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CALVERT CLIFFS
NUCLEAR POWER PLANT

January 19, 2012

U. S. Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Document Control Desk

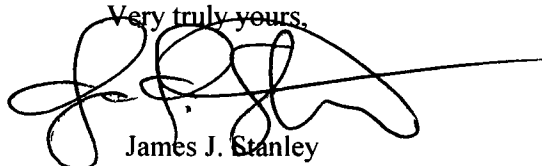
SUBJECT: Calvert Cliffs Nuclear Power Plant
Unit No. 2; Docket No. 50-318
10 CFR 50.46 30-day Report for Changes to the Emergency Core Cooling
System Performance Analysis

This letter is submitted pursuant to 10 CFR 50.46(a)(3)(ii) to provide notification of a significant change to the peak cladding temperature analysis result for the small break loss-of-coolant accident (SB LOCA) analysis. Because the effect on the peak cladding temperature of the analysis error is greater than 50°F from the temperature calculated for the limiting transient using the last acceptable model, the analysis error qualifies as significant as defined in 10 CFR 50.46(a)(3)(i) and, consequently, is provided in Attachment (1).

The results of the SB LOCA analysis conforms to the Emergency Core Cooling System acceptance criteria of 10 CFR 50.46(b). The analysis vendor, AREVA, informed Calvert Cliffs of an error in the approved methodology which results in this reportable condition on December 20, 2011. Attachment (1) contains the results of the change in the peak cladding temperature based on the analysis for Unit 2.

Should you have questions regarding this matter, please contact Mr. Douglas E. Lauver at (410) 495-5219.

Very truly yours,



James J. Stanley
Manager-Engineering Services

JJS/PSF/bjd

Attachment: (1) 10 CFR 50.46 – 30 Day Report

cc: D. V. Pickett, NRC
W. M. Dean, NRC

Resident Inspector, NRC
S. Gray, DNR

A002
NRC

ATTACHMENT (1)

10 CFR 50.46 - 30 DAY REPORT

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10 CFR 50.46 – 30 DAY REPORT

INTRODUCTION

This letter is submitted pursuant to 10 CFR 50.46(a)(3)(ii) to provide notification of a significant change to the peak cladding temperature analysis result for the small break loss-of-coolant accident (SB LOCA) analyses. Because the effect on the peak cladding temperature of the analysis error is greater than 50°F from the temperature calculated for the limiting transients using the last acceptable model, the analysis error qualifies as significant as defined in 10 CFR 50.46(a)(3)(i) and, consequently, is provided below.

SB LOCA

AREVA performed a complete SB LOCA analysis for Calvert Cliffs. The analysis was performed with the AREVA evaluation method approved in Reference 1. Subsequently, AREVA determined that an error existed in the analytical model for S-RELAP5.

Specifically, the Sleicher-Rouse heat transfer correlation is used in S-RELAP5 for predicting heat transfer to single-phase vapor. The error was the result of an incorrect translation of an ambiguous equation in the correlation. This resulted in a heat transfer enhancement between the wall and the coolant instead of the expected heat transfer degradation. Correction of this error resulted in an absolute change in peak clad temperature from the prior analysis of record of greater than 50°F. The peak clad temperature results are provided in Table 1.

Note that the Calvert Cliffs SB LOCA analysis of record has significant margin to the peak centerline temperature limit of 2200°F.

Table 1, Calvert Cliffs SB LOCA Peak Clad Temperature Analysis Results

Item	Peak Clad Temperature, °F	Delta Peak Clad Temperature, °F	
AREVA Fuel Analysis of Record	1626		March 2011
12/20/2011 error		+69	S-RELAP5 Sleicher-Rouse correlation
Total change		+69	
Total	1695		

SCHEDULE

The approved method for performing SB LOCA analyses is EMF-2328, Revision 0. AREVA is updating this topical report and expects to submit EMF-2328, Revision 0, Supplement 1 to the NRC in February 2012 with an expected NRC approval date of September 2012. The Calvert Cliffs SB LOCA could be reanalyzed following that approval with a target schedule approximately 6 months later.

REFERENCE

1. Letter from Mr. D. V. Pickett (NRC) to Mr. G. H. Gellrich (CCNPP), dated February 18, 2011, Amendment re: Transition from Westinghouse Nuclear Fuel to AREVA Nuclear Fuel (TAC Nos. ME2831 and ME2832)