Entergy Operations, Inc.
River Bend Station
5485 U.S. Highway 61N
St. Francisville, LA 70775
Tel 225-381-4177

Timothy A. Schenk
Manager, Regulatory Assurance

RBG-48112

September 16, 2021

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

Subject: Report of Changes and Errors to 10CFR50.46

River Bend Station - Unit 1
NRC Docket No. 50-458
Renewed Facility Operating License No. NPF-47

Reference: Letter RBG-48039, "Report of Changes and Errors to 10CFR50.46" dated September 16, 2020

There have been five notices of changes or errors associated with the River Bend Station (RBS) Emergency Core Cooling Systems (ECCS) analysis since the last 10CFR50.46 report provided to the NRC as documented in the reference of this letter. The Table on Page 2 of this letter summarizes the effects on the current ECCS analysis performed by General Electric – Hitachi Nuclear Energy (GEH) for GNF2 bundles using their NRC approved SAFER/GESTR ECCS Loss of Coolant Accident (LOCA) methodology supplemented by implementation of the PRIME model per 10CFR50.46 Notification Letter 2012-01. The ECCS-LOCA GNF3 analysis is based on the SAFER/PRIME ECCS-LOCA methodology.

Since the last 10 CFR 50.46 report provided to the NRC, RBS is currently in Cycle 22 with the RBS core composed of the GNF2 and GNF3 fuel types. The GNF3 fuel loaded for Cycle 22 is the limiting fuel type with a peak cladding temperature (PCT) of 1850ºF. The PCT for the GNF3 fuel remains well below the 2200ºF acceptance criteria of 10 CFR 50.46.

NL-2020-02 identified an error with a +65ºF estimated impact for GNF2 fuel bundles. This error did not impact the limiting fuel type GNF3 and did not result in GNF2 becoming the limiting fuel type used in the limiting transient. NL-2020-04 identified an error with a +5 ºF estimated impact for GNF3 fuel bundles. The PCT impact for GNF3 fuel increased to 1855 ºF. The PCT impact remains below the acceptance criterion mentioned above. There were no PCT impacts to GNF2 or GNF3 fuel bundles reported in NL-2020-05, NL-2021-01 and NL-2021-02.

Notification Letter	Nature Of Change / Error	Estimated PCT Effect (ºF)	
		GNF2	GNF3
Previous Periods			
NL-2021-02	Discrepancy in Inner Cladding Surface Roughness	0	0
NL-2021-01	Error in Fuel Pellet to Spring Conductance	0	0
NL-2020-05	Error in Dynamic Gap Conductance Calculation in TASC	N/A	0
NL-2020-04	Incorrect fuel lattice elevation selected to generate SAFER inputs	N/A	+5
NL-2020-02	SAFER04A E4 Revision – Inadequate assessment for previously reported error in downcomer subcooled / saturated water boundary	+65	N/A
NL-2020-01	PRIME coding errors for zircaloy irradiation growth and zirconium barrier thermal conductivity	0	N/A
NL-2019-05	Bypass leakage modeling for control rod guide tube to control rod guide housing interface	0	0
NL-2017-02	Fuel rod plenum temperature modeling update, 10x10 geometry and getter removal	0	N/A
Nl-2017-01	GNF2 Lower Tie Plate-Finger Spring Removal and Bypass Flow Hole Change	0	N/A
NL-2014-04	SAFER04A E4 – Bundle / Lower Plenum CCFL Head	0	N/A
NL-2014-03	SAFER04A E4 – Minimum Core DP Model	-15	N/A
NL-2014-02	SAFER04A E4 – Mass Non-Conservatism	0	N/A
NL-2014-01	SAFER04A E4 – Maintenance Update Changes	0	N/A
NL-2012-01	PRIME Fuel Properties Implementation for Fuel Rod T/M Performance, replacing GESTR Fuel Properties	+45	N/A
NL-2011-03	Impact of updated formulation for gamma heat deposition to channel wall for 9x9 and 10x10 fuel bundles	-40	N/A
NL-2011-02	Impact of database error for heat deposition on the Peak Cladding Temperature (PCT) for 10x10 fuel bundles	+25	N/A
Net of errors / changes		+80	+5
Sum of absolute magnitude of changes / errors		190	5

This letter does not contain any commitments.

If you have any questions or require additional information, please contact Mr. Tim Schenk at (225) 381-4177 or tschenk@entergy.com.

Respectfully,

Tim Schenk

Digitally signed by Tim Schenk
DN: cn=Tim Schenk, c=US, o=River Bend Station, ou=Manager Regulatory Assurance, email=tschenk@entergy.com
Date: 2021.09.16 08:21:33 -05'00'

Tim Schenk

TAS/baj

cc: NRC Regional Administrator - Region IV
NRC Project Manager - River Bend Station
NRC Senior Resident Inspector - River Bend Station