



Palo Verde Nuclear  
Generating Station

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102-05294-CDM/TNW/RAB  
June 17, 2005

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

Reference: Letter No. 102-05116-CDM/TNW/RAB, Dated July 9, 2004, from C. D. Mauldin, APS, to U. S. Nuclear Regulatory Commission, "Request for a License Amendment to Support Replacement of Steam Generators and Up-rated Power Operations in Units 1 and 3, and Associated Administrative Changes for Unit 2"

Dear Sirs:

**Subject: Palo Verde Nuclear Generating station (PVNGS)  
Units 1, 2 and 3, Docket Nos. STN 50-528, STN 50-529 and  
STN 50-530  
Supplement to Request for a License Amendment to Support  
Replacement of Steam Generators and Up-rated Power Operations  
Concerning Reactor Drain Tank Room Hydrogen Concentration**

In Reference 1, Arizona Public Service Company (APS) submitted a license amendment request to support steam generator replacement and up-rated power operations for PVNGS Units 1, 2 and 3. Based on a separate review of post LOCA hydrogen concentration in the containment, APS believes that Reference 1, Attachment 4, Section 9.3 requires clarification. Enclosure 2 provides the revised Section 9.3 of Reference 1 with revision bars to denote changes. This information is also applicable to Unit 2.

There are no commitments being made to the NRC in this letter.

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

Sincerely

CDM/TNW/RAB/ca

A member of the STARS (Strategic Teaming and Resource Sharing) Alliance

Callaway • Comanche Peak • Diablo Canyon • Palo Verde • South Texas Project • Wolf Creek

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Enclosures:

1. Notarized Affidavit
2. Revised Section 9.3 from Letter No. 102-05116-CDM/TNW/RAB, Dated July 9, 2004, from C. D. Mauldin, APS, to U. S. Nuclear Regulatory Commission

cc: B. S. Mallett            NRC Region IV Regional Administrator  
M. B. Fields            NRC NRR Project Manager  
G. G. Warnick          NRC Senior Resident Inspector  
A. V. Godwin            Arizona Radiation Regulatory Agency (ARRA)

ENCLOSURE 1

NOTARIZED AFFIDAVIT

STATE OF ARIZONA        )  
                                  ) ss.  
COUNTY OF MARICOPA    )

I, David Mauldin, represent that I am Vice President Nuclear Engineering and Support, 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.

*David Mauldin*  
\_\_\_\_\_  
David Mauldin

Sworn To Before Me This 17<sup>th</sup> Day Of June, 2005.

*Susie Lynn Ergish*  
\_\_\_\_\_  
Notary Public



\_\_\_\_\_  
Notary Commission Stamp

**Enclosure 2**

**Revised Section 9.3 from Letter No. 102-05116-CDM/TNW/RAB, Dated  
July 9, 2004, from C. D. Mauldin, APS, to U. S. Nuclear Regulatory Commission**

Revised Section 9.3:

Section 9.3      Loss-of-Coolant Accident Hydrogen Generation

The post-LOCA hydrogen generation analysis was performed for Unit 1 and 3 PUR. The existing containment aluminum and zinc inventories remain unchanged by PUR. The PUR post-LOCA containment temperature profile is discussed in Section 6.2.2. A core wide oxidation rate of 1.0% was used to predict the quantity of hydrogen released because of the zirconium metal water reaction as a result of implementation of ZIRLO™ cladding refer to Section 6.1. Consistent with the licensing basis, the hydrogen recombiners are assumed to be placed into service at 100 hours. The analysis concluded that the peak bound hydrogen concentration remains less than 3.99% by volume.

As discussed in UFSAR Section 6.2.5 (Reference 9-5), and as accepted by the NRC as documented in the Standard Review Plan (SRP) (Reference 9-6), under postulated LOCA conditions, the Reactor Drain Tank (RDT) room may become an essentially closed room with the only venting occurring through an annular opening in the ceiling. The potential therefore exists for the accumulation of hydrogen in the RDT subcompartment to exceed the lower flammability concentration limit.

The maximum hydrogen concentration has been analyzed in the RDT room using the same NRC reviewed methodology as the original design (Reference 9-7). The analysis shows that the hydrogen concentration could be as high as 4.5 Volume % in the RDT room, well below the increased hydrogen concentration limit of 6 volume percent discussed in Regulatory Guide 1.7. Exceeding the hydrogen concentration lower flammability limit of 4 Volume % in the RDT room is acceptable because there is no ignition source in the room and the plume exiting the roof of the room mixes quickly with containment atmosphere, reducing the concentration to below the lower flammability limit. This clarification also applies to Unit 2. The results of the analyses and the conclusions remain the same for the three units at PVNGS.