April 23, 2001

MEMORANDUM TO: Robert A. Gramm, Chief, Section 1
Project Directorate IV and Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

FROM: John A. Nakoski, Senior Project Manager, Section 1 ***/RA/***
Project Directorate IV and Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

SUBJECT: SOUTH TEXAS PROJECT, UNITS 1 AND 2 - DRAFT INFORMATION PROVIDED BY LICENSEE ON APRIL 17 AND 19, 2001, FOR RESOLUTION OF OPEN ITEMS FROM DRAFT SAFETY EVALUATION (TAC NOS. MA6057 AND MA6058)

The U.S. Nuclear Regulatory Commission (NRC) staff is in the process of reviewing the risk-informed exemption requests that the STP Nuclear Operating Company (STPNOC) submitted. As part of that process, the NRC staff issued a draft safety evaluation on November 15, 2000. Currently, the NRC staff is working with STPNOC to resolve the open and confirmatory items from the draft safety evaluation. The NRC staff is participating in periodic teleconferences to discuss the resolution of the open and confirmatory items. In preparation for these teleconferences, the licensee will frequently provide the NRC staff with information either using email or by fax. Likewise, the NRC staff will frequently provide information to the licensee using similar methods. All of the information exchanged by email or fax between the licensee and the NRC during this process will be made available to the public.

The attachments provide the draft information provided by the licensee to facilitate discussions on the resolution of several open items during teleconferences on April 18 and 23, 2001. Attachment 1 provides a draft revised response to open item 3.4 discussed during the April 23, 2001 teleconference. Attachment 2 provides a draft revision to open item 3.5 discussed during the April 18, 2001, teleconference.

Attachments: As stated

Docket Nos. 50-498 and 50-499

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ATTACHMENT 1

REVISED DRAFT RESPONSE TO OPEN ITEM 3.4

Draft Response

Open item 3.4: STPNOC needs to clarify how it addresses the significance of SSCs that function to protect the integrity of the containment for consequence mitigation in its categorization process.

Response

The STP PRA model describes containment response to a core damage event using four different containment response categories. One of the categories is Late Containment Failure, which makes up approximately 9% of all the containment responses to a core-damaging event. Late Containment Failure is defined as containment failure that occurs greater than 4 hours after vessel breach. Approximately 77% of all Late Containment Failures involve station blackout scenarios (i.e., no electric power). Loss of electric power presumes that no SSCs (e.g., reactor containment fan coolers, containment spray, etc.) will be available to mitigate the event, and thus results in late containment overpressurization.

In response to a previous Request for Additional Information (RAI #21), a sensitivity analysis was performed to evaluate the impact of increased equipment failure rates postulated to result from implementation of the requested exemption. For purposes of the sensitivity analysis for RAI #21, the failure rates were increased by a factor of 10 for categorized LSS components that are modeled in the PRA. The resulting changes to the Core Damage Frequency (CDF) and Large Early Release Frequency (LERF) were found to be within the guidance provided by Regulatory Guide 1.174.

To address concern with Late Containment Failures, a sensitivity analysis was performed to demonstrate the impact to the Late Containment Failure Frequency. This study used the same postulated increase in component failure rates (i.e., a factor of 10) for all categorized LSS components and non-categorized low ranking components in the PRA. The following table presents the results of this analysis:

	Current Average (events/reactor year)	**Sensitivity Study λ_{LSS}*10 (events/reactor year)**	**Increase**	**% Increase**
CDF	9.0781E-6	9.1590E-6	8.0900E-8	0.9%
LERF	1.3742E-7	1.3806E-7	6.400E-10	0.5%
Late Cont. Failure	**8.2807E-7**	**8.5601E-7**	**2.794E-8**	**3.4%**

Note, the results in the above table for CDF and LERF are different from the results presented in the response to RAI #21. This is largely due to a modeling update consistent with the "living" PRA policy at STP.

Regulatory Guide 1.174 does not provide guidance on acceptable increases in Late Containment Failure. However, a delta increase in the frequency of Late Containment Failure of 2.794E-8 is very small and comparable to delta increases in the CDF and LERF. The delta increases in CDF and LERF are small and consistent with the region III of Figures 3 and 4 in Regulatory Guide 1.174 and consistent with the intention of the Commission's Safety Goal Policy Statement. Consequently, the potential increase in the frequency of Late Containment Failure, even assuming a factor of 10 increase in low ranking components, is considered acceptable.

ATTACHMENT 2

REVISED DRAFT RESPONSE TO OPEN ITEM 3.5