



Palo Verde Nuclear  
Generating Station

David Mauldin  
Vice President  
Nuclear Engineering  
and Support

TEL (623) 393-5553  
FAX (623) 393-6077

**10 CFR 50.90**  
Mail Station 7605  
P.O. Box 52034  
Phoenix, AZ 85072-2034

102-04877-DGM/TNW/KBG  
December 23, 2002

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

- Reference:
1. Letter, Dated June 14, 2002 from J. N. Donohew, USNRC, to G. R. Overbeck, "Palo Verde Nuclear Generating Station, Unit 2 – Request For Additional Information Regarding Power Uprate License Amendment Request (TAC No. MB3696)"
  2. Letter No. 102-04837-CDM/TNW/RAB, dated September 6, 2002, from C. D. Mauldin, APS, to U. S. Nuclear Regulatory Commission, "Response to Request for Additional Information Regarding Steam Generator Replacement and Power Uprate License Amendment Request"

Dear Sirs:

**Subject: Palo Verde Nuclear Generating Station (PVNGS)  
Unit 2, Docket No. STN 50-529  
Supplement to a Response to NRC Request for Additional Information**

Reference 2 provided responses to questions from the NRC Mechanical and Civil Engineering Branch that were provided to APS in Reference 1. After reviewing the responses, the Mechanical and Civil Engineering Branch Staff requested, during a phone call on December 12, 2002, that APS clarify the response to question 1.b. This clarification is provided in Attachment 2.

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/TNW/KBG/kg

A001

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

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

**U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Supplement to a Response to NRC Request for Additional Information  
Page 2**

**Attachments:**

- 1. Notarized Affidavit**
- 2. Additional Information for Question 1.b from Mechanical and Civil Engineering Branch**

**cc: E. W. Merschoff (NRC Region IV)  
J. N. Donohew (NRC Project Manager)  
B. Pham (NRC Project Manager)  
N. L. Salgado (NRC Resident Inspector)  
A. V. Godwin (ARRA)**

**Attachment 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 23<sup>rd</sup> Day Of December, 2002.

Karen D. Greiner  
Notary Public



---

Notary Commission Stamp

## **Attachment 2**

**Additional Information for Question 1.b from  
Mechanical and Civil Engineering Branch**

## **Mechanical and Civil Engineering Branch**

### **Additional Information for NRC Question 1.b:**

#### **NRC Question:**

**Why did the original analysis degrade the metal toughness by a factor of four, but left the weld not degraded?**

#### **APS Response:**

**At the time the Palo Verde Leak Before Break (LBB) analysis was performed, there was very limited J-R Curve fracture toughness data available for the piping materials. A representative J-R Curve for the SA-516 Grade 70 piping base material was selected for use. An arbitrary factor of four was applied to this base metal curve to provide margin for the analysis, including uncertainty in material properties. The reduction was not due to any real or postulated degradation in toughness properties for the piping materials.**

**In the more recent evaluations performed, some weld metal J-R Curves were shown to be lower than the SA-516 Grade 70 piping base material used in the original LBB analysis. However, the Replacement Steam Generators (RSGs)/Power Uprate (PUR) LBB assessment demonstrated that the lower bound of the weld metal data was still at least a factor of two higher than the reduced J-R Curve that is the basis of the original analysis. Effectively, the reduced J-R Curve used for the original LBB analysis and the RSG/PUR LBB assessment is a factor of 4 less than the lower bound of the base metal test data and a factor of two less than the lower bound of the weld metal test data. Therefore, the RSG/PUR LBB assessment demonstrated that the material property curve used in the original LBB analysis is still conservative for both the base metal and weld metal piping materials and, hence the original LBB analysis remains valid.**