



10 CFR 50.90
10 CFR 50.91

Palo Verde Nuclear
Generating Station

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

Reference: Letter dated May 15, 2001, "Proposed License Amendment Request to
Technical Specification 3.9.3, Containment Penetrations," C. D.
Mauldin, APS to USNRC

Dear Sirs:

**Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2, and 3
Docket Nos. STN 50-528/529/530
Response to Request for Additional Information on Proposed
License Amendment to Technical Specification 3.9.3, Containment
Penetrations**

In the letter referenced above, Arizona Public Service Company (APS) requested an amendment to Technical Specification (TS) 3.9.3, Containment Penetrations. During the review, the NRC Staff requested additional information related to the proposed amendment. APS has provided the additional information requested in the Enclosure to this letter and requests approval of the proposed amendment by September 30, 2002, with an allowance of 60 days for implementation of the approved amendment.

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

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

Sincerely,

CDM/SAB/RJR/kg

Enclosure:

cc: E. W. Merschoff
J. N. Donohew
D. G. Naujock
N. L. Salgado

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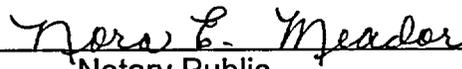
STATE OF ARIZONA)
) ss.
COUNTY OF MARICOPA)

I, Angela K. Krainik, represent that I am Director, Emergency Services, Arizona Public Service Company (APS), that the foregoing document has been signed by me on behalf of APS with full authority to do so, and that to the best of my knowledge and belief, the statements made therein are true and correct.



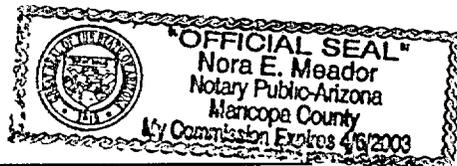
Angela K. Krainik

Sworn To Before Me This 29 Day Of August, 2002.



Notary Public

My Commission Expires _____



ENCLOSURE 1

**Response to Request for Additional Information
Proposed License Amendment to TS 3.9.3, Containment Penetrations**

**Response to Request for Additional Information
Proposed License Amendment to TS 3.9.3, Containment Penetrations
Open Air Lock/Other Containment Penetrations**

NRC Question 1:

Discuss the role of the two doors of the personnel air lock that opens directly to the outside yard areas in the external tornado missile protection for inside containment. Include in the discussion the credit that is taken for either, or both, of the doors to protect inside the containment from external missiles, or if there is another structure, system, or component that provides the protection.

APS Response:

The personnel air lock located on the 100-foot elevation that opens to the outside yard area is locked closed while the unit is operating. The air lock is an ASME Code-stamped pressure vessel. The doors are constructed of steel and look and operate in the same manner as submarine watertight compartment hatches. Both doors open inwards (toward the reactor) to provide continuous sealing against any containment pressure which might be developed due to a reactor accident.

The personnel air locks at PVNGS are classified as Seismic Category 1 (see PVNGS UFSAR Table 3.2-1, "Quality Classification of Structures, Systems, and Components"). Seismic Category 1 structures are designed for the extreme wind phenomena.

For refueling (Mode 6), neither the inner nor outer door of this air lock is needed for missile protection for equipment inside containment. UFSAR Section 3.5.2.2, "Missile Barriers within Containment," describes the barriers that would provide protection if a missile would enter containment through an air lock opening. The secondary shield, the primary shield, the refueling cavity walls, the reactor vessel and pressurizer missile shields, the various structural beams, and the operating floor act as missile barriers separating each reactor coolant loop from other protected components and missile sources (UFSAR Figures 1.2-4 through 1.2-13). In Modes 5 and 6, there are no essential targets between this air lock and the secondary shield. See UFSAR Figures 1.2-5 and 9B-30.

As stated in Section 4.0 "Technical Analysis" of the original submittal, PVNGS has in place procedure 40AO-9ZZ21 "Acts of Nature" that addresses the actions to be taken in the event of actual or forecasted severe weather conditions, including tornado. The procedure contains actions to ensure the personnel air lock is closed and that all fuel-handling operations are suspended.

NRC Question 2:

Briefly explain how the air lock doors and the containment penetrations, which provide direct flow paths from the containment to the outside atmosphere, are closed and what power is used. Include a discussion on any backup power available, for the case of station blackout, to still close the air locks and these containment penetrations.

APS Response:

PVNGS UFSAR Tables 6.2.4-1 and 6.2.4-2 provide the primary and secondary actuation modes, stroke times, power sources, as well as information on valve type, size, position (including failure) and valve arrangements for all containment penetrations. The information contained in these tables apply to various plant MODEs. Figure 6.2.4-1 (sheets 1 – 10) shows the valve arrangements of each penetration.

The personnel air locks are closed manually and do not require back-up power. This is also true for the manually operated valves in containment penetrations. In the event of a station blackout event (SBO) in any one unit, an alternate AC power source (Gas Turbine Generator) is available to provide the power necessary to cope with a SBO for a minimum of four hours (PVNGS UFSAR Section 8.3.1.1.10, "Alternate AC Power System").

NRC Question 3:

Provide a conservative time it takes to close a door in the two personnel air locks and the basis for this time. The time should be based on how the doors would be closed using the air lock administrative controls for the proposed amendments.

APS Response:

In the event of a fuel handling accident, it is estimated that the personnel air locks could be closed within 1 hour. This estimate is based on time for announcing the evacuation, time for the designated person to position themselves at the air lock, time for removing any obstructions (e.g., cables and hoses) that prevent closure of the air lock, and the time for closing the door. A fuel-handling event that would require closure of the personnel air locks would also require closure of the containment equipment hatch. Therefore, closure of the personnel air lock would be completed shortly after bolting of the containment equipment hatch cover is completed. Bolting of the equipment hatch cover is done inside containment. The final closure of the air lock is done at the completion of the evacuation of the containment.

NRC Question 4:

In the NRC-approved TSTF-68, Revision 2, for the containment personnel air locks, there is an insert for the LCO Bases of TS 3.9.3 that states the following:

"The allowance to have containment personnel airlock doors open and penetration flow paths with direct access from the containment atmosphere to the outside atmosphere to be unisolated during [irradiated] fuel movement [inside containment or] CORE ALTERATIONS is based on (1) confirmatory dose calculations of a fuel handling accident as approved by the NRC staff which indicate acceptable radiological consequences and (2) commitments from the licensee to implement acceptable administrative procedures that ensure in the event of a refueling accident (even though the containment fission product control function is not required to meet acceptable dose consequences) that the open air lock can and will be promptly closed following containment evacuation and that the open penetration(s) can and will be promptly closed. The time to close such penetrations or combinations of penetrations shall be included in the confirmatory dose calculations."

Explain why this insert was not included in the changes to the Bases that were identified in Attachment 3 to the application for license amendments dated May 15, 2002. The above insert appears to contain significant statements about the basis for the proposed allowance for having the air locks and penetration flow paths open. The words "irradiated," "inside containment," and "or" were added to the above insert, and shown above in [..]'s, because the applicability of Technical Specification (TS) 3.9.3 is during irradiated fuel movement inside containment or during core alterations (i.e., applicable for either case, not for both cases occurring simultaneously). The current TS 3.9.3 does not require the containment air locks and penetration flow paths to be closed during movement of non-irradiated fuel or irradiated fuel outside containment. Also, the last sentence in the above insert appears to conflict with the description of the fuel handling accident in the UFSAR. The UFSAR states that the potential dose calculations for the accident assume that the radioactivity released from the damaged fuel is released to the environment within a period of two hours of the accident.

APS Response:

The referenced insert for TSTF 68, Revision 2 is a reviewer's note and not intended to be included in the Bases revision.

NRC Question 5:

LCO 3.9.3 lists the air locks (item b) separate from the penetrations providing direct access to the outside (item c), the LCO 3.9.4 Required Action A.4 on 4 hours to close the penetrations providing direct access to the outside does not include the air lock that opens to the outside yard. Is this correct?

APS Response

The personnel air locks would be considered an open penetration providing direct access from the containment atmosphere to the outside atmosphere and LCO 3.9.4 required Action A.4 would apply to both personnel air locks.

NRC Question 6:

When both doors of an airlock are open, discuss what personnel are stationed at the airlock, their purpose, would these be the personnel that would close one airlock door after containment evacuation in the event of a fuel handling accident inside containment, and how would they be notified of such an event.

APS Response

APS will not be stationing personnel at the air lock. During fuel movement and core alterations, procedure 40AO-9ZZ22, "Fuel Damage" contains steps to announce the evacuation and direct personnel to implement closure of the air locks.