

April 14, 2008

Mr. Gregory Gibson, Manager  
Regulatory Affairs  
STP Nuclear Operating Company  
P. O. Box 289  
Wadsworth, TX 77483

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 05 RELATED TO  
THE SRP SECTION 10.04.01 FOR THE SOUTH TEXAS COMBINED LICENSE  
APPLICATION

Dear Mr. Gibson:

By letter dated September 20, 2007, STP Nuclear Operating Company (STPNOC) submitted for approval a combined license application pursuant to 10 CFR Part 52. The U. S. Nuclear Regulatory Commission (NRC) staff is performing a detailed review of this application to enable the staff to reach a conclusion on the safety of the proposed application.

The NRC staff has identified that additional information is needed to continue portions of the review. The staff's request for additional information (RAI) is contained in the enclosure to this letter.

To support the review schedule, you are requested to respond within 45 days of the date of this letter. If changes are needed to the safety analysis report, the staff requests that the RAI response include the proposed wording changes.

Mr. Gregory Gibson

-2-

If you have any questions or comments concerning this matter, I can be reached at 301-415-1494 or by e-mail at [george.wunder@nrc.gov](mailto:george.wunder@nrc.gov).

Sincerely,

**/RA/**

George F. Wunder, Senior Project Manager  
ESBWR/ABWR Projects Branch 2  
Division of New Reactor Licensing  
Office of New Reactors

Docket Nos. 52-012  
52-013

eRAI Tracking No. 22

Enclosure:  
Request for Additional Information

cc: William Mookhoek

Mr. Gregory Gibson

-2-

If you have any questions or comments concerning this matter, I can be reached at 301-415-1494 or by e-mail at [george.wunder@nrc.gov](mailto:george.wunder@nrc.gov).

Sincerely,

**/RA/**

George F. Wunder, Senior Project Manager  
ESBWR/ABWR Projects Branch 2  
Division of New Reactor Licensing  
Office of New Reactors

Docket Nos. 52-012  
52-013

eRAI Tracking No. 22

Enclosure:  
Request for Additional Information

cc: William Mookhoek

Distribution:  
PUBLIC  
NGE 1/2 R/F  
GWunder, NRO  
JHernandez, NRO  
SBrock, OGC  
RidsNroDsraSbpb  
RidsNroDnrlNge2

**ADAMS Accession No. ML081050672**

**NRO-002**

OFFICE	SBPB/TR	SBPB/BC	OGC	NGE1/L-PM
NAME	JHernandez*	JSegala*	SBrock*	GWunder*
DATE	03/20/08	03/20/08	03/25/08	04/14/08

\*Approval captured electronically in the electronic RAI system.

**OFFICIAL RECORD COPY**

Request for Additional Information  
South Texas Project Units 3 and 4  
STP Nuclear Operating Co  
Docket No. 52-012 and 52-013  
SRP Section: 10.04.01 - Main Condensers  
Application Section: 10.4.1

QUESTION

10.04.01-1

Section 10.4.1.2.1, "General Description," of the ABWR DCD describes the main condenser (MC) as a multi-pressure, three-shell, reheating/deaerating unit. The DCD design is modified by STD DEP 10.4-2 in the South Texas Project (STP) RCOL application which states: "The main condenser is a single pass, single pressure, three-shell, deaerating unit." The departure also indicates that the three condenser shells are cross-connected to equalize pressure. In accordance with Standard Review Plan (SRP) Section 10.4.1, Item III.3.D, design provisions have been incorporated into the MC that will preclude component or tube failures due to steam blowdown from the turbine bypass system. Also, General Design Criteria (GDC) 60 states, "The nuclear power unit design shall include means to control suitably the release of radioactive materials in gaseous and liquid effluents and to handle radioactive solid waste produced during normal reactor operation, including anticipated operational occurrences. Sufficient holdup capacity shall be provided for retention of gaseous and liquid effluents containing radioactive materials,....." In order to conform to the SRP Section 10.4.1 guidance and the GDC 60 criteria, please explain the impact of the temperature and pressure surges in the main condenser on the low pressure turbine and condenser internals during the most limiting turbine steam bypass event, including the maximum temperature and pressure that is reached compared to the maximum design values, the impact of blowdown and transient effects on condenser internals, and limiting assumptions that apply. Also, explain how the main condenser design capability for the most limiting case will be confirmed during preoperational testing. In addition, Table 10.4-1, "Condenser Design Data," in Chapter 10, Section 4, of the FSAR indicates that the full power main condenser shell pressure for the STP design is 9.38 kPaA when the circulating water temperature is 32.2 °C. However, Figure 10.1-3, "Reference Heat Balance for Valves Wide Open," in Chapter 21, Section 4 of the STP FSAR shows that the pressure of the main condenser as 6.37 kPa and the rated turbine exhaust pressure as 6.77 kPa. Please explain this apparent inconsistency and confirm that the main condenser shell design pressure range of 0 to 207 kPaA that is specified in the above Table 10.4-1 continues to apply to the STP main condensers. Also, please clarify which pressures are absolute and which are gauge.