

RBG-48198

10CFR50.46

September 22, 2022

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-48112, "Report of Changes and Errors to 10CFR50.46"
dated September 16, 2021

There has been one notice 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 1855°F. The PCT for the GNF3 fuel remains well below the 2200°F acceptance criteria of 10 CFR 50.46.

Information reported in NL-2021-07 identified an error with GNF3 fuel bundles. This error did not have a PCT impact on the limiting fuel type. There is no change to the PCT for GNF3 fuel due to this notification letter and remains at 1855 °F.

Notification Letter	Nature Of Change / Error	Estimated PCT Effect (°F)	
		GNF2	GNF3
Previous Periods			
NL-2021-07	Incorrect Recirculation Piping Inside Diameter	N/A	0
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
NI-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

TAS/baj

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