Palo Verde Nuclear
Generating Station

David Mauldin
Vice President
Nuclear Engineering
and Support

TEL (623) 393-5553
FAX (623) 393-6077

Mail Station 7605
P.O. Box 52034
Phoenix, AZ 85072-2034

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U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Station P1-37
Washington, DC 20555-0001

Subject: **Palo Verde Nuclear Generating Station (PVNGS)**
Unit 2
Docket No. STN 50-529
Special Report 2-SR-2004-001
Report of Boron Deposit at Control Element Drive Mechanism Vent

Dear Sirs:

Attached please find Special Report 2-SR-2004-001 prepared and submitted by Arizona Public Service (APS) pursuant to NRC Revised Order EA-03-009, dated February 20, 2004. Section IV.D of the Order requires licensees to perform certain visual inspections to identify potential boric acid leaks from pressure-retaining components above the Reactor Pressure Vessel head. Section IV.E of the Order requires licensees to submit reports detailing the inspection results within sixty (60) days after returning plants to operation.

This special report details the results of visual inspections performed at PVNGS Unit 2 subsequent to a reactor shutdown on February 19, 2004. The visual inspections were performed in accordance with the Boric Acid Corrosion Prevention Program which APS implements to identify and prevent boric acid corrosion of reactor pressure boundary components.

In accordance with 10 CFR 50.4(b)(1), copies of this report are being provided to the Region IV Administrator and the Palo Verde NRC Senior Resident Inspector.

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No commitments are being made to the NRC by this letter. If you have questions regarding this submittal, please contact Dan Marks, Section Leader, Compliance, at (623) 393-6492.

Sincerely,

David Mauldin

CDM/DFH/kg

Attachment

cc: B. S. Mallet, Region IV Administrator
M. B. Fields, PVNGS Project Manager
N. L. Salgado, Sr. Resident Inspector
Assistant General Counsel for Materials Litigation and Enforcement
Rulemaking and Adjudication Staff

Attachment
Palo Verde Nuclear Generating Station Unit 2
Special Report No. 2-SR-2004-001
Boron Deposit Found at Control Element Drive Mechanism Vent
Docket No. STN 50-529

Reporting Requirement:

The NRC Revised Order EA-03-009, "Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors," dated February 20, 2004, Section IV.D requires that certain visual inspections be performed to identify potential boric acid leaks from pressure-retaining components above the reactor pressure vessel head.

Additionally, Section IV.E of the NRC Order requires that licensees submit reports detailing the inspection results performed per section IV.D within sixty (60) days after returning the plant to operation if a leak or boron deposit was found during the inspection.

Background:

On February 19, 2004, Palo Verde Unit 2 was manually shutdown due to a Steam Generator tube leak. Subsequent to the reactor shutdown, routine visual inspections were performed in accordance with the Boric Acid Corrosion Prevention Program (APS procedure 70TI-9ZC01). APS implemented the Boric Acid Corrosion Prevention Program to prevent boric acid corrosion of reactor pressure boundary components and to ensure the requirements contained in USNRC Generic Letter No. 88-05, "Boric Acid Corrosion of Carbon Steel Reactor Pressure Boundary Components in PWR Plants" are met.

Report Detailing Inspection Results:

During boric acid walk-downs on February 20, 2004, one Unit 2 boric acid residue site was identified above the RPV head. The site was located on the Versa Vent for control element drive mechanism (CEDM) no. 8. The site exhibited no evidence of being an active leak and the boric acid residue did not contact the RPV head or related insulation. The source of the boric acid residue was most likely the vent ball / seating surface interface of the Versa-Vent.

Since no carbon steel was affected and the leak site on Versa Vent for CEDM no. 8 was not an active leak, no non-conforming condition exists. Versa Vent no. 8 was reworked prior to restarting Unit 2.

At the end of the forced outage, while in Mode 3, a small accumulation of water was discovered on Unit 2 Versa Vent for CEDM no. 87. This leak did not constitute a pressure boundary leak. However, Unit 2 was returned to Mode 5 to rework Versa Vent no. 87. Rework identified debris under the vent ball / seating surface which allowed

leakage past the vent ball and its associated o-ring. Both the vent ball and the o-ring were replaced.

No non-conforming condition exists on Versa Vent for CEDM no. 87, since the leak was isolated to the area in the vicinity of the Versa Vent and no carbon steel or related insulation was affected. However, the leak was documented in the APS Corrective Action program.

Unit 2 was returned to operation (Mode 1) on March 9, 2004.