

Mr. William T. Cottle  
 President and Chief Executive Officer  
 STP Nuclear Operating Company  
 South Texas Project Electric  
 Generating Station  
 P. O. Box 289  
 Wadsworth, TX 77483

November 24, 1998

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION ON NEW FUEL DESIGN,  
 SOUTH TEXAS PROJECT, UNITS 1 AND 2 (STP) (TAC NOS. MA1472 AND  
 MA14.3)

Dear Mr. Cottle:

The Nuclear Regulatory Commission (NRC) staff is reviewing STP Nuclear Operating Company's (STPNOC's) March 31, 1998, response to NRC's March 11, 1998, questions regarding the potential for irregular fuel rod bowing to occur with the new fuel design [P+ fuel (ZIRLO™ with protective bottom grids)] due to the placement of fuel rods near the bottom nozzle. Based on its review, the staff has determined that additional information is needed, as discussed in the enclosure.

This request was discussed with Ms. Kathleen Work of your staff on November 3, 1998, and a mutually agreeable target date of a response to the enclosure within 60 days was established. The staff appreciates the efforts expended with respect to this matter.

Sincerely,

ORIGINAL SIGNED BY:

Thomas W. Alexion, Project Manager  
 Project Directorate IV-1  
 Division of Reactor Projects III/IV  
 Office of Nuclear Reactor Regulation

Docket Nos. 50-498 and 50-499

Enclosure: Request for Additional Information

cc w/encl: See next page

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

November 24, 1998

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STP Nuclear Operating Company  
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P. O. Box 289  
Wadsworth, TX 77483

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION ON NEW FUEL DESIGN,  
SOUTH TEXAS PROJECT, UNITS 1 AND 2 (STP) (TAC NOS. MA1472 AND  
MA1473)

Dear Mr. Cottle:

The Nuclear Regulatory Commission (NRC) staff is reviewing STP Nuclear Operating Company's (STPNOC's) March 31, 1998, response to NRC's March 11, 1998, questions regarding the potential for irregular fuel rod bowing to occur with the new fuel design [P+ fuel (ZIRLO™ with protective bottom grids)] due to the placement of fuel rods near the bottom nozzle. Based on its review, the staff has determined that additional information is needed, as discussed in the enclosure.

This request was discussed with Ms. Kathleen Work of your staff on November 3, 1998, and a mutually agreeable target date of a response to the enclosure within 60 days was established. The staff appreciates the efforts expended with respect to this matter.

Sincerely,

A handwritten signature in cursive script that reads "Thomas W. Alexion".

Thomas W. Alexion, Project Manager  
Project Directorate IV-1  
Division of Reactor Projects III/IV  
Office of Nuclear Reactor Regulation

Docket Nos. 50-498 and 50-499

Enclosure: Request for Additional Information

cc w/enc: See next page

Mr. William T. Cottle  
STP Nuclear Operating Company

South Texas, Units 1 & 2

cc:

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## REQUEST FOR ADDITIONAL INFORMATION

1. NRC's March 11, 1998, letter asks that data or analysis be provided that addresses fuel rod bowing for the new fuel design. It further asks if none is available, propose a plan for confirmatory post-irradiation examination (PIE).
  - a. If no data is available, please so state.
  - b. If no analysis is available, please so state.
  - c. If there is only partial analysis, please indicate what is covered by analysis. In addition, please provide a summary of the partial analysis (i.e., assumptions, codes used, and results).
  - d. The PIE should verify the results of analysis.
  - e. The PIE should supplement those areas not covered by analysis.
  - f. The PIE should address fuel rod growth, assembly growth and fuel rod bowing.

Please address all of the above.

2. The second paragraph on page 2 of the March 31, 1998, response makes comparisons between the 14-foot fuel design at South Texas and the Westinghouse 12-foot design. It states that when comparing the 14-foot fuel to 12-foot fuel, the 14-foot fuel has a greater diameter, which presumably makes the fuel rod stiffer and less susceptible to bowing. However, also as discussed on page 2, when comparing the 14-foot fuel to 12-foot fuel with intermediate flow mixers, the 14-foot fuel has an increased grid span length, which presumably makes the fuel rod more susceptible to bowing. Therefore, comparisons between the 14-foot fuel and the 12-foot fuel are inconclusive unless these two competing factors can be quantified to determine which one has the greater effect. Please explain.
3. Please address the above questions for both the Phase 1 Zirlo-clad fuel in Unit 1 and the Phase 2 Zirlo-clad fuel planned for Unit 2 during the October refueling outage. (Note that NRC's March 11, 1998, questions were inadvertently limited to the Phase 1 fuel).

ENCLOSURE