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

May 16, 2002
NOC-AE-02001326
File No.: G25
10CFR50.90
STI:31446146

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

South Texas Project
Units 1 & 2
Docket Nos. STN 50-498, STN 50-499
Additional Information to Support the Request for Approval of
Proposed Change to Technical Specification 3.9.4, Containment Building Penetrations

Reference: Letter from J. J. Sheppard to NRC Document Control Desk, "Proposed Change to Technical Specification 3.9.4, Containment Building Penetrations" October 22, 2001 (NOC-AE-01001144)

The referenced letter requested allowance for the equipment hatch to be open during core alterations and/or during movement of irradiated fuel assemblies within containment and submitted a license amendment supporting associated revisions to Technical Specifications. As the result of a phone conversation with the NRC on May 9, 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. W. E. Mookhoek at (361) 972-7274 or me at (361) 972-8757.

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

Executed on: 5/16/2002

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

WEM/

Attachment: Additional Information

A001

cc:
(paper copy)

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ATTACHMENT

ADDITIONAL INFORMATION

The following are questions on the application "Proposed Change to Technical Specification 3.9.4, Containment Building Penetrations" October 22, 2001 (NOC-AE-01001144), that requested allowance for the equipment hatch to be open during core alterations and/or during movement of irradiated fuel assemblies within containment.

A. The licensee should address the estimated time to promptly close the open equipment hatch and explain the basis for the estimated time. This time should be compared to the estimated time for the core to start boiling from loss of cooling at the beginning of fuel offload. The time to close the equipment hatch should be shorter than the time to core boiling.

STP Response

STP has demonstrated that the equipment hatch can be closed and secured with the required 4 bolts in as little as 18 minutes as demonstrated in 2 RE07 (October 1999), however this time is not representative if personnel must make their way to the hatch from another work location. During core alterations with the equipment hatch open, the dedicated hatch closure crew would be assigned other outage duties. Additional time is required beyond the demonstrated 18 minutes to assemble and brief the maintenance crew. Therefore, while equipment hatch closure should occur as soon as practicable, closure is conservatively assumed to occur, absent complications, in 2 hours. This is consistent with a statement that we intend to make in TS Bases, which we included for information in the original amendment request.

A very conservative informal calculation of time to boil in the reactor cavity is 4 ½ hours assuming the initial conditions of 165 hours after shutdown and 140 degrees water temperature. This calculation assumes no heat loss to the surrounding structures and that all heat is transferred to the water volume in the cavity. The calculation also assumed that the volume of water in the cavity was not connected to the rest of the fuel transfer canal and no cooling effect was provided by the spent fuel cooling system. The time to boil increases to over six hours if the initial water temperature is reduced to 120 degrees. Normally the water in the reactor cavity is maintained below 120 degrees.

B. The licensee should address what is necessary to protect the equipment inside the containment, which is needed to maintain the reactor in a safe shutdown condition, from severe weather missiles. This may include placing the missile shield in place outside the closed equipment hatch. The licensee's severe weather procedures

should require closing what is necessary to protect equipment inside containment. These procedures should also suspend all fuel handling activities.

STP Response

The Containment Equipment Hatch (inner cover) is not credited for missile protection.

The Containment Equipment Hatch Missile Shield (outer cover) provides missile protection from externally generated missiles. It is not required in MODES 5 or 6 because there are no essential targets between the equipment hatch and the inner missile barrier (i.e., steam generator compartments). Thus, if a tornado-generated missile came through the hatch, there would be no damage to systems or components required to maintain the reactor in a safe shutdown condition. The fuel and fuel handling equipment are protected from tornado missiles at all times.

C. **The licensee should discuss the procedures in place to deal with severe weather. These procedures should address at what stage of severe weather watches or warnings that the licensee will take action. Watches are when the severe weather is possible within the area. Warnings are when severe weather is reported in the area or is imminent. The licensee should not wait until the severe weather is being seen from the site.**

STP Response

STPNOC procedure "Natural or Destructive Phenomena Guidelines" (0POP04-ZO-0002) provides direction for response to tornadoes, hurricanes, floods, and other natural events. The procedure uses the National Weather Service definitions of Watches and Warnings to require site action. Mechanical Maintenance is required to ensure that the equipment hatch is secured when a Tornado Watch is issued for the STP site. While the equipment hatch is not credited for missile protection, it is a substantial barrier that will limit the effects of severe weather on the personnel and evolutions inside the containment building. The procedure also requires the suspension of core alterations when a Tornado Warning is issued for the STP site.

D. **The licensee states that, "Each hoist is electrically powered...is diesel backed if offsite power is lost for any reason." What is meant by "diesel backed"?**

STP Response

The equipment hatch hoists are normally powered from non-class 480 volt motor control center 1G8 (2G8 for Unit 2), or from non-class motor control center 1L1 (2L2 for Unit 2) via a manual transfer switch. 1G8 (2G8) is in turn powered from non-class 480 volt load center 1W (2W for Unit 2). In the event of a loss of normal power to the 1W (2W) load

center, a non-class dedicated diesel generator will automatically start and load the 1W (2W) load center to supply backup power to the equipment hatch hoists.

E. Explain the deletion in the second and third lines of proposed change to TS 4.9.4.

STP Response

The modification to TS 4.9.4 addresses the proposed change to TS 3.9.4. When changed, TS 3.9.4 would allow both the equipment hatch and personnel air lock to remain open during core alterations. The proposed change to the wording of TS 4.9.4 would require verification of all the requirements of TS 3.9.4, not just those penetrations that are serviced by automatic containment purge and exhaust valves. The new wording would require verification that the equipment hatch, personnel air lock, and all other penetrations are closed or capable of being closed as required by TS 3.9.4.a, 3.9.4.b, and 3.9.4.c.