



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



April 19, 2010

U7-C-STP-NRC-100085

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
One White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

South Texas Project
Units 3 and 4
Docket No. 52-001
Response to Request for Additional Information

Reference: Letter, Mark McBurnett to Document Control Desk, "Application to Amend the Design Certification Rule for the U.S. Advanced Boiling Water Reactor (ABWR)," dated June 30, 2009, U7-C-STP-NRC-090070 (ML092040048).

This letter provides a supplemental response to Request for Additional Information (RAI) question 09.02.04-1 related to the application to amend the ABWR DCD Amendment Part 2, Tier 2, Section 9.5 provided in Attachment 1 to the referenced letter.

The attachment to this letter provides the revised response to following RAI question:

09.02.04-1

Changes will be incorporated into the next update of the ABWR DCD Amendment request after review by the NRC Staff.

There are no commitments in this letter.

If you have any questions, please contact Scott Head at (361) 972-7136, or Bill Mookhoek at (361) 972-7274.

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NRC

STI 32658351

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

Executed on 4/19/2010



Mark McBurnett
Vice President, Oversight & Regulatory Affairs
South Texas Project Units 3 & 4

fjp

Attachment:

Question 09.02.04-1 Revision

cc: w/o attachment except*
(paper copy)

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RAI 09.02.04-1 Revision**QUESTION**

In section 9.5.14.1 of the application to amend the design certification rule for the US ABWR (U7-CSTP-NRC-0900070) dated June 30, 2009, it is stated that the Alternate Feedwater Injection (AFI) system piping is routed underground or otherwise protected from physical impact. It also states that injection is provided through the non-safety-related portion of the CUW tie-in lines to the feedwater system, which are in the R/B portion of the Steam Tunnel. The tie-in provides an interface between the non radioactive AFI system with the CUW system which contains radioactive fluids, reverse flow and leakage thru the check valves could result in the fluid in the injection piping becoming contaminated.

General Design Criteria (GDC) 60 "Control of releases of radioactive materials to the environment" requires that a means be provided to control the release of radioactive materials in liquid effluents. Means must also be provided for monitoring effluent discharge paths and plant environs for radioactivity that may be released in accordance with GDC 64 "Monitoring radioactivity releases" requirements. Also 10CFR52.47(a)(6) and 10CFR20.1406 requires applicants for standard plant design certifications to describe how facilities design and procedures for operation will minimize contamination of the facility and environment.

Provide a discussion that describes how the AFI system complies with GDC 60, GDC 64, and 10CFR20.1406. Include discussion on relevant design features, operation and maintenance, monitoring of the AFI systems for radiation, and detection of leaks from the AFI system to the environment.

RESPONSE REVISION:

This revised response addresses an NRC comment based on their review of the initial response. That comment requests that the DCD amendment be updated to reflect the information in the response. This response revision replaces the original response in its entirety. Changed portions from the previous response are shown with revision bars in the margins.

As shown in the AFI description in Figure 9.5-6 of the DCD amendment application, the AFI contains two check valves located in the Reactor Building main steam tunnel and three normally-closed motor-operated valves (MOVs). These will act as a barrier against release of radioactive fluid from the CUW lines during normal reactor operation. In the event that fluid from the CUW system should leak past the two check valves and the first MOV, a leakoff line is included in the AFI design as shown in Figure 9.5-6 which directs any leakage back to the Reactor Building low conductivity sump. Consequently, any leakage of radioactive fluid into the AFI system is ultimately contained within the Reactor Building. The existing leak detection and radiation monitoring that exists for the Reactor Building low conductivity sump can then be used to monitor this leakage. Based on these design features, the AFI system is compliant with General Design Criteria (GDC) 60, GDC 64, 10CFR52.47(a)(6) and 10CFR20.1406.

The DCD amendment application is being revised as shown below to reflect the information in this response and the response to RAI 09.02.04-2 . Changes from the previous submittal are shown with gray shading.

9.5.14 Alternate Feedwater Injection System

9.5.14.2 Safety Evaluation

This system does not degrade safety for normal operation and provides enhanced safety during and after beyond design basis events. The ability to maintain core cooling is improved by the addition of this separate and diverse means of providing cooling water to the core when all normal and emergency cooling systems are unavailable. The piping and components that interface with the CUW system are the same quality as that system up to and including the second check valve.

In the event that fluid from the CUW system should leak past the two check valves and the first MOV, a leakoff line is included in the AFI design as shown in Figure 9.5-6 which directs any leakage back to the Reactor Building low conductivity sump. Consequently, any leakage of radioactive fluid into the AFI system is ultimately contained within the Reactor Building. The existing leak detection and radiation monitoring that exists for the Reactor Building low conductivity sump can then be used to monitor this leakage.

Flooding from AFI pipe breaks during AFI operation, as well as from the AFI water source, is bounded by existing analyses in the DCD. The impact on risk assessment for internal flooding is minimal because the AFI system is only required to operate for beyond design basis events after all safety systems have already assumed to have failed.

The dynamic effects from an AFI system pipe break are not required to be postulated. These effects on plant safety systems are bounded by the Main Steam or Feedwater High Energy Line Breaks. Additionally, the safety systems are already assumed to have failed at the time the AFI System is required.