May 29, 2003

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

SUBJECT: SOUTH TEXAS PROJECT, UNITS 1 AND 2 -REQUEST FOR REVIEW AND APPROVAL OF RISK INFORMED INSERVICE TESTING PROGRAM (TAC NOS. MB8948 AND MB8949)

Dear Mr. Sheppard:

I am writing to follow up the telephone conversation on May 27, 2003, with Mr. L. B. Marsh, Deputy Director of the Division of Licensing Project Management, Office of Nuclear Reactor Regulation, U. S. Nuclear Regulatory Commission (NRC); and Mr. T. J. Jordan, Vice President, Engineering & Technical Services, STP Nuclear Operating Company (STPNOC). During the conversation, Mr. Marsh stated that the NRC staff has fundamental technical concerns with your revised application for the subject request, dated November 12, 2002.

On May 27, 2003, your staff was provided a copy of the NRC's concerns by email. The enclosure to this letter provides our formal concerns about the proposed risk-informed inservice testing program.

After you have had an opportunity to consider and understand our concerns, we suggest scheduling a conference call to assure a mutual understanding of the issues and to discuss your plans for going forward. Please contact me at 301-415-1476 to arrange the call.

Sincerely,

/RA/

Mohan Thadani, Senior Project Manager, Section 1
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-498 and 50-499

Enclosure: As stated

cc w/encl: See next page

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MAJOR TECHNICAL ISSUES WITH

STPNOC RISK-INFORMED INSERVICE TESTING SUBMITTAL

(TAC NOS. MB8948 AND MB8949)

The U.S. Nuclear Regulatory Commission (NRC) regulations at Section 50.55a(a)(3) of Title 10 of the *Code of Federal Regulations* (10 CFR) allow the NRC staff to authorize an alternative to the regulatory requirements for inservice testing (IST) where the licensee demonstrates that the proposed alternatives provide "an acceptable level of quality and safety," or if compliance with the requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. In its submittal dated November 12, 2002, STP Nuclear Operating Company (STPNOC) states that its alternate approach to the American Society of Mechanical Engineers (ASME) Section XI Code requirements for determining the test intervals for pumps and valves as described in the proposed Risk-Informed Inservice Testing (RI-IST) Program for South Texas Project (STP), Units 1 and 2, provides "an acceptable level of quality and safety" because, in the licensee's view, key safety principles of defense-in-depth and safety margins are maintained. Contrary to this assertion, STPNOC's submittals dated May 21, 2001, and November 12, 2002, do not demonstrate that the proposed RI-IST Program at STP will provide an acceptable level of quality and safety as an alternative to the current IST regulations. Specifically, the NRC staff has identified numerous inadequacies in STPNOC's proposed RI-IST Program with some of the more significant issues discussed in the following comments.

1. STPNOC will re-categorize structures, systems, and components (SSCs) at STP under the proposed RI-IST Program. The re-categorization process for STPNOC's proposed RI-IST Program (1) does not meet NRC staff guidelines for RI-IST programs provided in NRC Regulatory Guide (RG) 1.175, "An Approach for Plant-Specific, Risk-Informed, Decisionmaking: Inservice Testing;" (2) is inconsistent with staff-approved, risk-informed ASME Code Cases; and (3) differs significantly from the categorization process used by STPNOC to support its exemption request which was granted on August 3, 2001. For example, STPNOC's proposed RI-IST Program would consider a component categorized as high safety significant (HSS) or medium safety significant (MSS) under the exemption categorization process to be of low safety significance (LSS) under the proposed RI-IST Program if the current IST program does not test the safety significant function of the component. As a result, the re-categorization process might not properly include components with important safety-significant functions within the scope of STPNOC's proposed RI-IST Program.

2. Consistent with RG 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," and RG 1.175, the NRC staff expects the licensee's submittal to address the cumulative impact of previous, related changes at STP. In this context, the exemption process resulted in LSS and non-risk significant (NRS) SSCs being taken completely out of the scope of the STP IST Program. STPNOC's proposed RI-IST Program further extends the test intervals for some of those SSCs remaining within the STP IST Program. Both the exemption impact and the proposed additional impact on the current IST Program must be evaluated together and shown to meet the acceptance guidelines of RGs 1.174

and 1.175. Thus, the change in core damage frequency and large early release frequency quantification in the licensee's submittal must address the combined/cumulative impacts to the IST Program at STP resulting from the exemption process and the proposed RI-IST Program; and these results must meet the acceptance guidelines of RGs 1.174 and 1.175.

3. The categorization process for the proposed RI-IST Program only addresses what STPNOC refers to as "active" failure modes. STPNOC appears to define a SSC as being "passive" if its normal state is the same as its risk-important functional state thus assuming it does not have to change state to achieve its risk-important function. However, this definition does not address the potential for SSCs to be in its non-normal state periodically (e.g., as a result of maintenance or testing); accidently (e.g., a spurious signal or post-maintenance error); or in response to plant accident conditions and operations (e.g., a check valve closes during pump stop/restart and must re-open when flow is re-established). For these situations, the SSCs are not passive as it will require active movement to perform its risk-important function. STPNOC must address the potential for components to be in its non-normal state. Without sufficient justification that the SSC cannot be in these non-normal states, STPNOC will need to re-categorize these SSCs and test the risk-important function, even if the SSC is normally considered to be passive by STPNOC.

4. In Section 3.1.1 of STPNOC's proposed RI-IST Program Engineering Analysis (Attachment 2 to STPNOC's submittal dated November 12, 2002) states that the testing strategy for each component group will ensure to the extent practicable that adequate component capability margin exists above that required during design-basis conditions such that component operating characteristics will not be allowed to degrade to a point of insufficient margin before the next scheduled test activity. However, the test strategies specified for individual component types in Section 3.0 of STPNOC's proposed RI-IST Program Description (Attachment 3 to STPNOC's submittal dated November 12, 2002) do not provide assurance that SSCs categorized as HSS or MSS under the exemption process, but re-categorized as LSS under the proposed RI-IST Program, will be tested in a manner that collects sufficient performance information to support its continued functionality over the test interval. For example, the program description on pages 11 and 12 indicates that testing of air-operated valves (AOVs) ranked as MSS or LSS under the proposed RI-IST Program will be tested in accordance with the Code of Record (stroke-time testing) with a test interval of 6 or more years, but does not address collecting sufficient performance information from testing to support those intervals. Further, in response to a question from the NRC staff on page 18 of Attachment 1 in its submittal dated November 12, 2002, STPNOC does not indicate that it would obtain data or information that will allow evaluation of operating characteristics for safety-related AOVs other than for those categorized as HSS under the proposed RI-IST Program. As a result, STPNOC's intended implementation of the proposed RI-IST Program would not provide timely and systematic collection of unavailability/reliability data to have confidence that the assumptions in the probabilistic risk assessment remain valid. In addition to being unacceptable for the above reasons, STPNOC's proposed RI-IST Program is inconsistent with the NRC generic guidance in RG 1.175 that testing of SSCs categorized as LSS under proposed RI-IST Programs should be conducted using test methods that support the extended test intervals. STPNOC's proposed RI-IST Program is also inconsistent with the provisions for

surveillance testing and monitoring of components ranked as LSS in the Updated Final Safety Analysis Report (UFSAR) which served as the basis for the NRC staff's approval of the STPNOC exemption request from multiple regulations, including 10 CFR 50.55a, in the NRC safety evaluation (SE) dated August 3, 2001.

5. In support of the exemption request for LSS/NRS SSCs at STP, the licensee specified in its UFSAR that HSS and MSS SSCs would continue to satisfy the regulations, including 10 CFR 50.55a for IST requirements, and that HSS and MSS SSCs would be evaluated to determine whether enhanced treatment is warranted. In addition to being inconsistent with this basis for the exemption request, STPNOC's proposed RI-IST Program does not specify adequate testing of safety significant functions of components where those functions could be, but are not, tested as part of the current IST Program at STP. For example, STPNOC's proposed RI-IST Program would not provide confidence in the capability of the STP safety injection recirculation valves to perform its opening function.

6. STPNOC's proposed RI-IST Program states that potential intersystem common cause failures of pumps and valves at STP will not be addressed. On page 37 of the SE dated August 3, 2001, accepting the STP exemption request, the NRC staff specifies that treatment processes can affect SSC reliability across multiple plant systems. In the SE, the NRC staff discusses defense strategies for common-cause failures which are said to typically include design control; use of qualified equipment; testing and preventive maintenance programs; procedure review; personnel training; quality control; barriers; diversity (functional, staff, and equipment); and staggered testing and maintenance. The NRC staff emphasizes in the SE that effective implementation of treatment processes is necessary to ensure that common cause failures are minimized. In its submittal dated November 12, 2002, STPNOC states on page 2 of Attachment 1 that the defense strategies described in the SE are in place at STP so that common cause failures are minimized. Although STPNOC may apply some of those defense strategies at STP, the licensee has not demonstrated that its implementation of these strategies is sufficient to eliminate the need to address the potential for intersystem common cause failures under its proposed RI-IST Program. For example, on page 3-12 of the proposed RI-IST Program Engineering Analysis (Attachment 2 in the November 12, 2002, submittal), STPNOC states that its proposed monitoring plan is sufficient to detect component degradation in a timely manner and lists preventive maintenance activities for plant components, including removing the motor to inspect the motor pinion in motor-operated valves (MOVs). However, MOV performance problems recently led STPNOC to determine that its preventive maintenance activities had failed to identify deficiencies in motor pinion key setup (such as keys not staked, missing keys, and loose motor pinions and setscrews) that eventually could have prevented numerous MOVs in multiple plant systems from being capable of performing its safety functions under design-basis conditions.

South Texas, Units 1 & 2

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