



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

December 29, 1999  
NOC-AE-000738  
File No.: G20.02  
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U. S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, DC 20555

South Texas Project  
Unit 1  
Docket No. STN 50-498  
Basis for Requesting Enforcement Discretion from  
Technical Specification 3.8.3.1 Limiting Condition for Operation Action Statement

On December 28, 1999, at 1321 hours, Unit 1 experienced a failure of the inverter which powers the 120 VAC Vital Distribution Panel 1203 from its associated DC bus. Distribution Panel 1203 has been reenergized from the 15 KVA 480/120 volt transformer powered by Class 1E 480 volt bus E1B1. The cause of the inverter failure was a failed firing circuit board. Repairs and testing plan will be completed to restore inverter operability. Technical Specification 3.8.3.1.f Action b requires that Distribution Panel 1203 be reenergized from its associated inverter connected to its associated DC bus within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. It is anticipated that an additional 24 hours or a total allowed outage time of 48 hours may be required to complete repairs and testing to restore the inverter to OPERABLE status.

This correspondence provides a basis for enforcement discretion from the requirements of Technical Specification 3.8.3.1.f Action b as it applies to the Onsite Power Distribution for an additional 24 hours, on a one-time basis, for Unit 1 to facilitate repairs to the inverter which powers the 120 VAC Vital Distribution Panel 1203. The South Texas Project is providing this basis for consideration by the Nuclear Regulatory Commission in advance of a formal request for enforcement discretion due to the relatively strict time constraints involved with this condition. Should a formal request for enforcement discretion be required, it will be submitted in a timely manner to support the Nuclear Regulatory Commission decision-making process.

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The attachment provides the information supporting a request for enforcement discretion as required by the Nuclear Regulatory Commission's Inspection Manual (Part 9900 - Technical Guidance), "Operations-Notices of Enforcement Discretion." The information contained in the attachment to this document supports that the health and safety of the public will be protected with this enforcement discretion.

If you should have any questions concerning this matter please contact either S. M. Head at (361) 972-7136 or me at (361) 972-7800.



G. L. Parkey  
Plant General Manager

KJT/

Attachment: Information Pursuant To The Nuclear Regulatory Commission's Inspection Manual (Part 9900 - Technical Guidance), "Operations-Notices of Enforcement Discretion."

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**Information Pursuant To The Nuclear Regulatory Commission's Inspection Manual (Part 9900 - Technical Guidance), "Operations-Notices of Enforcement Discretion."**

**1) The Technical Specification or other license conditions that will be affected.**

The South Texas Project specifically requests Enforcement Discretion from the shutdown requirement of ACTION "b" of Technical Specification 3.8.3.1.f. Technical Specification 3.8.3.1.f ACTION "b" requires:

"With one A.C. vital distribution panel either not energized from its associated inverter, or with the inverter not connected to its associated D.C. bus: (1) reenergize the A.C. distribution panel within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours; and (2) reenergize the A.C. vital distribution panel from its associated inverter connected to its associated D.C. bus within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours."

The South Texas Project requests with regards to item (2), an extension of the 24 hours Allowed Outage Time to a total of 48 hours.

**2) The circumstance surrounding the situation, including root causes, the need for prompt action, and identification of any relevant historical events.**

Unit 1 is currently in Mode 1 at 100% power. On December 28, 1999, at 1321 hours, the Train B Channel III Class 1E Inverter was declared inoperable due to a failure which resulted in a loss of the inverter which connects Distribution Panel DP1203 to its associated DC bus. Distribution Panel DP1203 power was restored by transfer to the 15 KVA 480/120 volt transformer powered by Class 1E 480 volt bus E1B1.

The failure of the Train B Channel III Class 1E Inverter has been determined to be a failed firing circuit board. Repairs will be followed by a performance test of the inverter to verify operability. It is anticipated that corrective maintenance can not be performed within the remaining Allowed Outage time of Technical Specification 3.8.3.1.

Prompt action is requested to approve the enforcement discretion to allow discretion from the shutdown requirements of Action b of Technical Specification 3.8.3.1 for 24 hours until 1321 hours on December 30, 1999. This should allow adequate time to complete repairs

and perform post maintenance testing and return the Train B Channel III Class 1E Distribution Panel DP1203 inverter to service without placing the plant through a transient to shutdown and cooldown. The South Texas Project Unit 1 expects to remain at 100% power during the requested period of noncompliance.

The South Texas Project has experienced three other failures of the Train B Channel III Class 1E inverter which powers the 120 V AC Vital Distribution Panel for DP1203. A failed ferroresonant transformer was replaced in 1989. Additionally, a failed firing circuit board was replaced in 1989 and 1992.

3) **The safety basis for the request, including an evaluation of the safety significance and potential consequences of the proposed course of action including a qualitative risk assessment derived from the licensee's PRA.**

Train B Channel III Class 1E inverter power supply consists of the failed 7.5KVA inverter that supplies Distribution Panel DP1203. Distribution Panel DP1203 provides power to one of four channels to the Nuclear Steam Supply System process cabinet, to one of four channels of the Nuclear Instrumentation System control and instrumentation power, to one of three channels of the Solid State Protection System logic and actuation cabinets, to the Qualified Display Processing System Auxiliary Processing Cabinets B1 and B2, and to the Radiation Monitoring System Panel Isolation Relay Cabinet. The Qualified Display Processing System provides steam generator 1B power operated relief valve control, auxiliary feedwater pump 12 throttle valve control and other components.

Since Channel III 120 volt Vital AC power to Distribution Panel DP1203 will remain energized from its associated voltage regulating transformer, there is no significant impact on plant safety. In the event of a Loss of Offsite Power, Standby Diesel Generator 12 would provide backup power to the voltage regulator. If Standby Diesel Generator 12 did not start, then the loads associated with Panel DP1203 would not energize. Failure of the loads associated with Distribution Panel DP1203 is within the design basis of the plant.

For purposes of this request, the case where Channel III inverter is out of service and a Station Blackout occurs results in a situation where the plant can still cope for the required time period.

To determine the probability of the above sequence of events occurring, the South Texas Project Probabilistic Safety Assessment was used to determine the impact of a total loss of Probabilistic Safety Assessment modeled components powered by Distribution Panel DP1203. The results indicate that the increase in the core damage frequency as a result of

this request is not risk significant, therefore, a one-time extension from 24 hours to 48 hours for Technical Specification 3.8.3.1.f is not significant to plant safety.

Risk and reliability analysis has determined that the cumulative risk significance of having the 120 volt AC Vital Distribution Panel DP1203 and its associated inverter not connected to the DC Bus for 48 hours is well below the 1.0E-06 risk threshold referenced in Figure 4-3 of the EPRI Probabilistic Safety Assessment Applications Guide (TR-105396) for temporary risk increases.

- 4) **The basis for the licensee's conclusion that the noncompliance will not be of potential detriment to the public health and safety and that no significant hazard consideration is involved.**

#### **Determination of No Significant Hazard Consideration**

1. **Does the change involve a significant increase in the probability or consequence of an accident previously evaluated?**

This noncompliance will not alter assumptions relative to the mitigation of an accident or transient event. Therefore, this noncompliance will not involve a significant increase in the probability or consequences of an accident previously evaluated.

Risk and reliability analysis has determined that the cumulative risk significance of having the 120 volt AC Vital Distribution Panel DP1203 and its associated inverter not connected to the DC Bus for 48 hours is well below the 1.0E-06 risk threshold referenced in NRC Regulatory Guide 1.174, "An Approach for using PRA in risk-informed decisions on Plant Specific Changes to the current Licensing Basis", for temporary risk increases.

2. **Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?**

This noncompliance will not physically alter the plant. No new or different type of equipment will be installed by this noncompliance. The changes in methods governing normal plant operation are consistent with current safety analysis assumptions. No changes in mode of operation of the Onsite Power Distribution or the Class 1E Electrical Distribution Systems are proposed, or in the configuration of the systems. No change to the system as evaluated in the South Texas Project safety analysis is proposed.

Therefore, this noncompliance does not create the possibility of a new or different kind of accident from any accident previously evaluated.

**3. Does this change involve a significant reduction in a margin of safety?**

Risk and reliability analysis has determined that the cumulative risk significance of having the 120 volt AC Vital Distribution Panel DP1203 and its associated inverter not connected to the DC Bus for 48 hours is well below the 1.0E-06 risk threshold referenced in NRC Regulatory Guide 1.174, "An Approach for using PRA in risk-informed decisions on Plant Specific Changes to the current Licensing Basis", for temporary risk increases.

The current plant configuration is allowed by the Technical Specification until power through the inverter can be restored. Powering the instruments from the Class 1E voltage regulating transformer is within the normal design and operation of the plant. In addition, the instruments powered by the Class 1E voltage regulating transformer will be available following a loss of offsite power. Therefore, the proposed noncompliance does not involve a reduction in the margin of safety as defined in the basis for the Technical Specifications.

Based on the above, it has been concluded that there is not a potential detriment to the public health and safety and that no significant hazard consideration exists as a result of this noncompliance.

**5) The basis for the licensee's conclusion that the noncompliance will not involve adverse consequences to the environment.**

The South Texas Project has reviewed the proposed Enforcement Discretion request and the Nuclear Regulatory Commission Final Environmental Assessment for the South Texas Project Units 1 and 2 and has concluded that pursuant to 10CFR51, there are no significant radiological or non-radiological impacts associated with the proposed Enforcement Discretion request.

This proposed Enforcement Discretion request has been evaluated against the criteria for and identification of licensing and regulatory actions requiring environmental assessment in accordance with 10CFR51.21. It has been determined that the proposed changes meet the criteria for categorical exclusion as provided for under 10CFR51.22(c)(9). The following is a discussion of how the proposed Enforcement Discretion request meets the criteria for categorical exclusion.

- (i) The proposed change involves no Significant Hazards Consideration (refer to the No Significant Hazards Consideration section of this Enforcement Discretion Request),
- (ii) there is no significant change in the types or significant increase in the amounts of any effluent that may be released offsite since the proposed changes do not affect the generation of any radioactive effluent nor do they affect any of the permitted release paths, and
- (iii) there is no significant increase in individual or cumulative occupational radiation exposure.

Accordingly, the proposed change meets the eligibility criteria for categorical exclusion set forth in 10CFR51.22(c)(9). Based on the aforementioned and pursuant to 10CFR51.22(b), no environmental assessment or environmental impact statement need be prepared.

6) **Any proposed compensatory measures.**

These compensatory measures were not quantified in the risk analysis performed for this proposed Enforcement Discretion request. The following compensatory measures will be implemented during the period of noncompliance.

- The Control Room personnel will be briefed on the impact of the complete failure of the DP1203 and its effect on associated components. This failure is addressed in the Station's Off-Normal Procedure "The Loss of 120VAC Class Vital Distribution."
- Maintenance and surveillance activities with the potential for reactor/turbine trip or on-site power interruption will be suspended.
- Switchyard maintenance that could cause a loss of offsite power event will be suspended.

It should be noted that alternate AC power sources will not be intentionally removed from service during the period of noncompliance.

7) **The justification for the duration of the noncompliance.**

An additional 24 hours is requested to allow sufficient time to complete the maintenance and testing of the affected inverter. The duration of the request is non-risk significant.



Risk and reliability analysis has determined that the cumulative risk significance of continued inoperability of the 120 volt AC Distribution Panel DP1203 inverter for 48 hours is well below the 1.0E-06 risk threshold referenced in NRC Regulatory Guide 1.174, "An Approach for using PRA in risk-informed decisions on Plant Specific Changes to the current Licensing Basis", for temporary risk increases. The Probabilistic Safety Assessment Applications Guide states that temporary conditions with a risk significance below 1.0E-06 are non-risk significant.

The South Texas Project estimates that the work will require an additional 24 hours to complete vice the current Allowed Outage Time of 24 hours. This estimate is based on working with the necessary resources continuously until the work is complete.

8) **A statement that the request has been approved by the Plant Operations Review Committee**

The South Texas Project Plant Operations Review Committee will review the proposed Enforcement Discretion request to concur with the basis of this request prior to formal submittal.

9) **Discussion of How the Applicable Notice of Enforcement Discretion Criterion for the Appropriate Plant Condition Specified in Section B is Satisfied**

The applicable Notice of Enforcement Discretion criterion for the request of an additional 24 hours to the allowed outage time for the Onsite Power Distribution is considered to be a Criterion 1. Criterion 1 reads as follows:

1. "For an operating plant, the NOED is intended to (a) avoid undesirable transients as a result of forcing compliance with the license condition and, thus, minimize potential safety consequences and operational risks or (b) eliminate testing, inspection, or system realignment that is inappropriate for the particular plant condition."

The South Texas Project Enforcement Discretion request for Technical Specification 3.8.3.1.f Action "b" is to facilitate affected inverter repair and testing. The additional time is needed to avoid shutdown of the unit which is an undesirable transient as stated in the above criterion.

As stated earlier, the requested extension to the Limiting Condition for Operation action time provides the time required to perform the repairs and testing activities necessary to

restore the inverter for Distribution Panel DP1203 to an operable status. As a result of these activities, the condition of the Onsite Power Distribution System will be optimized, from a risk perspective, while avoiding administrative requirements of a power reduction transient that could increase the potential for plant trips which challenge safety systems.

10) **Follow-up License Amendment Required**

No planned follow-up License Amendment will be required.

11) **Additional information for enforcement discretion involving severe weather or other natural events**

This proposed enforcement discretion is not in response to severe weather or natural event and there is no anticipated severe weather or other natural event during the requested period of noncompliance.