



Palo Verde Nuclear
Generating Station

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102-05236-GRO/TNW/GAM
March 25, 2005

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

Dear Sirs:

**Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2 and 3
Docket Nos. STN 50-528, 50-529, and 50-530
Supplement to Response to Bulletin 2003-01, "Potential Impact of
Debris Blockage on Emergency Sump Recirculation at Pressurized
Water Reactors," Regarding Operator Actions**

In letter no. 102-05164, dated October 22, 2004, Arizona Public Service Company (APS) provided responses to an NRC request for additional information for Bulletin 2003-01 dated September 1, 2004. In the October 22, 2004 response, APS committed to complete the final review and recommendations for the candidate operator actions documented in WCAP-16204, Revision 1, "Evaluation of Potential ERG and EPG Changes to Address NRC Bulletin 2003-01 Recommendations (PA-SEE-0085)," by February 25, 2005, and to submit to the NRC a schedule for implementation of the operator actions determined to reduce the risk associated with sump screen blockage by March 25, 2005.

Enclosure 1 contains the conclusions from APS' reviews of the candidate operator actions (COAs) in WCAP-16204 and schedules for implementation of the COAs to be pursued. Enclosure 2 is a table containing the regulatory commitment to implement the procedure changes and training for the COAs.

The review of WCAP-16204 was completed by APS on March 8, 2005, instead of February 25, 2005, as originally committed, but the delay in completing the review did not prevent the submittal of the results and implementation schedule by the committed date of March 25, 2005. This delay in meeting the regulatory commitment was entered in the corrective action program.

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If you have any questions, please contact Thomas N. Weber at (623) 393-5764.

Sincerely,



GRO/TNW/GAM

Enclosures: 1. APS' Review Results and Implementation Schedule for the Candidate
Operator Actions in WCAP-16204, Revision 1
2. List of New Regulatory Commitments

cc:	B. S. Mallett	NRC Region IV Regional Administrator
	M. B. Fields	NRC NRR Project Manager
	G. G. Warnick	NRC Senior Resident Inspector for PVNGS

ENCLOSURE 1

Arizona Public Service Company's Review Results and Implementation Schedule for the Candidate Operator Actions in WCAP-16204, Revision 1, at Palo Verde Nuclear Generating Station Units 1, 2, and 3

Westinghouse issued report WCAP-16204, Revision 1, "Evaluation of Potential ERG and EPG Changes to Address NRC Bulletin 2003-01 Recommendations (PA-SEE-0085)," in March 2004 containing a revision of the Combustion Engineering (CE) emergency procedure guidelines (EPGs) to address containment sump blockage issues. Report WCAP-16204, Appendix A, identifies eleven candidate operator actions that should be considered by plants to address potential containment sump blockage issues. The following are summaries of Arizona Public Service Company's (APS') review of each of the candidate operator actions in WCAP-16204, along with implementation schedules for those that APS has concluded should be implemented at the Palo Verde Nuclear Generating Station (PVNGS).

Candidate Operator Action (COA) 1a – Operator Action to Secure One Spray Pump

APS does not intend to implement COA 1a. Fan systems for post-accident containment heat removal are not employed at PVNGS. As stated in step 3 of Section A1a-CE in WCAP-16204, Appendix A, prior to stopping a containment spray pump, adequate heat removal should exist to allow the operator time to start the idle spray pump if the running pump fails. Step 3 also says to verify [two] containment fan coolers per train are operating. Since PVNGS does not use fan systems, this action cannot be performed.

Candidate Operator Action (COA) 1b – Operator Action to Secure Both Spray Pumps

APS does not intend to implement COA 1b. Fan systems for post-accident containment heat removal are not employed at PVNGS. Step 3 of Section A1b in WCAP-16204, Appendix A, says to verify [two] containment fan coolers per train are operating. Since PVNGS does not use fan systems, this action cannot be performed.

Candidate Operator Action (COA) 2 – Manually Establish One Train of Containment Sump Recirculation Prior to Automatic Actuation

APS does not intend to implement COA 2. Fan systems for post-accident containment heat removal are not employed at PVNGS. As stated in the conclusions and recommendations for COA A2 in WCAP-16204, Appendix A, implementation of this operator action is recommended only for plants that have the ability to secure one or both spray pumps. Because PVNGS cannot implement COAs 1a and 1b, this criteria cannot be met.

Candidate Operator Action (COA) 3 – Terminate One Train of HPSI/High-Head Injection After Recirculation Alignment

APS does not intend to implement COA 3. Based upon APS' review of the NRC parametric evaluations documented in NUREG/CR-6762, the creditability of sump blockage at Palo Verde is considered to be low risk. Therefore, the risk introduced by the proposed action and related hardware failures and reliance on operator actions outweigh the risk assessed due to a blockage and would result in a net increase in total plant risk.

Candidate Operator Action (COA) 4 – Early Termination of One LPSI/RHR Pump Prior to Recirculation Alignment

APS does not intend to implement COA 4. Based upon APS' review of the NRC parametric evaluations documented in NUREG/CR-6762, the creditability of sump blockage at Palo Verde is considered to be low risk. Therefore, the risk introduced by the proposed action and related hardware failures and reliance on operator actions outweigh the risk assessed due to a blockage and would result in a net increase in total plant risk.

Candidate Operator Action (COA) 5 – Refill of Refueling Water Storage Tank

APS plans to implement COA 5. (Note: the refueling water storage tank (RWST) is named the refueling water tank (RWT) at PVNGS.) Considerable change to the current event mitigation strategy is needed to implement this COA. Subsequently, extensive training will be needed to ensure operating crews understand the change in strategy. In order to properly implement the changes in the operator training cycles, APS will implement the procedure changes and provide associated operator training for COA 5 by February 24, 2006.

Candidate Operator Action (COA) 6 – Inject More Than One RWST Volume From a Refilled RWST or Bypassing the RWST

APS does not plan to implement COA 6. Implementation of EPG changes to inject water into the RCS from a refilled RWT or from an alternate makeup source bypassing the RWT would only be taken after aligning for recirculation and a subsequent loss of recirculation capability due to sump blockage. This is beyond design bases. Therefore, these actions must be coordinated by the Technical Support Center (TSC) and in accordance with the Severe Accident Management Guidelines (SAMGs).

Candidate Operator Action (COA) 7 – Provide More Aggressive Cooldown and Depressurization Following a Small Break LOCA

APS plans to implement COA 7. In order to properly implement the changes in the operator training cycles, APS will implement the procedure changes and provide associated operator training for COA 5 by February 24, 2006.

Candidate Operator Action (COA) 8 – Provide Guidance on Symptoms and Identification of Containment Sump Blockage

APS plans to implement COA 8. In order to properly implement the changes in the operator training cycles, APS will implement the procedure changes and provide associated operator training for COA 5 by February 24, 2006.

Candidate Operator Action (COA) 9 – Develop Contingency Actions in Response to: Containment Sump Blockage, Loss of Suction, and Cavitation

APS plans to implement COA 9 to the extent evaluated and documented and on the schedule identified for the proposed contingency actions addressed separately in COA 5, 7, and 8 evaluations.

Candidate Operator Action (COA) 10 – Early Termination of One Train of HPSI/High Head Injection Prior to Recirculation Alignment (RAS)

APS does not plan to implement COA 10. Based upon APS' review of the NRC parametric evaluations documented in NUREG/CR-6762, the creditability of sump blockage at Palo Verde is considered to be low risk. Therefore, the risk introduced by the proposed action and related hardware failures and reliance on operator actions outweigh the risk assessed due to a blockage and would result in a net increase in total plant risk.

Candidate Operator Action (COA) 11 – Prevent or Delay Containment Spray for Small Break LOCAs (< 1.0 Inch Diameter) in Ice Condenser Plants

APS does not intend to implement COA 11. PVNGS does not use ice condensers.

Enclosure 2

New Regulatory Commitments

The following table identifies those new actions committed to by APS in this document. Any other statements in this submittal are provided for information purposes and are not considered to be regulatory commitments. Please direct questions regarding these commitments to Thomas N. Weber at (623) 393-5764.

NEW REGULATORY COMMITMENT	DUE DATE
APS will implement the procedure changes and provide associated operator training for candidate operator actions (COAs) 5, 7, 8, and 9 from Appendix A of WCAP-16204, Revision 1, by February 24, 2006.	February 24, 2006