



March 6, 2024
NOC-AE-24004018
10 CFR 50.46(a)(3)(i)
10 CFR 50.46(a)(3)(ii)
STI: 35561165

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

South Texas Project
Unit 2
Docket No. STN 50-499
10 CFR 50.46 Thirty-Day Report of Significant ECCS Model Changes

In accordance with the requirements of 10 CFR 50.46(a)(3)(ii), STP Nuclear Operating Company (STPNOC) is submitting a 30-day report for a significant change in the South Texas Unit 2 Emergency Core Cooling System Model.

For Unit 2 Cycle 24, there is a large break loss-of-coolant-accident (LBLOCA) Peak Clad Temperature (PCT) penalty of 17°F due to the gamma energy deposition model (GEDM). The total PCT for Unit 2 LBLOCA is 2140°F. See the Enclosure for the detailed PCT Summary.

Since the absolute value of the PCT changes from the analysis of record for Unit 2 Cycle 24, exceeds 50°F, the change is considered significant in accordance with 10 CFR 50.46(a)(3)(i). No schedule for reanalysis is proposed since the Unit 2 Cycle 24 PCT remains below the 10 CFR 50.46(b)(1) limit of 2200°F.

There are no commitments in this letter.

If there are any questions regarding this information, please contact Zachary Dibbern at 361-972-4336 or me at 361-972-7806.

Christopher Georgeson
General Manager, Engineering

Enclosure: Evaluation of the South Texas Project Unit 2 Cycle 24 LOCA RSAC GEDM Violation

cc:

Regional Administrator, Region IV
U.S. Nuclear Regulatory Commission
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EVALUATION OF THE SOUTH TEXAS PROJECT UNIT 2 CYCLE 24 LOCA RSAC GEDM VIOLATION

Background

The South Texas Project Unit 2 Cycle 24 reload core design resulted in a violation of the gamma energy deposition model (GEDM) loss-of-coolant accident (LOCA) reload safety analysis checklist (RSAC) limit used in the large-break LOCA analysis. This violation was evaluated for South Texas Project Unit 2 Cycle 24 and represents a change in a plant configuration or associated set point(s), distinguished from an evaluation model change in Section 4 of WCAP-13451.

Affected Evaluation Models(s)

1981 Westinghouse Large Break LOCA Evaluation Model with BASH

Estimated Effect

The impact of the Cycle 24 GEDM violation was estimated to result in a 17°F increase to the calculated large-break LOCA peak cladding temperature (PCT) for South Texas Project Unit 2.

Westinghouse LOCA Peak Clad Temperature Summary

Plant Name:	SOUTH TEXAS 2
Utility Name:	STPNOC
EM:	BASH
AOR Description:	Appendix K Large Break
Summary Sheet Status	Cycle 24

ANALYSIS-OF-RECORD	PCT (°F)
	2090
ASSESSMENTS	Delta PCT (°ΔF)
1. IMP Database Error Corrections	0
2. PAD Version 4.0 Implementation	-30
3. LOCBART Pellet Volumetric Heat Generation Rate	6
4. PWROG TCD Evaluation - Rebaseline of AOR	5
5. PWROG TCD Evaluation - Effect of TCD and Assembly Power/Peaking Factor Burndown	0
6. Effect of Containment Purge	6
7. Rebaseline of AOR	46
8. GEDM Violation Evaluation (Cycle 24)	17
AOR + ASSESSMENTS	PCT = 2140 °F