10 CFR 2.201
EA-11-006

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

Reference: Palo Verde Nuclear Generating Station Units 1, 2 and 3
NRC Problem Identification and Resolution Inspection Report
05000528/2010008, 05000529/2010008, 05000530/2010008, and Notice of Violation, dated January 28, 2011

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2 and 3
Docket Nos. STN 50-528, 50-529, and 50-530
Reply to Notice of Violation EA-11-006

In the above referenced letter to Arizona Public Service (APS), the NRC identified that APS failed to correct a water intrusion path to the Unit 2 motor termination boxes for the emergency diesel generator fuel oil transfer pumps and implement adequate corrective actions to preclude repetition.

Pursuant to the requirements of 10 CFR 2.201 and Notice of Violation (NOV) EA-11-006, attached to the above referenced letter, APS hereby submits its reply to the NOV. Enclosure 1 to this letter contains a restatement of the violation. Enclosure 2 contains the APS reply to the NOV.

No commitments are being made to the NRC by this letter.

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NRR

If you have any questions, please contact Marianne Webb, Regulatory Affairs, Compliance Section Leader, at (623) 393-5730.

Sincerely,

D.C. Mims

DCM/MNW/DFH/gat

Enclosures: 1. Restatement of Notice of Violation EA-11-006
2. Reply to Notice of Violation EA-11-006

cc:	E. E. Collins Jr.	NRC Region IV Regional Administrator
	J. R. Hall	NRC NRR Senior Project Manager - (electronic / paper)
	L. K. Gibson	NRC NRR Project Manager (electronic / paper)
	M. A. Brown	NRC Senior Resident Inspector for PVNGS

Enclosure 1
Restatement of Notice of Violation EA-11-006

During an NRC inspection conducted on November 29, 2010 through December 17, 2010, a violation of NRC requirements was identified. In accordance with NRC enforcement policy, the violation is listed below:

> 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action" requires, in part, that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition.
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> Contrary to the above, from April 2009 through September 2010, the licensee failed to correct a significant condition adverse to quality and implement adequate corrective actions to preclude repetition. Specifically, the licensee failed to correct a water intrusion path to the Unit 2 motor termination boxes for the emergency diesel generator fuel oil transfer pumps, resulting in degraded electrical connections and a pump trip.

This Notice of Violation is associated with a Green Significance Determination Process finding.

Enclosure 2
Reply to Notice of Violation EA-11-006

Arizona Public Service (APS) concurs with the violation. The NRC Integrated Inspection Report 05000528/2010008, 05000529/20109008, and 05000530/2010008, noted that APS failed to restore compliance of the Unit 2 emergency diesel generator fuel oil transfer pumps (DFOTP) within a reasonable time after the previous violation was identified in NCV 05000529/2009-004-002. The investigation concluded that the previous investigation did not recognize the possibility for water to flow inside the control cable's outer jacket to cause an electrical fault inside the motor termination box of the DFOTP.

The Reason For The Violation

The cause for failing to take adequate actions to correct the water intrusion path to the Unit 2 motor termination box for the emergency diesel generator fuel oil transfer pump (DFOTP) was that the investigation from the previous event did not identify an internal water path through a degraded cable outer jacket to the motor termination box. Subsequent investigation determined that the probable cause for the degradation of the cable outer jacket which allowed the water path to develop was the presence of an unknown chemical contaminant on the cable jacket. Corrective actions from the previous investigation focused on an electrical short to ground inside the motor termination box as a result of moisture and corrosion inside the motor termination box. The moisture source was thought to have been caused by water traveling through the conduit around the cables installed in the conduit. The previous investigation did not recognize the possibility for water to flow inside of the control cable's outer jacket to the motor termination box.

The Corrective Steps That Have Been Taken And The Results Achieved

As an immediate corrective action, the two conductor control cables and three conductor power cables from the cable pull boxes in the DFOTP vault to the motor termination boxes for the six site DFOTPs were replaced. The control and power cables were spliced to interrupt the drain path through the cable outer jacket around the cables and prevent possible future water drainage into the motor termination box. Additionally, boroscopic examinations were performed for the accessible sections of cable between the diesel building and the DFOTP

vault. This section of cable for the Unit 2 train A DFOTP was replaced due to the degraded condition of its outer jacket. No additional cables in the areas inspected boroscopically needed to be replaced. Finally, the motor termination boxes for the Unit 2 trains A and B DFOTP were replaced due to corrosion. The Units 1 and 3 motor termination boxes were inspected and exhibited no evidence of corrosion or moisture intrusion.

These actions eliminate the potential water flow path to the DFOTP motor termination box through the inside of the cable's outer jacket.

The Corrective Steps That Will Be Taken To Avoid Further Violations

In addition to the actions described above, the following design modification, specification changes and extent of condition evaluation will be performed.

- Implement a Design Change Request (DCR) to replace the underground duct banks and associated cabling from all three EDG buildings to the six site DFOST vaults with direct buried submersible cables.

- Revise installation specification 13-EN-0300 "Installation Specification for Electrical Cable in Cable Trays" and 13-EN-0301 "Installation Specification for Electrical Cables in Conduit and Duct Banks" to identify compatible chemicals for cleaning cables.

- Revise installation specification 13-EN-0306 "Installation Specification for Cable Splicing and Termination" to add a requirement to install a cable splice or other means of blocking the flow of water internal to the outer jacket of cables where an electrical component is at a location such that a hydrostatic head may be developed with respect to the cables.

- Evaluate the need for cable splices for critical components and components that support key safety or operational functions, that are located in areas where water may be transported through the outer jacket of the cables.

Additionally, Palo Verde will continue to monitor the EDG DFOTP cables as part of the Palo Verde preventive maintenance program to ensure the actions taken are effective to prevent water flow to the DFOTP motor termination box.

The Date When Full Compliance Will Be Achieved

Full compliance was achieved on September 23, 2010, with the replacement of the two conductor control cables and three conductor power cables for the Unit 2 trains A and B DFOTP. During replacement these cables were spliced to interrupt the drain path and prevent possible future water drainage into the motor termination box through a path internal to the jackets around the cables.