the technical justification and qualification information for repairs performed from the inside diameter of the CEDM. Provide the technical justification and qualification information for the acceptability of the embedded flaw repair technique that is proposed for the repairs on the inside diameter of the CEDM. If a topical report is referenced, reconcile any differences between the edition/addenda of the Code in the topical report with the edition/addenda of the Code (1992 Edition with 1992 Addenda for Unit 2) associated with the repair.
5. The proposed repair provides an initiative discussion for repair longevity, but does not address reexamination of the repair after returning the vessel to service. Discuss the process Palo Verde will use to verify that embedded flaws are dormant as a result of the repairs.
6. The proposal is an alternative to removing flaws identified in the J-groove weld and/or CEDM tubes. Provide a discussion of the difficulties associated with a Code-required repair versus the proposed alternative. If radiation exposure is a consideration, estimate the differences between repairs performed by the Code and the proposed alternative.
7. On November 21, 2001, the NRC staff issued flaw evaluation guidelines for CEDM cracking issues (ADAMS Accession No. ML013250451). The guidelines provided a framework for the industry. Discuss the application of these guidelines or other guidelines developed by consensus building organizations that will be used by Palo Verde for the inspection and repair of the J-groove welds and CEDM tubes.

Palo Verde Generating Station, Units 1, 2, and 3

cc:

Mr. Steve Olea  
Arizona Corporation Commission  
1200 W. Washington Street  
Phoenix, AZ 85007

Douglas Kent Porter  
Senior Counsel  
Southern California Edison Company  
Law Department, Generation Resources  
P.O. Box 800  
Rosemead, CA 91770

Senior Resident Inspector  
U.S. Nuclear Regulatory Commission  
P. O. Box 40  
Buckeye, AZ 85326

Regional Administrator, Region IV  
U.S. Nuclear Regulatory Commission  
Harris Tower & Pavillion  
611 Ryan Plaza Drive, Suite 400  
Arlington, TX 76011-8064

Chairman  
Maricopa County Board of Supervisors  
301 W. Jefferson, 10th Floor  
Phoenix, AZ 85003

Mr. Aubrey V. Godwin, Director  
Arizona Radiation Regulatory Agency  
4814 South 40 Street  
Phoenix, AZ 85040

Mr. Craig K. Seaman, Director  
Regulatory Affairs/Nuclear Assurance  
Palo Verde Nuclear Generating Station  
P.O. Box 52034  
Phoenix, AZ 85072-2034

Mr. Hector R. Puente  
Vice President, Power Generation  
El Paso Electric Company  
2702 N. Third Street, Suite 3040  
Phoenix, AZ 85004

Mr. David Summers  
Public Service Company of New Mexico  
414 Silver SW, #1206  
Albuquerque, NM 87102

Mr. Jarlath Curran  
Southern California Edison Company  
5000 Pacific Coast Hwy Bldg DIN  
San Clemente, CA 92672

Mr. Robert Henry  
Salt River Project  
6504 East Thomas Road  
Scottsdale, AZ 85251

Terry Bassham, Esq.  
General Counsel  
El Paso Electric Company  
123 W. Mills  
El Paso, TX 79901

Mr. John Schumann  
Los Angeles Department of Water & Power  
Southern California Public Power Authority  
P.O. Box 51111, Room 1255-C  
Los Angeles, CA 90051-0100

Brian Almon  
Public Utility Commission  
William B. Travis Building  
P. O. Box 13326  
1701 North Congress Avenue  
Austin, TX 78701-3326