



A subsidiary of Pinnacle West Capital Corporation

Palo Verde Nuclear
Generating Station

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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
Response to NRC Request for Additional Information (RAI)
Regarding Revised Station Blackout Evaluation**

By e-mail dated May 26, 2006, Mr. David Terao of the NRC staff provided to Robert Roehler, Arizona Public Service Company (APS), a request for additional information (RAI) regarding the revised PVNGS station blackout evaluation that was submitted to the NRC by APS letter no. 102-05370, dated October 28, 2005. APS' response to the RAI is enclosed.

No new commitments are being made to the NRC by this letter. If you have any questions, please contact Thomas N. Weber at (623) 393-5764.

Sincerely,

JML/TNW/GAM/gt

Enclosure: **APS' Response to NRC Request for Additional Information Regarding Revised Station Blackout Evaluation**

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

A001

ENCLOSURE

**ARIZONA PUBLIC SERVICE COMPANY'S
RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION
REGARDING REVISED STATION BLACKOUT EVALUATION**

NRC Question 1

The revised procedure for the GTGs call for the GTGs to actuate within the first hour and energize the shutdown bus. Is this automatic action or manual action? And if this is a manual action, are the operator actions the same?

APS Response 1

The actuation of the GTGs within one hour after an SBO is a manual action that is credited in the current, NRC-approved, four hour Palo Verde SBO coping evaluation. There are no new actions required for actuation of the GTGs within one hour after an SBO for 16 hour SBO coping.

NRC Question 2

The SBO procedure is being revised to reflect the 16 hour period rather than the 4 hour coping period. Does the SBO procedure include the steps verbatim from the other procedures used to bring the plant to cold shutdown? Does the SBO procedure explicitly call out other procedures (such as the new procedure for the control air system) to be used or are the steps from these procedures repeated into the overall SBO procedure? Although the operators have been trained on the existing procedures, how have these actions that are included in the SBO procedure been verified to show that the operator can perform those steps at the estimated times (as listed in the RAI response dated April 19, 2006)?

APS Response 2

The revision to Emergency Operating Procedure (EOP) 40EP-9EO08, Blackout, will be implemented within the 6-month implementation period following NRC approval of the revised SBO evaluation. Procedure 40EP-9EO08 specifies actions to maintain subcooling and cooldown the plant during SBO conditions. A number of the actions refer the operators to perform steps in accordance with specific EOP standard appendices. The revision to 40EP-9EO08 and/or the EOP standard appendices will incorporate the changes for the additional coping period, including directions for operating the pressurizer vent valves and directing personnel to connect the supplemental control air system when needed. Training will be provided on the procedure changes prior to implementation, which will address the steps which must be performed by certain times within the 16-hour coping period.

NRC Question 3

The licensee has stated in the submittal that the supplemental control air system will be used to back up the nitrogen accumulators for the operation of SG ADVs. Do the nitrogen accumulators support the 16-hour coping period, or will the supplemental control air system be needed at some point to support the SG ADVs? If so, the new procedure that will be developed for the operation of this control air system will have to be validated within the overall SBO procedure. For instance, at some point, the accumulators will reach a minimum point where the control air system will have to be connected to support the controlled shutdown of the reactor at least up to 13 hours as stated in the RAI response of April 19, 2006. IOLB has to have assurance that this new procedure will be validated for its usage during SBO. Therefore, how will the licensee plan to validate this new procedure if the control air system serves as a critical component for reactor shutdown during an SBO?

APS Response 3

For the 16 hour SBO coping time, the current ADV backup nitrogen accumulators sizing would be marginal, requiring the compressed air system to be supplemented. The supplemental air system will be provided approximately 8 hours after an SBO. The Station Blackout procedure and/or the EOP standard appendices will be modified to support the addition of the supplemental air supply. The supplemental air system will be installed per the Palo Verde modification process. The modification will include the requirements for connecting and operating the supplemental air system. As part of the Palo Verde modification process, the supplemental air system modification will include design validation testing that will support connection and operation of the system.