



South Texas Project Electric Generating Station P.O. Box 289 Wadsworth, Texas 77483

June 17, 2020
NOC-AE-20003738
10 CFR 50.46 (a)(3)(i)
10 CFR 50.46 (a)(3)(ii)
STI: 35026398

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

South Texas Project
Unit 1
Docket No. STN 50-498
10 CFR 50.46 Thirty-Day Report of Significant ECCS Model Changes

References:

1. Letter from M. Page to NRC Document Control Desk; "South Texas Project Units 1 & 2 10 CFR 50.46 Annual Report of ECCS Model Revisions"; March 4, 2019; NOC-AE-19003627; ML19063D875.
2. Letter from M. Schaefer to NRC Document Control Desk; "Unit 1 License Amendment Request Under Exigent Circumstances for One-Time Revision To Technical Specification 3.5.1 to Reduce Minimum Allowed Accumulator Pressures"; May 13, 2020; NOC-AE-20003734; ML20134K758.
3. Letter from Dennis J. Galvin (NRC) to G.T. Powell; "South Texas Project, Unit 1 - Issuance of Amendment No. 219 to Revise Technical Specifications to Reduce Safety Injection Accumulators Minimum Pressures (Exigent Circumstances) (EPID L-2020-LLA-0108)"; May 28, 2020; ML20141L612.

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 1 Emergency Core Cooling Model.

For Unit 1 Cycle 23, the minimum nitrogen cover-pressure limit of all three Safety Injection Accumulators has been changed from 590 psig to 500 psig as stated in Reference 2. The change made in Reference 2 resulted in an estimated 3°F increase in Peak Clad Temperature (PCT) to the previous value of 2123°F as reported in Reference 1 for the limiting Emergency Core Cooling System (ECCS) analysis for the large break loss-of-coolant-accident (LBLOCA). The new PCT value for Unit 1 Cycle 23 is 2126°F as stated in Reference 3. Since the absolute value of the PCT changes from the analysis of record for Unit 1 Cycle 23 exceeds 50°F, the change is considered significant in accordance with 10CFR50.46(a)(3)(i). No schedule for reanalysis is proposed, since the Unit 1 Cycle 23 PCT remains below the 10CFR50.46(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 361-972-7743.

A handwritten signature in black ink, appearing to read "R. Dunn".

Roland Dunn
General Manager, Engineering

ZD

Enclosure: Unit 1 Cycle 23 PCT Assessment of a Reduced Minimum Accumulator Cover Gas Pressure

cc:

Regional Administrator, Region IV
U.S. Nuclear Regulatory Commission
1600 E. Lamar Boulevard
Arlington, TX 76011-4511

Unit 1 Cycle 23 PCT Assessment of a Reduced Minimum Accumulator Cover Gas Pressure

Background

South Texas Project Unit 1 has reduced the Technical Specification minimum accumulator cover gas pressure to 500 psig for Cycle 23, to mitigate the effects of check valve leakage into the Low Head Safety Injection / Residual Heat Removal Header. The change was approved by the NRC in Reference 3. Evaluations were performed to estimate the effect of this change on the large break loss-of-coolant accident (LBLOCA) and small break LOCA (SBLOCA) analyses of record (AORs). This item represents a change in plant configuration, distinguished from an evaluation model change in Section 4 of WCAP-13451.

Affected Evaluation Model(s)

1981 Westinghouse Large Break LOCA Evaluation Model with BASH
1985 Westinghouse Small Break LOCA Evaluation Model with NOTRUMP

Estimated Effect(s)

A qualitative LBLOCA evaluation concluded that the effect of the reduced accumulator cover gas pressure on the South Texas Unit 1 LBLOCA AOR would be minor and mainly limited to small timing changes due to the delay in the accumulator injection. An estimate of the effect for this change was determined by rerunning the limiting Peak Clad Temperature (PCT) case using the reduced accumulator cover gas pressure minus uncertainties (489.7 psia), leading to an estimated PCT increase of 3°F.

A qualitative SBLOCA evaluation concluded that the effect of the reduced accumulator cover gas pressure on the South Texas Unit 1 SBLOCA AOR, will have a negligible impact on the SBLOCA transient analysis, leading to an estimated PCT impact of 0°F.

Westinghouse LOCA Peak Clad Temperature Summary

Plant Name:	SOUTH TEXAS 1
Utility Name:	STPNOC
EM:	BASH
AOR Description:	Appendix K Large Break
Summary Sheet Status	Cycle 23

ANALYSIS-OF-RECORD	PCT (°F) 2090
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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. Evaluation of a Reduced Minimum Accumulator Cover Gas Pressure (Cycle 23)	3
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AOR + ASSESSMENTS	PCT = 2126 °F