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10 CFR 50.46

OCAN061901

June 4, 2019

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

Subject: Annual 10 CFR 50.46 Report for Calendar Year 2018
Emergency Core Cooling System Evaluation Changes

Arkansas Nuclear One, Units 1 and 2
NRC Docket Nos. 50-313, 50-368, and 72-13
Renewed Facility Operating License Nos. DPR-51 and NPF-6

Reference: Entergy Operations, Inc. letter to U. S. Nuclear Regulatory Commission,
Commission (NRC), "Annual 10 CFR 50.46 Report for Calendar year 2017
Emergency Core Cooling System Evaluation Changes," dated June 5, 2018
(ADAMS Accession No. ML18156A313)

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 Arkansas Nuclear One, Units 1 and 2 (ANO-1 and ANO-2).

No issues were identified for ANO-1 or ANO-2 in 2018 that impacted the results reported for the calendar year 2017 referenced above.

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 concerning this submittal, please contact Mr. Timothy Arnold at 479-858-7826.

Sincerely,

ORIGINAL SIGNED BY TIMOTHY L. ARNOLD

TLA/rwc

Enclosure: Summary / Overview of Information for Arkansas Nuclear One, Units 1 and 2
10 CFR 50.46 Annual Report for 2018

cc: Mr. Scott A. Morris
Regional Administrator
U. S. Nuclear Regulatory Commission
Region-IV
1600 East Lamar Boulevard
Arlington, TX 76011-4511

NRC Senior Resident Inspector
Arkansas Nuclear One
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U. S. Nuclear Regulatory Commission
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Enclosure

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**Summary / Overview of Information for
Arkansas Nuclear One, Units 1 and 2
10 CFR 50.46 Annual Report for 2018**

Summary / Overview of Information for Arkansas Nuclear One, Units 1 and 2 10 CFR 50.46 Annual Report for 2018

	Analysis of Record (AOR) Peak Clad Temperature (PCT), (°F) Evaluation Model (EM) Used AOR Date	Adjustment as of End-of-Year (EOY) 2017, (°F)	Net PCT at the EOY 2017, (°F)	New Adjustments for Calendar Year 2018, (°F)	Net PCT at the EOY 2018, (°F)
ANO-1					
Small-Break Loss-of-Coolant Accident (SBLOCA)	1459 RELAP5 / MOD2-B&W February 2011	None	1459 (estimated)	None	1459 (estimated)
Large-Break Loss-of-Coolant Accident (LBLOCA)	2008.1 RELAP5 / MOD2-B&W July 2005 (Note 1)	None	2008.1 (estimated)	None	2008.1 (estimated)
ANO-2					
SBLOCA	2111 S2M October 2007	None	2111 (analyzed)	None	2111 (analyzed)
LBLOCA	2144 1999 EM January 2008	None	2144 (analyzed)	None	2144 (analyzed)

Notes:

1. Framatome has completed a new ANO-1 LBLOCA analysis in accordance with NRC-approved methodology to address thermal conductivity degradation^(1,2). The analysis was completed in September 2018⁽³⁾ and formally transmitted to ANO in January 2019⁽⁴⁾, and it entered ANO-1's design and licensing basis in February 2019. The results of this analysis depict a 17° F reduction in PCT, leaving 1991° F (analyzed)⁽⁵⁾. Due to the timing, these results are not captured in the above table and will appear in next 10 CFR 50.46 Annual Report for ANO.

References:

1. Framatome Topical Report BAW-10192PA-00, "BWNT LOCA – BWNT Loss-of-Coolant Accident Evaluation Model for Once-Through Steam Generator Plants."
2. Framatome Topical Report BAW-10192PA-00_Supplement_1PA-000, "BWNT LOCA – BWNT Loss-of-Coolant Accident Evaluation Model for Once-Through Steam Generator Plants."
3. Framatome Document FS1-0039424, Revision 1.0, "ANO-1 LBLOCA Summary Report", September 2018.
4. Framatome Letter FS1-0041794, Revision 1.0, "Transmittal of Framatome Fuel Thermal Conductivity Degradation LBLOCA Analyses for Potential PCT Reporting under 10 CFR 50.46", dated January 16, 2019.
5. Framatome Letter FS1-0043205-1.0, "Transmittal of Input for ANO-1 50.46 Report for 2018", dated March 26, 2019.