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OCAN061001

June 3, 2010

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

**SUBJECT:** Annual 10 CFR 50.46 Report for Calendar Year 2009  
Emergency Core Cooling System Evaluation Changes  
Docket Nos. 50-313 and 50-368  
License Nos. DPR-51 and NPF-6

**REFERENCE:** 1. Entergy Letter to the NRC, "Annual 10 CFR 50.46 Report for Calendar Year 2008 Emergency Core Cooling System Evaluation Changes," dated May 15, 2009 (OCAN050903)

2. Entergy Letter to the NRC, "10 CFR 50.46 Report – Significant Change in Peak Cladding Temperature," dated April 1, 2009 (1CAN040902)

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 that affects the peak cladding temperature (PCT). Entergy Operations, Inc. (Entergy) has reviewed the 2009 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).

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.

As noted in Reference 1, a notification of a change to the ANO-1 small break LOCA PCT of greater than 50 °F from the previous temperature calculated for the small break LOCA limiting plant transient occurred in 2009 (Reference 2). Also noted in Reference 1, further discussion of this change would be provided in this annual report. This change is discussed in the attached summary / overview.

This letter contains no new commitments.

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

Sincerely,

A handwritten signature in black ink, consisting of a large, stylized initial 'D' followed by a horizontal line that curves upwards at the end.

DBB/rwc

Attachment: Summary / Overview of Information for ANO-1 & 2 10 CFR 50.46 Annual Report for 2009

cc: Mr. Elmo E. Collins  
Regional Administrator  
U. S. Nuclear Regulatory Commission  
Region IV  
612 E. Lamar Blvd., Suite 400  
Arlington, TX 76011-4125

NRC Senior Resident Inspector  
Arkansas Nuclear One  
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U.S. Nuclear Regulatory Commission  
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**ATTACHMENT TO**

**0CAN061001**

**SUMMARY / OVERVIEW OF INFORMATION FOR  
ANO-1 & 2 10 CFR 50.46 ANNUAL REPORT FOR 2009**

**SUMMARY / OVERVIEW OF INFORMATION FOR ANO-1&2 10 CFR 50.46 ANNUAL REPORT FOR CY 2009**

	Analysis of Record (AOR) Peak Cladding Temperature (PCT), °F Evaluation Model (EM) Used AOR Date	Adjustment, °F As of End of Year (EOY) 2008	Net PCT @ EOY 2008, °F	New Adjustments for Calendar Year (CY) 2009, °F	Net PCT @ EOY 2009, °F
<b>ANO-1<sup>(1)</sup></b>					
Small Break Loss-of-Coolant Accident (SBLOCA)	1282 RELAP5/MOD2-B&W JAN 2009	N/A (Note 1)	1179.7 (Note 1)	102.3 (Note 1)	1282 (Note 1)
Large Break Loss-of-Coolant Accident (LBLOCA)	2008.1 RELAP5/MOD2-B&W AUG 2005	None	2008.1	None	2008.1
<b>ANO-2<sup>(2)</sup></b>					
SBLOCA	2111 S2M FEB 2007	N/A (Note 2)	2137 (Note 2)	Full core Next Generation Fuel (NGF) (Note 2)	2111 (Note 2)
LBLOCA	2144 1999EM FEB 2007	N/A (Note 2)	2168 (Note 2)	Full Core NGF (Note 2)	2144 (Note 2)

NOTES:

1. The ANO-1 Emergency Feedwater (EFW) wetting model utilized in the AOR SBLOCA analyses failed to consider the gap between the 15<sup>th</sup> tube support plate (TSP) and the shroud in the Enhanced Once-Through Steam Generator (EOTSG) design. The increased gap allows more EFW that is injected above the 15<sup>th</sup> TSP to run down the shroud and not wet the SG tubes. As a result of the error, the SBLOCA was reanalyzed (new AOR) and the PCT for the Mk-B-HTP SBLOCA spectrum increased 102.3 °F to 1282 °F for the limiting case. The PCT and the LHR limit for the LBLOCA were not affected by the error. This error and its impact on the SBLOCA PCT were previously reported via 1CAN040902<sup>(3)</sup>.
2. ANO-2 completed transition to Combustion Engineering 16x16 NGF fuel assemblies, with Optimized ZIRLO cladding, during its Fall 2009 refueling outage. The net PCT values for EOY 2008 are based on the previous AOR, which were performed for a full core of ZIRLO-clad fuel assemblies using the S2M and 1999EM EMs for SBLOCA and LBLOCA, respectively. With completion of the transition to NGF / Optimized ZIRLO fuel, the ZIRLO fuel PCTs are no longer applicable to ANO-2 and the analyses associated with the NGF fuel performed in 2007 become the new AOR.

REFERENCES:

1. PWROG letter OG-10-171 dated May 13, 2010
2. Westinghouse letter LTR-LAM-10-11 dated February 23, 2010
3. Entergy letter 1CAN040902 dated April 1, 2009