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Chris M. Adner
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JAFP-13-0096
August 1, 2013

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

Subject: 10 CFR 50.46 Annual Report – Changes and Errors in Emergency Core Cooling System Evaluation Models

James A FitzPatrick Nuclear Power Plant
Docket No. 50-333
License No. DPR-059

Reference: Entergy Nuclear Operations, Inc. to USNRC, JAFP-12-0089, dated August 1, 2012, 10 CFR 50.46 Annual Report – Changes and Errors in Emergency Core Cooling System Evaluation Models.

Dear Sir or Madam:

The attached report summarizes changes and errors in emergency core cooling system (ECCS) evaluation models in accordance with 10 CFR 50.46(a)(3)(ii) for the period August 1, 2012 to July 31, 2013 for Entergy's James A. FitzPatrick Nuclear Power Plant (JAF). There have been no changes to the Loss of Coolant Accident (LOCA) Peak Cladding Temperatures (PCTs) since the publication of Reference 1.

This letter contains no new commitments. Should you have any questions, please contact me at (315) 349-6766.

Sincerely,

A handwritten signature in black ink that reads "Chris M. Adner".

Chris M. Adner
Licensing Manager

CMA/ks/mh
cc: next page

Attachment 1: 10 CFR 50.46(a)(3)(ii) Annual Report on Changes and Errors in Emergency
Core Cooling System (ECCS) Evaluation Models for the period from August 1,
2012 to July 31, 2013

cc:

Mr. William Dean
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JAFP-13-0096

ATTACHMENT 1

10 CFR 50.46(a)(3)(ii) Annual Report on Changes and Errors in Emergency Core Cooling System (ECCS) Evaluation Models for the period from August 1, 2012 to July 31, 2013

(2 Pages)

10 CFR 50.46(a)(3)(ii) Annual Report on Changes and Errors in Emergency Core Cooling System (ECCS) Evaluation Models for the period from August 1, 2012 to July 31, 2013

INTRODUCTION

This report summarizes changes and errors in emergency core cooling system (ECCS) evaluation models in accordance with 10 CFR 50.46(a)(3)(ii) for the period August 1, 2012 to July 31, 2013 for Entergy’s James A. FitzPatrick Nuclear Power Plant.

Since the last reporting update (Reference 5), FitzPatrick has been subject to a change that utilizes the NRC approved procedure (Reference 7) to estimate the magnitude of the change in Peak Cladding Temperature (PCT) due to the change in fuel properties from GESTR to PRIME. Applying this estimated change in Licensing Basis PCT constitutes interim implementation of the PRIME fuel properties as it pertains to the analysis basis Evaluation Model for the plant, pending a plant ECCS-LOCA re-analysis explicitly using PRIME.

The JAF core is uniformly loaded with the GNF2 fuel type. The GNF2 fuel type, with the Licensing Basis PCT ≤ 1890°F, is well below the 2200°F a peak cladding temperature acceptance criterion of 10 CFR 50.46.

Table 1 summarizes the current FitzPatrick Emergency Core Cooling System (ECCS) evaluation models.

TABLE 1 - ACCOUNTING OF LICENSING BASIS PEAK CLAD TEMPERATURES FOR FITZPATRICK

Report Period	Notification Nature of PCT Change in ECCS Evaluation	GNF2 Fuel⁽¹⁾	
		Estimated PCT Impact	Licensing Basis PCT
Prior Reporting Period (Ref. 5)	Cycle 19 Core Load Using GNF2 Type Fuel, (Ref. 1, 2)	n/a	1800°F
	2011-02 , Impact of Database Error for Heat Deposition on the Peak Cladding Temperature (PCT) for 10 X 10 Fuel Bundles (Ref. 3)	45°F	1845°F
	2011-03 , Impact of Updated Formulation for Gamma Heat Deposition to Channel Wall for 9 X 9 and 10 X 10 Fuel Bundles, (Ref. 4)	5°F	1850°F
Cumulative sum of absolute magnitude of errors prior to this reporting period		50°F	
August 1, 2012 – July 31, 2013	2012-01 , Change in an acceptable evaluation model or application of such model due to PRIME Fuel Properties Implementation for Fuel Rod T/M Performance, replacing GESTR Fuel Properties (Ref. 6)	40°F	1890°F
Cumulative sum of absolute magnitude of errors in this reporting period		40°F	
Cumulative sum of absolute magnitude of errors including this reporting period		90°F	

NOTE: (1) GNF2 fuel was first installed during Refueling Outage 18, October 2008

10 CFR 50.46(a)(3)(ii) Annual Report on Changes and Errors in Emergency Core Cooling System (ECCS) Evaluation Models for the period from August 1, 2012 to July 31, 2013

REFERENCES

1. General Electric Nuclear Energy, "James A. FitzPatrick Nuclear Power Plant SAFER/GESTER-LOCA, Loss-of-Coolant Analysis," Licensing Topical Report NEDC-31317P, Class III (proprietary), Revision 2, April 1993.
2. GE Report, "James A. FitzPatrick Nuclear Power Plant GNF2 ECCS-LOCA Evaluation", 0000-0076-4111-R0, August 2008 (Proprietary) (internal report #JAF-RPT-08-00014 R0)
3. General Electric 10 CFR 50.46 Notification Letter 2011-02, dated July 20, 2011 regarding "Impact of Database Error for Heat Deposition on the Peak Cladding Temperature (PCT) for 10 X 10 Fuel Bundles." (Proprietary)
4. General Electric 10 CFR 50.46 Notification Letter 2011-03, dated July 20, 2011 regarding "Impact of Updated Formulation for Gamma Heat Deposition to Channel Wall for 9 X 9 and 10 X 10 Fuel Bundles." (Proprietary)
5. Entergy Nuclear Operations, Inc. letter to USNRC, JAFP-12-0089, dated August 1, 2012, "10 CFR 50.46 Annual Report – Changes and Errors in Emergency Core Cooling System (ECCS) Evaluation Models."
6. General Electric 10 CFR 50.46 Notification Letter 2012-01, dated November 29, 2012 regarding "PRIME Fuel Properties Implementation for Fuel Rod T/M Performance, replacing GESTR Fuel Properties." (Proprietary)(letter LRW-ENO-GEN-12-131)
7. Implementation of PRIME Models and Data in Downstream Methods, NEDO-33173 Supplement 4-A, Revision 1, November 2012.