



A subsidiary of Pinnacle West Capital Corporation

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April 28, 2005

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

Dear Sirs:

**Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2, and 3
Docket Nos. STN 50-528/529/530
Emergency Core Cooling System (ECCS) Performance
Evaluation Models, 10 CFR 50.46(a)(3)(ii) Annual Report
For Calendar Year 2004**

Pursuant to 10 CFR 50.46(a)(3)(ii), Arizona Public Service Company (APS) has enclosed the Westinghouse Electric Company's, "Annual Report on Combustion Engineering ECCS Performance Evaluation Models for PWRs, CENPD-279, Supplement 16, March 2005." This report describes the changes and errors in Combustion Engineering models for Pressurized Water Reactors (PWRs) ECCS performance analysis in calendar year 2004. Appendix A of this report is specific to PVNGS. All other appendices of this report are plant-specific to other Combustion Engineering (CE) designed facilities and have not been included as part of this submittal.

As shown in the table on page 3 of this letter, the PVNGS large break loss of coolant accident (LBLOCA) and small break loss of coolant accident (SBLOCA) analyses used the 1999 EM and S2M evaluation models, respectively, throughout calendar year (CY) 2004. As of December 31, 2004, there were no known changes or errors that affected the PVNGS PCT calculations performed with these evaluation models. Additionally, because PCT is not calculated as part of the post loss of coolant accident (LOCA) long-term cooling (LTC) analysis, there are no changes or errors in the LTC models that affect PCT.

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No 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,


D. G. Marks for CKS

CKS/TNW/JAP

Enclosure

cc:	B. S. Mallett	NRC Region IV Regional Administrator
	M. B. Fields	NRC NRR Project Manager for PVNGS
	G. G. Warnick	NRC Senior Resident Inspector for PVNGS

**Summary of Cumulative Effects on Calculated Peak Clad Temperature (PCT) for PVNGS
 Due to Changes/Errors in ECCS Performance Evaluation Models**

PVNGS Unit	Operating Cycle	Time Period in 2004	Large Break LOCA			Small Break LOCA		
			Evaluation Model	Calculated PCT	Cumulative Effect of Changes/Errors on PCT ⁽¹⁾	Evaluation Model	Calculated PCT	Cumulative Effect of Changes/Errors on PCT ⁽¹⁾
1	11	January - April	1999 EM	2110°F	None ⁽²⁾	S2M	1618°F	None ⁽³⁾
1	12	May - December	1999 EM	2110°F	None ⁽²⁾	S2M	1618°F	None ⁽³⁾
2	12	January - December	1999 EM	2110°F	None ⁽²⁾	S2M	1618°F	None ⁽³⁾
3	11	January - November	1999 EM	2110°F	None ⁽²⁾	S2M	1618°F	None ⁽³⁾
3	12	December	1999 EM	2110°F	None ⁽²⁾	S2M	1618°F	None ⁽³⁾

Notes:

1. Pursuant to 10 CFR 50.46(a)(3)(i), this is a cumulation of the absolute magnitudes of the respective changes in Peak Clad Temperature (PCT) for each known change to and/or error in the associated ECCS performance evaluation model.
2. Supplement 14 of CENPD-279 states that STRIKIN-II computer code errors were identified and corrected in CY 2002, involving a time step algorithm and the Coffman plastic strain model. The PVNGS 1999 EM LBLOCA analysis of record, however, utilized a corrected version of STRIKIN-II. Therefore, these previously reported errors had no effect on calculated PCT for PVNGS. Additionally, Supplement 16 of CENPD-279 states that an Advanced Automated / Integrated Code System (AAICS) was implemented in CY 2004, to better automate data flow between computer codes and to ensure consistency of input between the codes. The PVNGS 1999 EM LBLOCA analysis of record, however, did not utilize the AAICS. Therefore, implementation of AAICS had no effect on calculated PCT for PVNGS. There is no previous cumulative effect on PCT for the PVNGS 1999 EM LBLOCA analyses, nor are there any relevant changes or errors identified in CY 2004.
3. Supplement 13 of CENPD-279 states that a CEFLASH-4AS computer code error was identified and corrected in CY 2001, involving calculations of leak flow rate with out-of-range subscripts. The PVNGS S2M SBLOCA analyses, however, utilized a corrected version of CEFLASH-4AS. Therefore, this previously reported error had no effect on calculated PCT for PVNGS. There is no previous cumulative effect on PCT for the PVNGS S2M SBLOCA analyses, nor are there any relevant changes or errors identified in CY 2004.