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OCAN061603

June 22, 2016

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
11555 Rockville Pike  
Rockville, MD 20852

SUBJECT: Annual 10 CFR 50.46 Report for Calendar Year 2015  
Emergency Core Cooling System Evaluation Changes  
Arkansas Nuclear One – Units 1 and 2  
Docket Nos. 50-313 and 50-368  
License Nos. DPR-51 and NPF-6

Dear Sir or Madam:

10 CFR 50.46(a)(3)(ii) requires licensees to report annually each change to or error discovered in an acceptable evaluation model or in the application of such model for the emergency core cooling system (ECCS) that affects the peak cladding temperature (PCT). Entergy Operations, Inc. (Entergy) has reviewed the small and large break loss-of-coolant accident (LOCA) PCT evaluations for both Arkansas Nuclear One, Units 1 and 2 (ANO-1 and ANO-2).

AREVA identified in 2015, an ECCS model error / change that was applicable to another Babcock & Wilcox plant's LOCA analysis. The application error addressed the reactor coolant system flow rate considered in the LOCA analysis. As part of the resolution of this issue AREVA performed an extent of condition review of the ANO-1 LOCA analyses. This issue resulted in a 0 °F PCT impact and is discussed in the attachment to this letter.

No issues were identified for ANO-2 in 2015 that impacted the results reported for the calendar year 2014.

A summary / overview of the information required to be submitted each year is attached to this submittal.

This submittal fulfills the reporting requirements referenced above.

This letter contains no new regulatory commitments.

If you have any questions or require additional information, please contact me.

Sincerely,

**ORIGINAL SIGNED BY STEPHENIE L. PYLE**

SLP/rwc

Attachment: Summary / Overview of Information for Arkansas Nuclear One, Units 1 and 2  
10 CFR 50.46 Annual Report for 2015

cc: Mr. Marc L. Dapas  
Regional Administrator  
U. S. Nuclear Regulatory Commission  
Region IV  
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U. S. Nuclear Regulatory Commission  
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**Attachment to**

**OCAN061603**

**Summary / Overview of Information for  
Arkansas Nuclear One, Units 1 and 2  
10 CFR 50.46 Annual Report for 2015**

**Summary / Overview of Information for Arkansas Nuclear One, Units 1 and 2 10 CFR 50.46 Annual Report for 2015**

	<b>Analysis of Record (AOR) Peak Clad Temperature (PCT), (°F) Evaluation Model (EM) Used AOR Date</b>	<b>Adjustment as of End-of-Year (EOY) 2014, (°F)</b>	<b>Net PCT at the EOY 2014, (°F)</b>	<b>New Adjustments for Calendar Year 2015, (°F)</b>	<b>Net PCT at the EOY 2015, (°F)</b>
<b>ANO-1</b>					
<b>Small-Break Loss-of-Coolant Accident (SBLOCA)</b>	1459 RELAP5 / MOD2-B&W February 2011	None	1459 (estimated)	None (Note)	1459 (estimated)
<b>Large-Break Loss-of-Coolant Accident (LBLOCA)</b>	2008.1 RELAP5 / MOD2-B&W July 2005	None	2008.1 (estimated)	None (Note)	2008.1 (estimated)
<b>ANO-2</b>					
<b>SBLOCA</b>	2111 S2M October 2007	None	2111 (analyzed)	None	2111 (analyzed)
<b>LBLOCA</b>	2144 1999 EM January 2008	None	2144 (analyzed)	None	2144 (analyzed)

### **NOTE RELATED TO ANO-1 LOCA ANALYSES**

In 2015, AREVA identified for another Babcock & Wilcox plant that the reactor coolant system (RCS) flow rate used in that plant's Small Break Loss of Coolant Accident (SBLOCA) analysis was different than that agreed upon with the customer and the change was not reported back to the customer in the LOCA summary report. In addition, it was identified that the RCS flow rate used in the SBLOCA analysis was greater than the RCS flow rate used in the departure-from-nucleate (DNB) analysis. LOCA analyses performed using the AREVA LOCA Evaluation Model (EM) BAW-10192P-A are required to use the RCS flow rate that is used in the at-power, minimum DNB analysis. The ANO-1 LOCA EM is BAW-10192P-A.

As part of the extent of condition based on the issue above, AREVA reviewed the ANO-1 LOCA analyses to determine whether the analyses were affected by using an RCS flow rate that is either different from that agreed upon with the customer or different from that used in the at-power minimum DNB analysis.

The results of this review identified that, for ANO-1, an RCS flow rate was used for the Large Break (LB) LOCA and SBLOCA analyses that was appropriately communicated with Entergy and summarized in the LOCA summary report.

A second review of the ANO-1 LOCA analyses was performed to determine if the RCS flow rate used in the LOCA analyses is different from that used in the at-power minimum DNB analysis. The results of this review identified that only the Category 5 break size SBLOCA analysis complies with this EM requirement. For the Category 1 through 4 break size SBLOCA analysis, which is where the limiting SBLOCA break size is located, and the LBLOCA analysis, a lower RCS flow rate is used than that in the at-power minimum DNB analysis. Although the use of a lower RCS flow rate is an error in the application of the EM, a lower RCS flow rate is a conservative input as it tends to result in an earlier critical heat flux prediction. The estimated impact of using a lower RCS flow rate on the peak cladding temperature results is considered to be insignificant; therefore, an estimated peak clad temperature impact of 0 °F is assigned for the LBLOCA and SBLOCA analyses.