



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

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

South Texas Project
Units 1 & 2
Docket Nos. STN 50-498, STN 50-499
10CFR50.46 Annual Report of ECCS Model Revisions

References: 1) Letter from D. A. Leazar to NRC Document Control Desk, "10CFR50.46 Annual Report of ECCS Model Revisions and 30 Day Report of Significant ECCS Model Changes," dated December 13, 2000 (NOC-AE-000980).

Pursuant to 10CFR50.46(a)(3)(ii), the South Texas Project (STP) submits this annual report concerning revisions to the accepted Emergency Core Cooling System (ECCS) evaluation model at STP Units 1 and 2. During 2001, a single Peak Cladding Temperature (PCT) assessment was applied to address errors in the shared Unit 1 / Unit 2 Large Break LOCA evaluation model. A Unit 2 Cycle 9 specific PCT assessment was applied to address a reload safety analysis limit violation. The sum of the absolute values of the Large Break LOCA evaluation model PCT assessments is less than 50°F. The Large Break LOCA evaluation model assessments, therefore, do not constitute a significant change as defined in 10CFR 50.46.

No PCT assessments were applied to the unit-specific Small Break LOCA evaluation models.

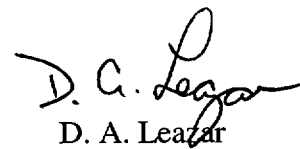
During 2001, the Large Break LOCA PCT increased from 2169°F (Ref. 1) to 2175°F. The 6°F increase is the result of a PCT penalty, developed by Westinghouse, to address errors in the expressions used to evaluate radiation heat exchange between the rod, grid, and fluid during the reflood phase of the transient. The LBLOCA PCT penalty was developed through representative plant calculations. A schedule for reanalysis is not provided for the Large Break LOCA analysis since the revised PCT remains below the regulatory limit and the value of the PCT change is less than 50°F.

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A second, 3 °F, Large Break LOCA PCT assessment was applied for Unit 2 Cycle 9 to address a cycle-specific violation of limits associated with the PCT benefit developed in 2000 for reduced Gamma Energy Deposition Model (GEDM) factors. A cycle-specific calculation was performed by Westinghouse to determine the PCT impact of the necessary GEDM factor increases. As a result of the PCT assessment, the Unit 2 Cycle 9 Large Break LOCA PCT increased from 2175°F to 2178°F.

The acceptance criteria for all models continue to be satisfied. Attachment 1 provides the current ECCS evaluation model PCT rack-ups. Attachment 2 provides a detailed description of the ECCS evaluation model changes that impacted the calculated PCT in 2001.

If you should have any questions concerning this matter, please contact Mr. Charles R. Albury at (361) 972-8901 or me at (361) 972-7795.



D. A. Leazar

Director

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Attachments

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ATTACHMENT 1

2001 YEAR END PCT RACK-UPS

Unit 1 and Unit 2 Large Break LOCA:

2000 Year End Large Break LOCA PCT (Reference 1)	2169 °F
LOCBART Cladding Emissivity Errors (Unit 1 and Unit 2)	+ 6 °F
Reduction in the PCT Benefit Associated with Reduced Gamma Energy Deposition Model (GEDM) Factors for Unit 2 Cycle 9	+ 3 °F
Revised Year End Large Break LOCA PCT (Unit 1 / Unit 2)	2175 °F / 2178 °F

Unit 1 Small Break LOCA:

Unit 1 Small Break LOCA PCT (Reference 1)	1578 °F
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Unit 2 Small Break LOCA:

Unit 2 Small Break LOCA PCT (Reference 1)	1951 °F
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ATTACHMENT 2

2001 PCT ASSESSMENTS

LOCBART Cladding Emissivity Errors

The cladding surface emissivity values used in the equations which model radiation heat exchange between the rod, grid, and the fluid during the reflood phase of the transient were determined to be lower than that which would be expected during the reflood phase of a LBLOCA. Representative plant calculations were used to evaluate the impact of the errors on the calculated LBLOCA PCT. For the South Texas Project, a 6°F penalty has been applied to conservatively bound the effect of the errors.

Reduction in the PCT Benefit Associated with Reduced Gamma Energy Deposition Model (GEDM) Factors for Unit 2 Cycle 9

During 2000, Westinghouse reduced the GEDM factors assumed in the Large Break LOCA analysis. The use of reduced GEDM factors resulted in a 20°F Large Break LOCA PCT benefit (Reference 1). As documented in Reference 1, the reduced GEDM factors are verified for each cycle through the reload safety analysis process. For Unit 2 Cycle 9, the reload core design could not support the reduced GEDM factors. Westinghouse performed a cycle-specific evaluation to account for the required GEDM factor increase. The increase resulted in a reduction of the previously reported benefit from 20 °F to 17°F for Unit 2 Cycle 9.