NRC Revised Order EA-03-009

A subsidiary of Pinnacle West Capital Corporation

Palo Verde Nuclear Generating Station

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

Subject: **Palo Verde Nuclear Generating Station (PVNGS)**
Unit 1
Docket No. STN 50-528
Special Report 1-SR-2006-002
Report of Boron Deposit at Control Element Drive Mechanism Vent

Dear Sirs:

Attached please find Special Report 1-SR-2006-002 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 1 subsequent to a reactor shutdown on March 18, 2006. 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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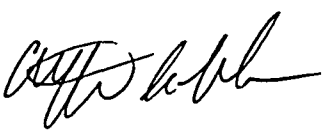
No commitments are being made to the NRC by this letter.

If you have questions regarding this submittal, please contact James Proctor, Section Leader, Compliance, at (623) 393-5730.

Sincerely,



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Attachment

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

Attachment
Palo Verde Nuclear Generating Station (PVNGS) Unit 1
Special Report No. 1-SR-2006-002
Boron Deposit Found at Control Element Drive Mechanism Vent
Docket No. STN 50-528

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 March 18, 2006, Palo Verde Unit 1 was shutdown for an extended outage. Subsequent to the reactor shutdown, and on two occasions when the plant was heated up and cooled back down, routine visual inspections were performed in accordance with the Boric Acid Corrosion Prevention Program (PVNGS procedure 70TI-9ZC01). PVNGS implemented the Boric Acid Corrosion Prevention Program to prevent boric acid corrosion of reactor pressure boundary components and to ensure the provisions of USNRC Generic Letter No. 88-05, "Boric Acid Corrosion of Carbon Steel Reactor Pressure Boundary Components in PWR Plants" were met.

Report Detailing Inspection Results:

During boric acid walk-downs on March 18, 2006, following the shutdown, two indications, not previously reported, were identified. On May 25, 2006 after a plant heatup and cooldown, two additional indications developed. Finally, on July 6, 2006 after a plant heatup and cooldown, five more indications developed. The nine new Unit 1 boric acid residue sites were identified above the Reactor Pressure Vessel (RPV) head. Eight sites were located on the Versa Vent for each control element drive mechanism (CEDM) numbers 5, 11, 26, 70, 75, 81, 86 and 88. One site was located around the packing gland of reactor vessel head vent valve (1P-RCE-V212). The sites did not exhibit evidence of an active leak, nor did the boric acid residue from any of the sites contact the RPV head or related insulation and no carbon steel was affected.

Versa Vents number 70, 75, 86 and 88 were reworked during the outage, but during a subsequent heatup and cooldown, Versa Vent number 88 was found with dried boric acid residue. Prior to restarting Unit 1, Versa Vents number 81 and 88 were cleaned. Versa Vents number 5, 11, and 26 were not cleaned and were left as is since rework would have required a major disassembly of the CEDM main power and position

indication cables. Work orders were generated in accordance with the corrective action program to rework the Versa Vents and the reactor vessel head vent valve. Unit 1 was returned to operation (Mode 1) on July 7, 2006.

Summary

March 18, 2006 – Walkdown following Plant Shutdown

CEDM Versa Vent #23 – previously reported on Special Report 1-SR-2006-001 and reworked during the outage.
CEDM Versa Vent #86 – reworked during outage.
CEDM Versa Vent #88 – reworked during outage but developed new indications during a subsequent heatup and cooldown. Cleaned prior to plant startup.

May 25, 2006 – Walkdown following Plant Heatup and Cooldown

CEDM Versa Vent #70 – reworked during outage.
CEDM Versa Vent #75 – reworked during outage.

July 6, 2006 – Walkdown following Plant Heatup and Cooldown

CEDM Versa Vent #5 – to be reworked later.
CEDM Versa Vent #11 – to be reworked later.
CEDM Versa Vent #26 – to be reworked later.
CEDM Versa Vent #81 – to be reworked later. Cleaned prior to plant startup.
Valve 1P-RCE-V212 – to be reworked later.