



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

March 4, 2002
NOC-AE-02001282
File No.: G25
10CFR50.90
STI:31413746

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

South Texas Project
Units 1 & 2
Docket Nos. STN 50-498, STN 50-499
Additional Information to Support the Request for Approval
of Power Uprate and a Revision to the Technical Specifications

Reference: Letter from J. J. Sheppard to NRC Document Control Desk, "Proposed Amendment to Facility Operating Licenses and Technical Specifications Associated with a 1.4-% Core Power Uprate," August 22, 2001 (NOC-AE-01001162)

The referenced letter requested approval of increasing the plant operating power level by 1.4 percent and submitted a license amendment supporting associated revisions to Technical Specifications. As the result of a phone conversation with the NRC on February 27, 2002, additional information to support review of the licensing application is provided in the attachment to this letter.

There are no licensing commitments in this letter. If you should have any questions concerning this matter, please contact Mr. Ken Taplett at (361) 972-8416 or me at (361) 972-8757.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on: 3/4/02


J. J. Sheppard
Vice President,
Engineering & Technical Services

KJT/

Attachments: Additional Information

A001

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NRC Requested Information: Demonstrate that the operation of the South Texas units remains consistent with the basis for the ATWS Mitigation System required by 10CFR50.62 following a 1.4-percent power uprate.

Response: The generic Westinghouse analysis that is the basis for the ATWS Mitigation System is provided in Westinghouse Letter NS-TMA-2182 "ATWS Submittal", December 1979. South Texas conducted a study to compare the results of the referenced four-loop plant in the generic analysis with the South Texas design at the uprate conditions. Design values for South Texas were compared with values for the four-loop plant with Model F steam generators. Of the steam generator models that were analyzed, the tube design and secondary side volume of the Model F design is the closest comparison to the Delta 94 steam generator design at South Texas. In addition, the nominal reactor coolant system conditions and steam generator secondary fluid mass for the Model F plant most closely resembles the South Texas plant. For the comparative study, sensitivities were used for the Model 51 steam generator analysis because sensitivities for the Model F do not appear in the letter report. These sensitivities should bound the predicted reactor coolant system peak pressure for the South Texas plant. The tables below provide a listing of the compared parameters and the resulting peak reactor coolant system pressure. The primary safety concern from the two transients is the potential for high pressure within the reactor coolant system. The results of the study demonstrate that the South Texas units compare favorably with the American Society of Mechanical Engineers (ASME) stress level C limit of 3200 psig.

Case 1: Loss of load without a reactor trip transient

Parameter	Model F referenced plant	South Texas Delta 94 plant	% difference	Sensitivity	Adjustment
Referenced plant reactor coolant system pressure					2902
Pressurizer water level (%)	60	56	6.67	-0.5	-3
Steam generator water mass (lbm)	107,850	151,856	40.80	0	0
Feedwater enthalpy (Btu/lbm)	419.6	419.6	0.00	0	0
Reactor coolant system volume (cubic feet)	12,049	15,075	25.11	4.2	105
Auxiliary feedwater flow (gpm)	1760	2160	22.73	-1.1	-25
Core thermal power (MWt)	3423	3853	12.56	22	276
Pressurizer power-operated relief valve capacity (lbm/hr)	210,000	210,000	0.00		0
Pressurizer safety relief valve capacity (lbm/hr)	420,000	501,000	19.29	Note 1	0
South Texas reactor coolant system pressure					3255

Case 2: Loss of feedwater without a reactor trip transient

Parameter	Model F referenced plant	South Texas Delta 94 plant	% difference	Sensitivity	Adjustment
Referenced plant reactor coolant system pressure					2830
Pressurizer water level (%)	60	56	6.67	-0.4	-3
Steam generator water mass (lbm)	107,850	151,856	40.80	0	0
Feedwater enthalpy (Btu/lbm)	419.6	419.6	0.00	0	0
Reactor coolant system volume (cubic feet)	12,049	15,075	25.11	1.8	45
Auxiliary feedwater flow (gpm)	1760	2160	22.73	-0.3	-7
Core thermal power (MWt)	3423	3853	12.56	13	163
Pressurizer power-operated relief valve capacity (lbm/hr)	210,000	210,000	0.00		0
Pressurizer safety relief valve capacity (lbm/hr)	420,000	501,000	19.29	Note 1	0
South Texas reactor coolant system pressure					3028

Note 1: No sensitivity is presented in the generic analysis. The larger capacity of the South Texas pressurizer safety relief valves would result in a lower reactor coolant pressure than that presented in the above two tables.

Reference: NS-TMA-2182, Letter from T. M. Anderson (Westinghouse) to Dr. S. H. Hanauer (NRC) dated December 30, 1979, "ATWS Submittal".