



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

December 16, 2008

Mr. Randall K. Edington
Executive Vice President Nuclear/
Chief Nuclear Officer
Mail Station 7602
Arizona Public Service Company
P. O. Box 52034
Phoenix, AZ 85072-2034

**SUBJECT: PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3 –
DISCOVERY AND CORRECTION OF ERRORS IN WESTINGHOUSE
CALCULATION (TAC NOS. MD8333, MD8334, AND MD8335)**

Dear Mr. Edington:

By letter dated February 27, 2008 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML080660554), Arizona Public Service Company (APS, the licensee) notified the U.S. Nuclear Regulatory Commission (NRC) of errors and inconsistencies discovered in Westinghouse Calculation No. A-PV-FE-0148, Rev. 000 through 002, titled "PVNGS LBLOCA ECCS Performance Analysis with Revised Containment Heat Sinks Data and Zirlo™ Using 1999 EM," dated May 8, 2002 for Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, 3. The errors and inconsistencies are related to the following:

- The node number at which the Peak Cladding Temperature (PCT) occurs for the limiting local cladding case is listed as Node 14. The correct value is Node 12.
- The time of PCT for the limiting local cladding oxidation case is listed as 232 seconds. The correct value is 224 seconds.
- Inconsistencies between Table 5.1-3 and Tables 5.1-4a and 5.1-4b of the Westinghouse calculation for the maximum cladding oxidation for both the limiting local cladding oxidation case and the limiting PCT case as a result of rounding up (increased by 0.1 percent) in Table 5.1-3.
- Inconsistency in presenting the maximum total core-wide cladding oxidation for the limiting local cladding oxidation case and the limiting PCT case in Table 5.1-3 and Section 5.2 of the Westinghouse calculation. The value specified in Section 5.2 accounts for the case that yields a higher maximum total core-wide cladding oxidation than the case considered in Table 5.1-3 and is correct. The inconsistency is recognized in the calculation, but not clearly stated in Table 5.1-3.
- The maximum total core-wide cladding oxidation for the limiting local cladding oxidation case and the limiting PCT case are inconsistently reported in Tables 5.1-4a and 5.1-4b of the Westinghouse calculation with a "<" sign. It is correctly presented in Table 5.1-3.

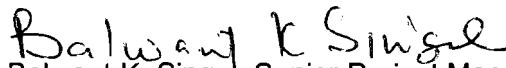
The licensee indicated that the errors affected information contained in the following documents:

- Table 2 of the Enclosure to APS letter dated May 3, 2002 (ADAMS Accession No. ML021340611)
- Table 32-1 of Attachment 2 to APS letter dated October 11, 2002 (ADAMS Accession No. ML022940385)
- Table on page 20 of the Safety Evaluation issued by NRC, dated September 29, 2003 (ADAMS Accession No. ML032720538)
- Table 6.1-1 of Attachment 4 to APS letter dated July 9, 2004 (ADAMS Accession No. ML042010289)
- Table on Page 24 of the Safety Evaluation issued by NRC, dated November 16, 2005 (ADAMS Accession No. ML053130275 (erroneously identified as ML053220229 by the licensee)
- Updated Final Safety Analysis Report (UFSAR) page 6.2-83 and Figures 6.3.3.2-6H, 6.3.3.2-6N, 6.3.3.2-6O, 6.3.3.2-6P, and 6.3.3.2-6Q

The Enclosure to the letter dated February 27, 2008, provided the discussion of the errors and inconsistencies and the affected documents. The licensee indicated that the licensee reviewed the changes to these documents and concluded that the PVNGS, Units 1, 2, and 3 Large Break Loss-of-Coolant Accident (LBLOCA) analysis meets the Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.46 acceptance criteria.

The NRC staff has reviewed the errors and inconsistencies and their impact on the affected documents detailed in the Enclosure to the licensee's letter dated February 27, 2008, and has concluded that the changes to the affected documents as a result of the errors are insignificant and do not change the staff's findings documented in safety evaluations dated September 29, 2003, and November 16, 2005, regarding replacement of steam generators and uprated power operations for PVNGS, Units 1, 2, and 3.

Sincerely,


Balwant K. Singal, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. STN 50-528, STN 50-529,
and STN 50-530

Enclosure:
As stated
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December 16, 2008

R. Edington

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/RA/

Balwant K. Singal, Senior Project Manager
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ADAMS Accession No. ML083440381

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