

The Light company

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January 27, 1987

ST-HL-AE-1894

File No.: G9.06

10CFR50.36

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

South Texas Project
Unit 1

Docket No. STN 50-498

Draft Revision 2 Technical Specifications (Tech Specs)

Please refer to our January 13, 1987 letter which transmitted proposed Tech Spec changes based upon the results of the Boron Dilution Safety Analysis Methodology. During the week of January 12, 1987, a presentation of the proposed changes was made to Messrs. B. Perch and M. Dunnefeld of your Staff. As a result of this discussion and presentation, it was identified that a reference to the methodology for the Boron Dilution Analysis would be included in Specification 6.9.1.6.

As such, the following discussion and the attached marked up copy of the proposed Specification 6.9.1.6 are provided for your information and use:

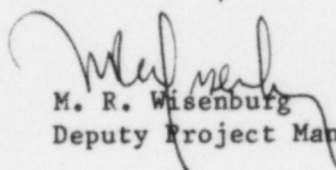
The analysis methodology employed for the South Texas Project FSAR boron dilution safety analysis is the same as that employed in the Comanche Peak FSAR boron dilution safety analysis. This methodology was presented to the NRC during the licensing process for Comanche Peak and was approved for Comanche Peak as documented in NUREG-0797 (Comanche Peak's Safety Evaluation Report) Section 15.2.3.1. Variations in the approach taken in the analysis between Comanche Peak and South Texas are delineated in the subsequent paragraphs.

For Comanche Peak, the analysis is based on the solution of a differential equation with inputs of volume, dilution flowrate, boron worth and minimum plant shutdown margin to obtain the time from alarm to the loss of plant shutdown margin. The solution technique for South Texas employs the same differential equation with inputs of volume, dilution flowrate, boron worth and minimum time allowed (the acceptance criterion) from alarm to the loss of plant shutdown margin. The solution, at South Texas, to the same differential equation used at Comanche Peak is the minimum plant shutdown margin such that the acceptance criterion is satisfied.

In order to satisfy the acceptance criterion in Modes 3, 4 and 5, Comanche Peak utilizes a safety-grade microprocessor which continuously monitors the neutron count rate, comparing it to prior values of the count rate. An automatic mitigation sequence is actuated to prevent a loss of plant shutdown margin following an alarm from the microprocessor. Since more time is required to mitigate a boron dilution event without the presence of an automatic system such as that employed at Comanche Peak, the Technical Specifications minimum allowable shutdown margin requirement may increase to meet the safety analysis acceptance criterion. South Texas satisfies the acceptance criterion in Modes 3, 4 and 5 via a set of curves defining the minimum shutdown margin versus boron concentration. Maintaining the plant shutdown margin at a value greater than that defined by the curves satisfies the acceptance criterion for the minimum time available prior to a loss of plant shutdown margin.

The analysis methodology as applied to South Texas Project is summarized in Appendix D of the Final Report of the Probabilistic Boron Dilution Analysis submitted in September 1986. The above referenced curves defining regional areas for acceptable shutdown margin will be provided in the STP Cycle Specific Core Data Report as delineated in Specification 6.9.1.6.

If you should have any questions on this matter, please contact Ms F. A. White at (512) 972-7985.


M. R. Wisenburg
Deputy Project Manager

FAW/ljm

Attachment

cc:

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Revised 1/2/87

INSERT C

STP CYCLE SPECIFIC CORE DATA REPORT

6.9.1.6 The F_{xy} limits for RATED THERMAL POWER (F_{xy}^{RTP}) and the minimum SHUTDOWN MARGIN requirements based on boron dilution accident analysis shall be established for at least each reload core and shall be maintained available in the Control Room. The limits shall be established and implemented on a time scale consistent with normal procedural changes.

The analytical methods used to generate the F_{xy} limits and the SHUTDOWN MARGIN requirements based on boron dilution accident analysis shall be those previously approved by the NRC*. If changes to these methods are deemed necessary, they will be evaluated in accordance with 10CFR50.59 and submitted to the NRC for review and approval prior to their use if the changes are determined to involve an unreviewed safety question or if such a change would require amendment of previously submitted documentation.

A report containing the F_{xy} limits for all core planes containing Bank "D" control rods and all unrodded core planes and the plot of predicted ($F_q^T \cdot P_{Rel}$) vs Axial Core Height with the limit envelope and the minimum SHUTDOWN MARGIN requirements based on boron dilution accident analysis shall be provided to the NRC Document Control desk with copies to the Regional Administrator and the Resident Inspector within 30 days of their implementation.

INSERT D

- * WCAP 8385, "Power Distribution Control and Load Follow Procedures", WCAP 9272.A, "Westinghouse Reload Safety Evaluation Methodology" and (~~Boron Dilution Reference to be provided LATER~~). Nureg-0797, SECTION 15.2.3.1 "Safety Evaluation for Comanche Peak" as discussed in the January 23, 1987 letter (ST-HL-AE-1894).

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ADMINISTRATIVE CONTROLSRADIAL PEAKING FACTOR LIMIT REPORT~~See INSERT C~~

~~6.9.1.6 The F_{xy} limits for RATED THERMAL POWER (F_{xy}^{RTP}) shall be provided to the NRC Regional Administrator with a copy to Director of Nuclear Reactor Regulation, Attention: Chief, Reactor Systems Branch, DPL-A, U.S. Nuclear Regulatory Commission, Washington, D. C. 20555, for all core planes containing Bank "D" control rods and all unrodded core planes and the plot of predicted ($F_q^T \cdot P_{Rel}$) vs Axial Core Height with the limit envelope at least 60 days prior to each cycle initial criticality unless otherwise approved by the Commission by letter. In addition, in the event that the limit should change requiring a new substantial or an amended submittal to the Radial Peaking Factor Limit Report, it will be submitted 60 days prior to the date the limit would become effective unless otherwise approved by the Commission by letter. Any information needed to support F_{xy}^{RTP} will be by request from the NRC and need not be included in this report.~~

SPECIAL REPORTS

6.9.2 Special reports shall be submitted to the Regional Administrator of the Regional Office of the NRC within the time period specified for each report.

6.10 RECORD RETENTION

6.10.1 In addition to the applicable record retention requirements of Title 10, Code of Federal Regulations, the following records shall be retained for at least the minimum period indicated.

6.10.2 The following records shall be retained for at least 5 years:

- a. Records and logs of unit operation covering time interval at each power level;
- b. Records and logs of principal maintenance activities, inspections, repair, and replacement of principal items of equipment related to nuclear safety;
- c. ALL REPORTABLE EVENTS;
- d. Records of surveillance activities, inspections, and calibrations required by these Technical Specifications;
- e. Records of changes made to the procedures required by Specification 6.8.1;
- f. Records of radioactive shipments;
- g. Records of sealed source and fission detector leak tests and results; and
- h. Records of annual physical inventory of all sealed source material of record.