UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
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ARLINGTON, TEXAS 76011-4005

December 20, 2006

James J. Sheppard, President and
Chief Executive Officer
STP Nuclear Operating Company
P.O. Box 289
Wadsworth, TX 77483

SUBJECT: NOTICE OF ENFORCEMENT DISCRETION FOR SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY REGARDING SOUTH TEXAS PROJECT, UNIT 1 [TAC NO. MD3829, NOED NO. 06-4-002]

Dear Mr. Sheppard: .

By letter dated December 18, 2006, South Texas Project Nuclear Operating Company (STPNOC) confirmed a December 17, 2006, verbal request that the NRC exercise discretion to not enforce compliance with the actions required in South Texas Project (STP), Unit 1, Technical Specification (TS) 3.3.3.6 "Accident Monitoring Instrumentation," Table 3.3-10, #11, Action 35, for Unit 1 “D Train” Auxiliary Feedwater Flow and the actions required in TS 3.7.1.2 “Auxiliary Feedwater System,” Action b., for the auxiliary feedwater (AFW) system.

STPNOC requested that a Notice of Enforcement Discretion (NOED) be granted pursuant to the NRC’s policy regarding exercise of discretion for an operating facility, described in Section VII.C of the NRC’s Enforcement Policy, and be effective for a period of 36 hours for TS 3.3.3.6 and 12 hours for TS 3.7.1.2, expiring on December 18, 2006 at 9:45 p.m. (all times discussed in this letter refer to Central Standard Time). This letter documents our telephone conversation on December 17, 2006, at 8:39 a.m., when we verbally granted your request for enforcement discretion. Subsequent to the verbal authorization of this enforcement discretion, we understand that the condition causing the need for this enforcement discretion was corrected as of 9:55 p.m. on December 17, 2006. The basis for our decision is provided in the following discussion.

Your letter documented information previously discussed with the NRC in a telephone conference which occurred at 7:00 a.m. on December 17, 2006. The principal NRC staff members who participated in the telephone conference included: Bruce Mallett, Regional Administrator, RIV; Art Howell, Director, Division of Reactor Projects (DRP), RIV; Dwight Chamberlain, Director, Division of Reactor Safety (DRS), Region IV; Tim McGinty, Deputy Director, Division of Operating Reactor Licensing, Office of Nuclear Reactor Regulation (NRR); Claude Johnson, Chief, Project Branch A, DRP, Region IV; David Terao, Chief, Plant Licensing Branch 4, NRR; George Wilson, Chief, Electrical Branch, NRR; Allen Howe, Chief, Instrumentation and Controls (I&C) Branch, NRR; Mike Runyan, Senior Reactor Analyst, DRS, Region IV; John Dixon, Senior Resident Inspector, DRP, Region IV; Bhalchandra Vaidya, Acting Project Manager, NRR; John Kramer, Reactor Analyst, NRR; Quynh Nguyen, Project Manager, NRR; Barry Marcus, I&C Branch, NRR; and Matt McConnell, Electrical Branch, NRR.

Your staff requested enforcement discretion for Unit 1 TS 3.3.3.6, Table 3.3-10, Action Statement 35 and TS 3.7.1.2.b until 9:45 p.m. on December 18, 2006. Specifically, your staff requested that the NRC exercise enforcement discretion with regard to these two TS until 9:45 p.m. on December 18, 2006, to allow time to return the affected equipment functions associated with these TS's to an operable status. With respect to TS 3.3.3.6, the affected function involved Train D AFW flow indication. With respect to TS 3.7.1.2 the affected function involved Train D turbine-driven AFW pump automatic flow control. These functions were affected by an electrical transient stemming from the failure of a capacitor in an inverter associatated with the 120 VAC electrical distribution system. On December 15, 2006, at 9:45 a.m., STP, Unit 1 entered TS 3.3.3.6, Table 3.3-10, Action Statement 35 for the AFW flow indication and TS 3.7.1.2.b for the AFW system because of the loss of these TS functions. This request represented an additional 36 hours for AFW flow indication governed by TS 3.3.3.6 and an additional 12 hours for the turbine-driven AFW pump automatic flow control governed by TS 3.7.1.2. Specifically these TS require:

For Action Statement 35 of TS 3.3.3.6:

> "With the number of OPERABLE channels less than the Minimum Channels Operable requirement, restore at least one inoperable channel to OPERABLE status within 48 hours, or be in at least HOT SHUTDOWN within the next 12 hours;" and

For Action Statement b. of TS 3.7.1.2:

> "With the turbine-driven auxiliary feedwater pump inoperable, or with any two auxiliary feedwater pumps inoperable, restore the affected auxiliary feedwater pump(s) to OPERABLE status within 72 hours. MODE 3 may be entered with an inoperable turbine-driven auxiliary feedwater pump for the purposes of performing Surveillance Requirement 4.7.1.2.1.2."

Because the TS 3.3.3.6 allowed outage time (AOT) is more limiting than the TS 3.7.1.2.b AOT (48 hours versus 72 hours), as of 9:45 a.m. on December 17, 2006, action would have been required to have been initiated in order to place STP, Unit 1 in HOT SHUTDOWN by 9:45 p.m. on December 17, 2006.

STPNOC informed the NRC staff that on December 15, 2006 at 9:45 a.m., that control room operators noted an electrical transient on a distribution panel (DP1202) for the 120VAC distribution system. Visual inspections revealed a failed capacitor in the inverter that supplies power to DP1202. STPNOC informed the staff that a capacitor (1 of 10) within the inverter had failed because of a ground fault within the capacitor. This ground fault was the cause of the electrical transient. Following the electrical transient, the STP, Unit 1 staff identified that several electrical loads supplied by DP1202 were no longer in operation. While other loads were also affected, the loads that are the subject of the enforcement discretion request included qualified display processing system (QDPS) Cabinet D2 that provides, among other functions, auxiliary feedwater (AFW) flow indication and control functions for the Train D turbine-driven AFW train.

Following the failure of the capacitor, we understand that your staff identified that the central processing unit (CPU) in QDPS Cabinet D2 was found to be not functioning correctly. STPNOC replaced the APC-2 controller board and the CPU; however, that did not restore the processing unit to operation. Troubleshooting identified that two of three Electrically Erasable, Programmable, Read-Only Memory (EEPROM) chips located on the CPU circuit board had failed. Your staff indicated that the most credible cause of the EEPROM chip failures was the electrical transient associated with the Inverter 1202 capacitor failure. Your staff indicated that STPNOC did not currently have spare EEPROM chips for this QDPS Cabinet D2 in stock, but was working with a contractor to expedite programming and shipping of replacement EEPROM chips. These EEPROM chips were scheduled to arrive on site on December 17, 2006 at 12 noon.

A similar event occurred at STP in December 2005. The initiating cause of the event was a failed capacitor in the same inverter. STPNOC performed a failure analysis of that capacitor and determined that an internal lead in the capacitor had shorted to ground. STPNOC notified the inverter vendor (Ametek) and the capacitor vendor (Aerovox) of its findings. Aerovox subsequently notified STPNOC that changes had been made to its manufacturing process to reduce the potential for internal faults. During the October 2006 refueling outage, STPNOC replaced all capacitors in all Unit 1 Ametek inverters with newly designed capacitors. This maintenance activity was independently verified by the NRC resident inspectors. STPNOC stated that the December 2005 event did not result in damage to the EEPROM chips because the power supply failed in the QDPS Cabinet D2, protecting all downstream components.

STPNOC stated that the electrical transient that damaged QDPS Cabinet D2 could not have been anticipated given that the failed capacitor had recently been replaced with one of an improved design. Your staff indicated that STPNOC promptly recognized that a short duration (48-hour) AOT applied, which necessitated the assignment of the highest priority for resolution and the mobilization of resources to resolve the condition, including determining the availability of spare parts for QDPS Cabinet D2. Your staff stated that because of the need to obtain new EEPROM chips, STPNOC could not complete the corrective maintenance within the AOT of the subject TS's. STPNOC stated that after the replaced EEPROM chips are confirmed to be operating properly, additional circuit boards and cards downstream of the CPU would be confirmed to be operating properly or would be replaced.

On the basis of the information provided in telephone conversations on December 17, 2006, and in your December 18, 2006, letter, the NRC staff has determined that Criterion B.2.1.1.a to NRC Inspection Manual Part 9900, "Technical Guidance, Operations - Notices of Enforcement Discretion," was met. The NRC reviewed your written request for enforcement discretion dated December 18, 2006, and verified consistency between your oral and written requests. The NRC's basis for this discretion considered: (1) the availability of the three other trains of Unit 1 motor-driven AFW pumps and the ability to manually control turbine-driven AFW pump flow; (2) the availability of offsite and onsite electrical power; (3) the availability of the on-site fire protection system; (4) compensatory measures to mitigate events crediting AFW flow initiation and steam generator power (SG) operated relief valve (PORV) operation; (5) the compensatory measures to reduce the probability of a plant transient while ensuring the availability of other safety-related equipment; and (6) the quantitative risk assessment of the condition which indicated that the risk associated with increasing the allowed outage time an additional 36 hours

for TS 3.3.3.6 and 12 hours for TS 3.7.1.2 did not cause the risk to exceed the level determined acceptable during normal work controls and, therefore, there is no net increase in radiological risk to the public.

The STPNOC final calculated risk indicated that the incremental conditional core damage probability (ICCDP) and the incremental conditional large early release probability (ICLERP) for 36 hours are 8.0E-09 and 1.0E-12, respectively. These values represent a very small increase in risk and are below the guidance thresholds in the NRC Inspection Manual Chapter, Part 9900 guidance. In the sensitivity case that conservatively considered the AFW Train D non-functional, the associated ICCDP for a 12 hour duration was 3.1E-08. To further mitigate the risk impact, as discussed above, you committed to implement a series of compensatory actions for the duration of the enforcement discretion period. Some of the compensatory actions that STPNOC committed to implement included: (1) operating instructions will be provided and briefed routinely, which will include expected actions and alternate indications for AFW flow to SG 1D and prompt manual cross connect to other SGs with functioning AFW flow indication; (2) operations crew will ensure a designated control room operator is responsible for and briefed on manual operation of AFW 14 flow control valve; (3) operations crew will ensure a dedicated field operator is responsible for and briefed on AFW controls including cross-connecting from SG 1D to the other SG's and a designated field operator responsible for and briefed on local manual operation of SG 1D PORV; (4) two diesel fire pumps and one fire water storage tank will be verified to be functional for the duration of the NOED; (5) operating instructions will be provided and briefed routinely for the local manual operation of SG 1D PORV; (6) the switchyard will be locked, and STPNOC will ensure that no maintenance activities are performed in the switchyard that could directly cause a Loss of Offsite Power event, unless required to ensure the continued reliability and availability of the offsite power sources; (7) STPNOC will not perform any planned maintenance on the Unit 1 Technical Support Diesel Generator, Load Center 1W and Motor Control Center 1G8, and the Positive Displacement Charging Pump; (8) STPNOC will ensure that no planned maintenance is performed on the Emergency Transformer or the 138 KV Blessing to STP and Lane City to Bay City lines; (9) no other maintenance that would render a system non-functional other than QDPS Cabinet D2 will be performed during the enforcement discretion period; and (10) operating crews will be briefed that AFW 14 flow control valve must be operated manually from the main control room and SG 1D PORV must be operated manually from the local hydraulic skid.

On the basis of the NRC staff's evaluation of your request, as outlined in this letter, we have concluded that issuance of this NOED is consistent with the Enforcement Policy and staff guidance and has no adverse impact on public health and safety. While it was our intention to exercise discretion to not enforce compliance with TS's 3.3.3.6 and 3.7.1.2 until 9:45 p.m. on December 18, 2006, we understand that the repairs to QDPS Cabinet D2 were completed at 9:55 p.m. on December 17, 2006. At that time, this obviated the need for further enforcement discretion for TS 3.3.3.6. Enforcement discretion for TS 3.7.1.2 was obviated altogether since repairs were completed before the expiration of the original 72 hour AOT.

As discussed in your December 18, 2006, letter, the NRC staff agrees with STPNOC's determination that a follow-up TS amendment request is unnecessary because you submitted a request on October 2, 2006, to extend the 48-hour AOT for auxiliary feedwater flow (TS Table 3.3-10) to 30 days, and the NRC staff is currently evaluating your request.

Additionally, a broad-scope Risk-Managed Technical Specification (Initiative 4b) amendment application is currently under review by the NRC staff that, if approved, would preclude the need for enforcement discretion for the auxiliary feedwater AOT in TS 3.7.1.2.

My staff will be closely monitoring the root cause analysis associated with the failed capacitor of Inverter 1202, as well as the replacement of the unaffected capacitors in Inverter 1202. As stated in the Enforcement Policy, action may be taken, to the extent that violations were involved, for the root cause that led to the noncompliance for which this NOED was necessary.

Sincerely,

/RA/

Bruce S. Mallett
Regional Administrator

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