



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

December 20, 2006
NOC-AE-06002096
10CFR50.90

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
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South Texas Project
Unit 1
Docket Nos. STN 50-498
Proposed One-Time Exigent Change to Loss of Power Instrumentation Technical Specifications

STP Nuclear Operating Company (STPNOC) submits the attached proposed amendment to South Texas Project Unit 1 Operating License NPF-76. This license amendment request proposes a one-time exigent change to revise Technical Specification (TS) 3.3.2 requirements for loss of power (LOP) instrumentation (Functional Unit 8).

One channel of STP Unit 1 LOP instrumentation is currently inoperable and in the tripped condition per TS action requirements. Corrective maintenance will require a second channel to be made inoperable and STP TS have no action for two inoperable channels. Consequently TS 3.0.3 would apply. STP is proposing to revise the LOP TS such that the corrective maintenance can be performed without the need to enter TS 3.0.3. Because operating with one channel of LOP instrumentation in trip increases the potential for an inadvertent ESF actuation (Standby Diesel Generator start) during normal operation and during surveillance testing, STP is submitting this as an exigent request to limit the time operating in a configuration with one Train A LOP channel in trip. STPNOC requests approval of the proposed amendment by January 10, 2007 to allow corrective maintenance to be scheduled and performed before the next scheduled LOP instrument channel surveillance.

Exigent approval of the proposed TS change is justified because the failure that caused the inoperable channel could not reasonably have been anticipated. In addition, STPNOC has included the LOP instrumentation in its broad-scope risk-managed TS application, which will be the permanent TS resolution.

There are no commitments in this submittal.

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The STPNOC Plant Operations Review Committee has reviewed and concurred with the proposed change to the Technical Specifications.

In accordance with 10 CFR 50.91(b), STPNOC is notifying the State of Texas of this request for license amendment by providing a copy of this letter and its attachments.

If there are any questions regarding the proposed amendment, please contact Mr. A. W. Harrison (361) 972-7298 or me at (361) 972-7849.

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

Executed on 12/20/2006
Date



E. D. Halpin
Site Vice President
and Plant General Manager

awh/

Attachments:

1. Description of Changes and Safety Evaluation
2. Annotated Technical Specification Pages

cc:

(paper copy)

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ATTACHMENT 1

DESCRIPTION OF CHANGES

AND

SAFETY EVALUATION

1.0 Introduction

One channel of STP Unit 1 LOP instrumentation is currently inoperable and in the tripped condition per TS action requirements. Corrective maintenance will require a second channel to be made inoperable and STP TS have no action for two inoperable channels. Consequently TS 3.0.3 would apply. Because of the increased exposure to a potential inadvertent ESF actuation (Standby Diesel Generator start), STP is submitting this as an exigent request to limit the time operating in a configuration with one Train A LOP channel in trip. STPNOC requests approval of the proposed amendment by January 10, 2007 to facilitate early resolution of the Unit 1 condition.

STPNOC is proposing this amendment as a one-time change. A permanent change to the LOP instrumentation action statement is included in STPNOC's proposed risk-managed TS amendment.

2.0 Description

TS 3.3.2, Table 3.3-3 ACTION 20 applies to the loss of power instrumentation. Since the loss of power instrumentation channels do not have an installed bypass capability, ACTION 20.b is the pertinent requirement:

ACTION 20 - With the number of OPERABLE channels one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may proceed provided the following conditions are satisfied:

- a. For Functional Units with installed bypass test capability, the inoperable channel may be placed in bypass, and must be placed in the tripped condition within 72 hours.

Note: A channel may be bypassed for up to 12 hours for surveillance testing per Specification 4.3.2.1, provided no more than one channel is in bypass at any time.

- b. For Functional Units with no installed bypass test capability,
 1. The inoperable channel is placed in the tripped condition within 72 hours, and
 2. The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels per Specification 4.3.2.1.

STPNOC proposes to add a note to ACTION 20 to establish a one-time provision for corrective maintenance on the Unit 1 Train A channel. The note would read:

For Unit 1 Train A only: Up to two channels of loss of power instrumentation (Functional Unit #8) may be inoperable for 72 hours for the purpose of restoring an inoperable channel to operable status. With two channels inoperable, within 72 hours restore the inoperable channels to OPERABLE status, or restore the Minimum Channels Operable requirement with the inoperable channel in the tripped condition, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. This provision shall expire 30 days after approval of the amendment.

3.0 Background and Justification for Exigent Change

On December 1, 2006, STP Unit 1 Train A sequencer received a strip signal from one of four channels of undervoltage and degraded voltage relays for the Train 4.16KV bus. Sequencer actuation is a 2/4 logic. No signal was received from any of the other three channels, indicating the strip signal was not valid. STPNOC placed the inoperable channel in the trip condition, as required by the TS. Corrective maintenance was scheduled for December 7, 2006, with the plan being to replace fuses. Pre-job review of the activity caused the job to be rescheduled to December 14, 2006. On December 14, STPNOC maintenance found indications that the potential transformer (PT) had failed.

Replacement of the PT will take several hours and access to the PT will require the two channels of the Train A LOP instrumentation that share the same drawer to be removed from service (i.e., the inoperable channel and one other channel). Since there is no TS action for two inoperable channels of LOP instrumentation, the shutdown requirement of TS 3.0.3 would apply. Voluntary entry into TS 3.0.3 is permissible for short durations (less than an hour) and for reasons other than operational convenience. Although this entry would not be for operational convenience, it would be for substantially longer than one hour. In accordance with the reporting guidance in NUREG-1022, such an entry into TS 3.0.3 would result in a reportable condition per 10CFR50.73. To avoid this situation, STPNOC is proposing to amend the TS for LOP to permit corrective maintenance.

While the TS allow continued operation with one channel of LOP instrumentation in the trip condition, operation in the configuration for an extended time exposes the plant to a invalid ESF actuation (start and load of SDG11) should another channel fail.

This condition also results in an unusual burden on the normal testing for the relays and the associated Standby Diesel Generator (SDG). With the "A" ESF bus LOP instrumentation failed and in trip, STP Unit 1 does not have power to the relay that provides reverse power protection to SDG11 when it is paralleled to the grid for surveillance testing. To minimize the exposure to any reverse power condition while the channel is inoperable, STP is running SDG11 at full load for 60 minutes (T.S. requirement) instead of the normal 210 minutes (vendor recommendation). This

protective relay does not affect the emergency function of the diesel to respond to any signal provided by the sequencer since it would not be paralleled to offsite power. STPNOC also has to perform trip actuating device operational tests (TADOT) on the operable LOP instrument channels in compliance with TS surveillance requirements (SR). Performing the TADOTs requires the inoperable channel to be bypassed while the other channel is tested. Placing the inoperable channel in bypass and restoring the channel to the trip condition after testing have some potential for a human performance error that would result in an ESF actuation.

Both the undervoltage and degraded voltage functions are in the tripped condition. The proposed note applies to Functional Unit #8, which includes undervoltage and degraded voltage channels (Functional Units 8.a, 8.b, 8.c).

Exigent approval of the proposed TS change is justified because the failure that caused the inoperable channel could not reasonably have been anticipated. In addition, STPNOC has included the LOP instrumentation in its broad-scope risk-managed TS application, which will be the permanent TS resolution. STPNOC has promptly prepared and submitted this proposed amendment to the Unit 1 TS.

To minimize the time the channel is inoperable and reduce the potential for these unnecessary challenges to the SDG and other ESF equipment, STPNOC intends to restore the failed channel to service as early as practical and believes the potential challenges described above justify an exigent change to the TS. STPNOC requests NRC approval of the request by January 10, 2007 to allow corrective maintenance to be scheduled and performed before the next scheduled LOP instrument channel TADOT (grace period ends January 21, 2007).

4.0 Technical Analysis

Two under-voltage sensing schemes are employed for each Class 1E 4.16 kV bus to provide two levels of under-voltage protection. The first scheme detects loss of voltage and the second scheme detects degraded voltage conditions on the bus. Voltage signals to each scheme are provided through four potential transformers connected to each bus. Four solid-state type instantaneous under-voltage relays and four time delay relays are used for the first scheme (loss of voltage). The devices used for the second scheme (degraded voltage) include four solid-state type instantaneous under-voltage relays and two sets of four time delay relays. (Ref: UFSAR Section 8.3.1.1.4.6.3)

The OPERABILITY requirements for the Loss of Power 4.16 kV ESF under-voltage relays and the 4.16 kV ESF degraded voltage relays are found under functional unit 8 in Table 3.3-3 of TS 3.3.2. The Loss of Power 4.16 kV ESF under-voltage relays and the 4.16 kV ESF degraded voltage relays are required for the ESF systems to automatically function in any accident in which the loss of offsite power is assumed in the safety analysis.

The design function of the Loss of Power 4.16 kV ESF under-voltage relays and the 4.16 kV ESF degraded voltage relays is to provide an input to the associated ESF load sequencer when an under-voltage or degraded voltage condition is sensed from the offsite power source. The normal logic for a loss of power ESF actuation is two of four channels actuating.

The TS allow continued operation with one inoperable loss of power instrumentation channel if the channel is placed in the tripped condition within 72 hours. There is no action in the TS if more than one channel is inoperable. The applicable TS for more than one inoperable channel would be TS 3.0.3, which is unduly restrictive. In addition, once the inoperable channel is placed in the tripped condition, there is no provision in the TS to re-enter the action to perform corrective maintenance.

The subject relays perform a support function for the sequencer to start and /or load its associated standby diesel generator (SDG11) for those events involving a loss of off-site power. The ultimate effect of inoperable loss of power instrumentation is that the associated standby diesel generator will not load and is therefore inoperable.

STPNOC may elect to take the sequencer out of service during the corrective maintenance to minimize the potential for an inadvertent actuation signal that would challenge SDG11. Removing the sequencer from service will also make inoperable SDG11 and the components and systems that are actuated by the sequencer when it receives a safety injection (SI) signal with no loss of offsite power. The shortest TS allowed outage time for those systems is 7 days (Emergency Core Cooling, Containment Spray, Essential Cooling Water, Component Cooling Water, and Essential Chilled Water).

The 72 hours proposed as the allowed outage time for the corrective maintenance is conservative compared to the 7-day allowed outage time for the actuated components and the 14-day allowed outage time for the SDG. Although STPNOC expects that the corrective maintenance will be completed in a single evolution, the note is a modification of the action statement and may be entered more than once before the provision expires 30 days after its approval.

The TS action provides for restoration of both affected channels (the intended outcome) or permitting one inoperable channel to be left in the trip condition (consistent with current TS). The shutdown action requirements are consistent with those for an inoperable SDG.

This application is not proposed as a risk-informed application. STPNOC will assess and manage the risk in compliance with 10CFR50.65(a)(4) using the STP Configuration Risk Management Program. If the maintenance evolution were to take 3 days, STPNOC expects the incremental core damage probability to be on the order of $2.7E-07$, conservatively assuming the unavailability of the affected Train A equipment. This risk

is well within limits of STP's planned on-line maintenance and requires no unusual risk management actions.

STPNOC is proposing this amendment as a temporary change because the broad-scope STP Risk Managed TS application will provide a permanent resolution when it is approved.

5.0 Regulatory Safety Analysis

5.1 No Significant Hazards Determination

STPNOC has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10CFR50.92, "Issuance of amendment," as discussed below.

- 1) Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The proposed change to add a note to ACTION 20 for a one-time change to allow corrective maintenance on the Unit 1 Train A loss of power instrumentation does not change the plant design basis, system configuration or operation, and does not add or affect any accident initiator.

Therefore, STPNOC concludes that there is no significant increase in the probability or consequences of an accident previously evaluated.

- 2) Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The proposed change does not change the plant design basis, system configuration or operation, and does not add or affect any accident initiator.

Therefore, STPNOC concludes the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

- 3) Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

No actual plant equipment or accident analyses will be affected by the proposed change. Additionally, the proposed changes will not relax any criteria used to establish safety limits, will not relax any safety systems settings, and will not relax the bases for any limiting conditions of operation. Therefore, STPNOC concludes the proposed changes do not involve a significant reduction in the margin of safety.

Conclusion

Based upon the analysis provided herein, the proposed amendments do not involve a significant hazards consideration.

5.2 Applicable Regulatory Requirements/Criteria

The regulatory basis for Technical Specification 3.3.2, "Loss of Power Instrumentation," is to ensure that sufficient power will be available to supply the safety-related equipment required for: (1) the safe shutdown of the facility, and (2) the mitigation and control of accident conditions within the facility. The minimum specified independent and redundant A.C. and D.C. sources satisfy the requirements of General Design Criteria (GDC) 17 of Appendix A to 10CFR Part 50.

The South Texas design has met GDC 2 and 4 with respect to structures, systems, and components of the onsite A.C. and D.C. power system being capable of withstanding the effects of natural phenomena (such as earthquake, tornadoes, hurricanes, and floods), missiles, and environmental conditions associated with normal operation and postulated accidents.

The South Texas design has met GDC 5 with respect to structures, systems, and components of the A.C. and D.C. onsite power system. The onsite power system and components associated with Units 1 and 2 are housed in physically separate seismic Category I structures and are not shared.

The South Texas design has met GDC 17 which requires that all redundant equipment and circuits are separated by physically locating them in separate areas, separating by distance in the same area, and/or providing barriers between them.

The South Texas design has met GDC 18 with respect to the onsite A. C. and D.C. power system. The onsite power system is designed to be testable during station operation as well as when the station is shut down.

Because the proposed changes do not alter the design basis, change the plant configuration or significantly change operation procedures, STP maintains compliance with all applicable regulatory requirements.

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

6.0 Environmental Considerations

10 CFR 51.22(b) specifies the criteria for categorical exclusions from the requirements for a specific environmental assessment per 10 CFR 51.21. This amendment request meets the criteria specified in 10 CFR 51.22(c)(9). The specific criteria contained in this section are discussed below.

(i) the amendment involves no significant hazards consideration

As demonstrated in the No Significant Hazards Consideration Determination, the requested license amendment does not involve any significant hazards consideration.

(ii) there is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite

The requested license amendment involves no change to the facility and does not involve any change in the manner of operation of any plant systems involving the generation, collection or processing of radioactive materials or other types of effluents. Therefore, no increase in the amounts of effluents or new types of effluents would be created.

(iii) there is no significant increase in individual or cumulative occupational radiation exposure

The requested license amendment involves no change to the facility and will not increase the radiation dose resulting from the operation of any plant system. Furthermore, implementation of this proposed change will not involve work activities which could contribute to occupational radiation exposure. Therefore, there will be no increase in individual or cumulative occupational radiation exposure associated with this proposed change.

Based on the above it is concluded that there will be no impact on the environment resulting from this change. The change meets the criteria specified in 10 CFR 51.22 for a categorical exclusion from the requirements of 10 CFR 51.21 relative to specific environmental assessment by the Commission.

7.0 References

1. South Texas Project Updated Final Safety Analysis Report

ATTACHMENT 2

**PROPOSED TECHNICAL SPECIFICATION
CHANGES**

No Changes

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
8. Loss of Power					
a. 4.16 kV ESF Bus Under-voltage-Loss of Voltage	4/bus	2/bus	3 /bus	1, 2, 3, 4	20
b. 4.16 kV ESF Bus Under-voltage-Tolerable Degraded Voltage Coincident with SI	4/bus	2/bus	3/bus	1, 2, 3, 4	20
c. 4. 16 kV ESF Bus Under-voltage - Sustained Degraded Voltage	4/bus	2/bus	3/bus	1, 2, 3, 4	20
9. Engineered Safety Features Actuation System Interlocks					
a. Pressurizer Pressure, P-11	3	2	2	1, 2, 3	21
b. Low-Low T_{avg} , P-12	4	2	3	1, 2, 3	21
c. Reactor Trip, P-4	2	1	2	1, 2, 3	23

SOUTH TEXAS - UNITS 1 & 2

3/4 3-24

Unit 1 - Amendment No. 1
Unit 2 - Amendment No.

TABLE 3.3-3 (Continued)

ACTION STATEMENTS (Continued)

2. With two less than the Minimum Channels OPERABLE requirement for RCB Purge Radioactivity-High, operation may continue provided the containment purge supply and exhaust valves are maintained closed.
- c) MODE 6#: With less than the Minimum Channels OPERABLE requirement for RCB Purge Radioactivity - High, apply the requirements of Technical Specification 3.9.9 for an inoperable Containment Ventilation Isolation System.

NOTE:

With one less than the Minimum Channels Operable requirement for RCB Purge Radioactivity-High, Supplementary or Normal containment purge supply and isolation valves may be open for up to 6 hours at a time for required purge operation provided the valves are under administrative control.

- ACTION 19 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- ACTION 20 - With the number of OPERABLE channels one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may proceed provided the following conditions are satisfied:
- a. For Functional Units with installed bypass test capability, the inoperable channel may be placed in bypass, and must be placed in the tripped condition within 72 hours.

Note: A channel may be bypassed for up to 12 hours for surveillance testing per Specification 4.3.2.1, provided no more than one channel is in bypass at any time.
 - b. For Functional Units with no installed bypass test capability,
 1. The inoperable channel is placed in the tripped condition within 72 hours, and
 2. The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels per Specification 4.3.2.1.

Note:

For Unit 1 Train A only: Up to two channels of loss of power instrumentation (Functional Unit #8) may be inoperable for 72 hours for the purpose of restoring an inoperable channel to operable status. With two channels inoperable, within 72 hours restore the inoperable channels to OPERABLE status, or restore the Minimum Channels Operable requirement with the inoperable channel in the tripped condition, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. This provision shall expire 30 days after approval of the amendment.

- ACTION 21 - With less than the Minimum Number of Channels OPERABLE, within 1 hour determine by observation of the associated permissive annunciator window(s) that the interlock is in its required state for the existing plant condition, or apply Specification 3.0.3.
- ACTION 22 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 24 hours, or be in at least HOT STANDBY within the next 6 hours and in at least HOT SHUTDOWN within the following 6 hours; however, one channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1 provided the other channel is OPERABLE.
- ACTION 23 - With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within 6 hours and in at least HOT SHUTDOWN within the following 6 hours.