

December 23, 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, UNIT 2 - ISSUANCE OF AMENDMENT
CONCERNING ONE-TIME ALLOWED OUTAGE TIME EXTENSION FOR
NO. 22 EMERGENCY DIESEL GENERATOR (TAC NO. MC1616)

Dear Mr. Sheppard:

The Commission has issued the enclosed Amendment No. 148 to Facility Operating License No. NPF-80 for the South Texas Project, Unit 2. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated December 23, 2003. The license amendment is issued under the provisions of Section 50.91(a)(5) of Title 10 of the Code of Federal Regulations due to the time critical nature of the amendment.

The amendment revises TS 3.8.1, "AC Sources – Operating," to extend the allowed outage time for Unit 2 Standby Diesel Generator 22 from 14 days to 21 days as a one-time change for the purpose of collecting data associated with failure of SDG-22.

A copy of our related Safety Evaluation is also enclosed. The Safety Evaluation describes the emergency circumstances under which the amendments were issued and the final determination of no significant hazards. The Notice of Issuance, addressing the final no significant hazards determination and opportunity for a hearing, associated with the emergency circumstances, will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

/RA by Thomas W. Alexion for/
David Jaffe, Senior Project Manager, Section 1
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-499

Enclosures: 1. Amendment No. 148 to NPF-80
2. Safety Evaluation

cc w/encls: See next page

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Dated: December 23, 2003

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STP NUCLEAR OPERATING COMPANY

DOCKET NO. 50-499

SOUTH TEXAS PROJECT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 148
License No. NPF-80

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by STP Nuclear Operating Company* acting on behalf of itself and for Texas Genco, LP, the City Public Service Board of San Antonio (CPS), AEP Texas Central Company, and the City of Austin, Texas (COA) (the licensees), dated December 23, 2003, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

*STP Nuclear Operating Company is authorized to act for Texas Genco, LP, the City Public Service Board of San Antonio, AEP Texas Central Company, and the City of Austin, Texas, and has exclusive responsibility and control over the physical construction, operation, and maintenance of the facility.

2. Accordingly, (a) the licensee shall implement the compensatory measures described in its application dated December 23, 2003, and discussed in sections 3.1.1.1 and 4.0 of the NRC staff's Safety Evaluation dated December 23, 2003, enclosed with this amendment; (b) the licensee may make changes to those compensatory measures without first obtaining a license amendment provided that the change does not meet any of the criteria set forth in 10 CFR 50.59(c)(2); (c) the licensee shall obtain a license amendment pursuant to 10 CFR 50.90 before implementing any such change that does meet one of the criteria in 10 CFR 50.59(c)(2); and (d) the license is amended by changes to the Technical Specifications as indicated in the enclosure to this license amendment and paragraph 2.C.(2) of Facility Operating License No. NPF-80 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 148, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The STP Nuclear Operating Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. The license amendment is effective as of its date of issuance and shall be implemented immediately.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Robert A. Gramm, Chief, Section 1
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: December 23, 2003

ATTACHMENT TO LICENSE AMENDMENT NO. 148

FACILITY OPERATING LICENSE NO. NPF-80

DOCKET NO. 50-499

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

REMOVE

3/4 8-1
3/4 8-2
3/4 8-7

INSERT

3/4 8-1
3/4 8-2
3/4 8-7

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 148 TO

FACILITY OPERATING LICENSE NO. NPF-80

STP NUCLEAR OPERATING COMPANY, ET AL.

SOUTH TEXAS PROJECT, UNIT 2

DOCKET NO. 50-499

1.0 INTRODUCTION

By application dated December 23, 2003, STP Nuclear Operating Company (the licensee), requested changes to the Technical Specifications (TSs) for South Texas Project (STP), Unit 2.

The proposed changes would revise TS 3.8.1, "AC [alternating current] Sources – Operating," to extend the allowed outage time (AOT) for Unit 2 Standby Diesel Generator (SDG)-22 from 14 days to 21 days as a one-time change for the purpose of collecting data associated with failure of SDG-22.

Specifically, for TS 3.8.1, ACTION Statements a, c, and f (which provide required restoration times for inoperable SDGs, referred to in the TS as standby diesel generators), the following note would be applied:

- (12) For the Unit 2 Train B standby diesel generator (SDG-22) failure of December 9, 2003, restore the inoperable standby diesel generator to OPERABLE status within 21 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

2.0 REGULATORY EVALUATION

The staff finds that the licensee in Sections 4.3, 4.4, and 5.2 of its December 23, 2003, submittal identified the applicable regulatory requirements. The regulatory guidance and requirements which the staff considered in reviewing the application included:

1. Regulatory Guide (RG) 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis,"
2. RG 1.182, "Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants,"
3. Title 10, Code of Federal Regulations (10 CFR), Section 50.36, "Technical specifications,"

4. 10 CFR 50.65(a)(4), "Requirements for monitoring the effectiveness of maintenance at nuclear power plants,"
5. 10 CFR Part 50, Appendix A, General Design Criterion (GDC) 17, "Electric power systems," and
6. 10 CFR Section 50.63, "Loss of all alternating current power."

3.0 TECHNICAL EVALUATION

The staff has reviewed the licensee's regulatory and technical analyses in support of its proposed license amendment which is described in the licensee's submittal.

The licensee's December 23, 2003, submittal is risk-informed in that the licensee considered deterministic¹ and probabilistic² safety aspects. The NRC staff evaluated the deterministic and probabilistic assessments provided by the licensee.

3.1 Deterministic Evaluation

On October 31, 1996, the NRC staff issued License Amendment Nos. 85 and 72 to the Facility Operating Licenses for STP, Units 1 and 2. License Amendment Nos. 85 and 72 extended the AOT for a single SDG to 14 days. The NRC staff's safety evaluation, issued in support of License Amendment Nos. 85 and 72, contained a deterministic evaluation to support the extension of the AOT; the evaluation considered the ability of the plant to cope with various accident scenarios with only two of the three SDGs operable, considering the effect of additional failures. The NRC staff, in section 4.3.j of the safety evaluation concluded that:

The staff has performed a deterministic evaluation of the licensee's proposed amendment, using engineering judgement to evaluate the risk associated with single train operation of STP, and determined that the proposed amendment is acceptable. Based on its review, the staff has concluded that the STP design has sufficient redundancy to allow the proposed AOT extensions and that the STP design will continue to meet the requirements of 10 CFR 50 .46, "Acceptance criteria for emergency core cooling systems for light-water nuclear power reactors."

The NRC staff concludes that the October 31, 1996, safety evaluation and associated deterministic conclusions are applicable to the proposed 21 day AOT for SDG-22 since the

¹ A deterministic analysis is an assessment of the availability of safety equipment necessary to ameliorate the consequences of design basis accidents.

² A probabilistic analysis is an assessment of the probability that given accident sequences will lead to core damage and/or a large early release of radioactivity.

deterministic evaluation is a function of the equipment configuration and the accident scenarios of interest, neither having changed. The NRC staff, however, has reevaluated the STP Unit 2 electrical design to assure that power to all critical safety equipment is maintained even in the event that off-site power is lost.

The NRC staff understands that the purpose of the 7-day AOT extension is to obtain data associated with the failure of SDG-22. Specifically, during the 7-day AOT extension, the licensee will take SDG-21 or SDG-23 out of source for the purpose of collecting nondestructive testing data, thus rendering one of them inoperable under the provisions of existing TS 3.8.1.1, ACTION f., for up to 24 hours per outage.

3.1.1 STP Electrical Design

GDC 17, requires, in part, that nuclear power plants have onsite and offsite electric power systems to permit the functioning of structures, systems, and components that are important to safety. The onsite system is required to have sufficient independence, redundancy, and testability to perform its safety function, assuming a single failure. The offsite power system is required to be supplied by two physically independent circuits that are designed and located so as to minimize, to the extent practical, the likelihood of their simultaneous failure under operating and postulated accident and environmental conditions. In addition, this criterion requires provisions to minimize the probability of losing electric power from the remaining electric power supplies as a result of loss of power from the unit, the offsite transmission network, or the onsite power supplies.

The onsite power system for STP is provided with preferred power from the offsite system through two physically independent and redundant sources of power in accordance with 10 CFR Part 50, Appendix A, GDC 17. With regards to the safety-related (Class 1E) power supply configuration, normal power for the safety-related buses is supplied from either the unit auxiliary transformer through the 13.8 kV auxiliary buses or one preferred (offsite) power source from the 345 kV switchyard through the 13.3 kV standby buses. A second preferred (offsite) circuit is available for all standby buses from a second standby transformer. A third source of offsite power is available from the 138 kV system which feeds emergency bus 1L. Each 13 kV standby bus feeds a safety-related 4.16 kV bus through one of three auxiliary engineered safety feature (ESF) transformers (AUX ESFs). Emergency Bus 1L is capable of feeding any of the AUX ESF transformers through disconnects into the primary of the transformer. Each AUX ESF transformer supplies power to an associated Class 1E 4.16-kV bus. For each safety-related bus normally fed by its associated ESF transformer, the capability exists for each bus to be supplied via the other preferred (offsite) source connection.

The onsite power system is divided into three load groups. Each load group consists of an arrangement of buses, transformers, switching equipment, and loads fed from a common power supply.

The onsite standby power system includes Class 1E AC and direct current (DC) power supply capability for equipment used to achieve and maintain a cold shutdown of the plant and to mitigate the consequences of a design basis accident (DBA). Two of the three load groups are needed to mitigate the DBA. Any one load group load group is independently capable of responding to a loss of offsite power (LOOP). With regards to the Class 1E AC power, each of the three Class 1E load groups, at the 4.16-kV bus level, is capable of being powered from an

independent SDG (one per load group) which functions to provide power in the event of a loss of the preferred (offsite) power source.

The Commission's regulation 10 CFR 50.63, "Loss of all alternating current power," requires, the capability to withstand for a specified duration and recover from a station blackout, as defined in 10 CFR 50.2. The specified station blackout duration shall be based upon four factors including the reliability of the onsite emergency power supplies. An alternate ac power (AAC) source constitutes an acceptable capability to withstand a station blackout. AAC source(s) serving a multiple unit site where onsite emergency AC sources are not shared between units is acceptable.

The STP updated final safety analysis report (UFSAR), Section 8.3.4, Station Blackout, indicates that any one of the three independent SDGs may be credited as the AAC power source. The same section indicates that STP has also been classified as a four-hour coping plant with two independent SDGs. Therefore with the SDG-22 inoperable, STP Unit 2 reverts back to its four-hour coping status.

3.1.1.1 Evaluation of STP Electrical Design

STP OPERABILITY requirements for the onsite and offsite AC sources during plant operation (MODES 1, 2, 3, and 4) are specified in TS 3.8.1. TS 3.8.1 includes AOTs that permit STP to continue to operate for 14 days with one SDG inoperable, 24 hours with two SDGs inoperable, and 2 hours with three SDGs inoperable.

The proposed change only applies to the one-time inoperability of the SDG-22 due to the failure which occurred on December 9, 2003, and would permit continued operation of the plant during an additional 7 days for the purpose of collecting data associated with failure of SDG-22. Any condition associated with testing the remaining two SDGs that would require declaring the SDG being tested inoperable would require entering the Required Actions for two or more inoperable SDGs, as required by the current TSs.

Because the STP design has three Class 1E load groups, each powered by one of three independent SDGs, the plant retains a substantial capability to mitigate a DBA with an assumed single failure during the extended period that SDG-22 is inoperable. This is verified by Table 1, referenced in the licensee's December 23, 2003, application which contains a short list (9 items) of functions affected with one inoperable SDG and an assumed single failure.

Also, as stated above, STP UFSAR Section 8.3.4, indicates that any one of the three independent SDGs may be credited as the AAC power source. The same section indicates that STP has also been classified as a four hour coping plant with two independent SDGs. Therefore, with SDG-22 inoperable, STP Unit 2 reverts back to its four-hour coping status. The licensee referenced in its December 23, 2003, letter that there has not been any modification to either STP unit that changes, affects, or shortens the four-hour coping period since the original Station Blackout submittal.

The licensee is also implementing compensatory measures during the extended AOT, in addition to those that are called for under STP's existing Configuration Risk Management Program. Following are the additional compensatory measures taken by STP:

- Notification of the transmission/distribution service providers (TDSP) of the condition and of the maintenance restrictions required for the STP switchyard.
- Hang extended AOT (EAOT) protected train signs.
- Planned maintenance [except to perform inspections of SDGs-21 and -23] on required systems, subsystems, trains, components, and devices that depend on the other trains of equipment during the EAOT SHALL NOT be performed.
- No maintenance that could result in an inoperable OPEN containment penetration.
- Containment purges shall be for pressure control only and for short duration.
- No planned maintenance on the Unit 2 Technical Support Center SDG.
- No planned maintenance on Load Center 2W.
- No planned maintenance on Motor Control Center 2G8.
- No planned maintenance on the Positive Displacement Charging Pump (PDP).
- No planned maintenance on the Emergency Transformer OR the 138 kV Blessing to STP and Lane City to Bay City lines.
- No maintenance activities in the switchyard that could directly cause a LOOP event unless required to ensure the continued reliability and availability of the offsite power sources.
- No planned maintenance on the turbine-driven auxiliary feedwater pump.
- Attempt to verify that the station is not under hurricane, tornado, or flood watches or warnings. (Note: the licensee has indicated that no severe weather is currently forecast.)
- Attempt to verify with the TDSP that no adverse weather conditions exist in the areas of our offsite power supplies that challenge the stability of grid.
- Ensure the work schedule contains no planned maintenance on Switchgear 2L or 2K.

With regard to severe weather, the amendment request states that severe weather events at the STP location are dominated by high winds caused by tornadoes and hurricanes. It states that tornadoes can occur at any time during a year, but typically occur most frequently between March and June. The hurricane season runs from May to early November.

Regarding icing, Section 8.2.1.1 of the STP UFSAR states that the structures for these circuits [transmission lines], as well as the 345 kV switchyard, are built to withstand hurricane force winds. In this area, the ice-loading condition on transmission lines is not considered significant since it is less than the hurricane wind loading on transmission or substation structures. In addition, the licensee committed in the December 23, 2003, letter to revise STP station procedures for responding to inclement weather to include guidance for coping with icing conditions that are affecting the offsite distribution system to adopt a strategy similar to the

strategy currently in place to respond to hurricane force winds onsite. Specifically, in the event of a determination by the Duty Plant Manager after consultation with the TDSP that icing conditions in the area of STP may result in a loss of all power to the switchyard, STP will commence a shutdown of Unit 2 to MODE 3. The procedure will also provide that one SDG be started and loaded to its ESF bus and that the ESF bus be subsequently removed from offsite power. The licensee stated that these procedure revisions will be completed by December 23, 2003.

The licensee has developed procedural guidance to supply electrical power to an ESF bus in a unit that has lost all electrical power to its ESF busses from a functioning SDG in the opposite unit. This procedure will only be implemented when the failure of emergency power sources in a unit has occurred such that the remaining emergency power is judged to be inadequate for mitigation of the event and sufficient power is available in the opposite unit to meet its electrical power requirements.

The NRC is confirming by license condition that the licensee will not change these compensatory measures except in accordance with an evaluation of the criteria in 10 CFR 50.59(c)(2).

3.1.1.2 Conclusions Regarding STP Electrical Design

The staff reviewed the licensee's submittal and found the proposed changes related to the ACTION statements in TS 3.8.1 to be acceptable based upon deterministic factors:

- The retention of substantial capability in the STP design to mitigate a DBA with an assumed single failure during the extended period that SDG-22 is inoperable.
- The four-hour station blackout coping capability of STP Unit 2 during the extended period that SDG-22 is inoperable.
- The additional compensatory measures taken by STP during the extended period that SDG 22 is inoperable, over and above those to be taken under the STP existing Configuration Risk Management Program.
- The commitment to commence a shutdown of Unit 2 to Mode 3 in the event of a determination by the Duty Plant Manager after consultation with the TDSP that icing conditions in the area of STP may result in a loss of all power to the STP switchyard.
- The ability to supply electrical power to an ESF bus in a unit that has lost all electrical power to its ESF busses from a functioning SDG in the opposite unit.

3.2 Probabilistic Evaluation

3.2.1 Risk Assessment Evaluation

In evaluating the risk information submitted by the licensee, the NRC staff followed the three-tiered approach documented in RG 1.177, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications."

Under the first tier, the staff determines if the proposed change is consistent with the NRC's Safety Goal Policy Statement, as documented in RG 1.174. Specifically, the first tier objective is to ensure that the plant risk does not increase unacceptably during the period the equipment is taken out of service.

The second tier addresses the need to preclude potentially high-risk plant configurations that could result if additional equipment, not associated with the change, is taken out of service during the proposed 7-day AOT extension, for a total AOT of 21 days.

The third tier addresses the establishment of a configuration risk management program for identifying risk-significant configurations resulting from maintenance or other operational activities, and taking appropriate compensatory measures to avoid such configurations.

3.2.2 Basis and Quality of Risk Assessment

The licensee used its Probabilistic Risk Assessment (PRA) model and appropriate conservative assumptions to assess the risk increase associated with operation at power for a period of 7 additional days without an operable SDG-22. The risk consideration included maintaining defense-in-depth and quantifying risk to determine the change in Core Damage Frequency (CDF) and Large Early Release Frequency (LERF) as a result of the proposed 7-day AOT extension for the SDG-22. Also, the licensee is maintaining the continuous on-line risk management program to control the performance of other risk-significant tasks during the diesel maintenance with consideration of specific compensatory measures to minimize risk. During the proposed 7-day extension, the licensee will perform non-destructive examination (NDE) of the two remaining diesels, SDG-21 and SDG-23, which conservatively requires up to 36 hours for each diesel.

The dominant accident sequences contributing to the assessed risk increase include the occurrence of conditions due to the unavailability of and demand for the use of the SDG-22. During the 7-day extension, both SDG-22 and SDG-21 will be unavailable for up to 36 hours, the duration of SDG-21 inspection, followed by up to additional 36 hours for the inspection for SDG-23 with both SDG-22 and SDG-23 out-of-service. Current TS allows two diesels out of service for 24 hours. The assumption of the accident analysis and design basis of the units demand maintaining at least two trains of the onsite or offsite AC sources operable during accident conditions in the event of an assumed loss of all offsite power or all onsite AC power sources.

TS LCO 3.8.1.1 requires three emergency diesel generator (EDG) sets capable of supplying the onsite Class 1E power distribution subsystems for design-basis accidents (DBAs) assuming single failure affecting any train. TS 3.8.1.1, Action b, states that with one SDG set inoperable, the inoperable EDG set must be returned to operable status within 14 days. Under the proposed amendment for a 7-day AOT extension, all DBA AC power requirements can be met with the operable EDGs without a single failure.

The NRC staff evaluated the quality of the PRA models, major assumptions, and data used in the risk assessment. This evaluation compared the applicable findings from the NRC staff's review of the PRA with the NRC's Standardized Plant Analysis Risk Model (SPAR), Version 3.0.1, for the STP Unit 2 CDF and NRC Manual Chapter 0609, Appendix H for LERF, as well as

findings from similar evaluations of similar plants. The NRC staff found them acceptable, based on the licensee's uncertainty analysis (error factor), which is discussed further below.

3.2.3 Risk Impact of the Proposed Change (Tier 1)

An acceptable approach to risk-informed decisionmaking is to show that the proposed change to the design basis meets several key principles. One of these principles is to show that the proposed change results in a small but acceptable increase in risk in terms of CDF and LERF, and is consistent with the NRC's Safety Goal Policy Statement. Acceptance guidelines for meeting this principle are presented in RG 1.174. The licensee used its PRA model of STP Unit 2 to calculate risk increases due to the proposed AOT extension of 7 days, during which two diesels will be unavailable for 36 hours. Both the incremental conditional core damage probability (ICCDP) and the incremental conditional large early release probability (ICLERP) were assessed. These quantities are a measure of the increase in probability of core damage and large early release, respectively, during a single outage that would last for the entire duration allowed by the proposed change. Based on the proposed one-time extension of 7 days, the incremental changes in CDF and LERF are summarized in the following table:

		Baseline CDF	Incremental Change in CDF	Baseline LERF	Incremental Change in LERF
		9.1E-06/yr		5.2E-07/yr	
ICCDP with 7-day additional AOT	36 hr without SDG 21 & 22		1.9E-6		1.6E-7
	36 hr without SDG 22 & 23		1.9E-6		1.5E-7
	96 hr without SDG 22		2.4E-07		1.89E-8
	Total		4.1E-6		8.5E-7
Total annualized increase in CDF due to 7-day additional AOT			4.1E-6		8.5E-7
RG 1.174 Criteria		< 1.0E-04/yr	< 1.0E-05/yr	< 1.0E-05/yr	< 1.0E-05/yr
Met the Criteria			Yes		Yes

The acceptance guidelines in RG 1.177 and RG 1.174 are for permanent changes, and the proposed extension is a one-time extension. The acceptance guidance criteria in RG 1.177 for annualized CDF increase of 5.0E-07/yr and 5.0E-08 for annualized LERF, respectively, are for permanent changes and are not directly applicable for one time change. For a temporary change, the acceptance guidance criteria and threshold values are generally less restrictive and higher than that of a permanent change by as much as an order of magnitude. Thus, the annualized increases in CDF by 4.1E-06/yr and LERF by 8.5E-07/yr are within the acceptable values of temporary increases, and will increase the baseline CDF and LERF by the respective annualized values for one-year period. Therefore, in accordance with the RG 1.174 guidelines, the licensee's proposed change to allow for a one-time extension of the AOT for an additional 7 days for SDG-22 results in an acceptable increase in risk which is small and consistent with the NRC's Safety Goal Policy Statement.

Parametric evaluation of the uncertainty by the licensee indicated that the error factor, a ratio of 95 percentile (1.7E-5)-to-50 percentile (median), was approximately 2, with the median value of 8.1E-06/yr. As shown in the table, mean value of the baseline CDF is 9.1E-06/yr. Confirmatory calculations of ICCDP and annualized CDF increase using NRC's SPAR, version 3.01, was well within the range. For a large dry containment, the risk impact on LERF is mostly because of a containment bypass and steam generator tube rupture sequences, according to the Significance Determination Process analysis (Appendix H in NRC Manual Chapter 0609), and therefore, acceptable.

Because of the severity of the current failure, as well as a similar failure of the same diesel experienced in 1989, other potential common causes of failure that are either not recognized or not incorporated in the licensee's PRA model were evaluated within the scope of this failure. According to the preliminary evaluation by the licensee on previous NDE examination of other diesels, the licensee concluded that the root-causes and the initiation mechanisms of the 1989 failure and current event are fundamentally different (machining deficiency versus materials defect), indicating that this failure was not initiated and not caused by any additional common causes that were not incorporated in the current licensee PRA. The staff concluded that there is a small probability of potential common mode failure due to excess fatigue, and initiation of the crack(s) will be on a site with defects on materials. Ultrasonic Testing (UT) results indicated materials defects near the crack sites, and no materials defects were identified from the NDE data for other diesels. However, the NDE examination was based on the unit 1 diesels, and the purpose of this 7-day extension is to verify the above discussion.

External events in the licensee PRA model account for approximately 20% of the total CDF with severe weather and flooding as major contributors, leading to LOOP sequences. The LOOP events due to severe weather are dominated by high winds of tornadoes and hurricanes. The potential for severe weather was reviewed based the information provided by the licensee and data available from the web site of the National Oceanographic and Atmospheric Administration (NOAA). According to data reported by the National Climate Data Center (NCDC), the STP site (Matagorda county in Texas) experienced a total of 8 high wind or hail-related bad weather events during a period from January 1, 1950 to July 31, 2003. Based on the information available at their web site (www.ncdc.noaa.gov/), this review was limited to the proposed 7-day outage period from December 23, 2003 to December 30, 2003. In the NCDC report for the time series of probability for tornado cycle, the cumulative probability of severe weather during last 30 days (December) of a year is less than 1%. This statistical data covers a period of 20 years since 1980. Peak seasons of the tornadoes and hurricanes are March through June and May through November, respectively.

The likelihood of having either tornadoes or hurricanes in December for the duration of the repairs would be small if not negligible. The STP plants have not experienced any LOOP caused by icing conditions or ice storms during the entire operating period since March 1987, although both units were shut down during a 1989 ice storm. The likelihood of having an ice storm during the 7-day extension period that will affect the offsite power would be less than one-in-ten-thousand, and the likelihood of core damage as a result of offsite power loss would be small.

3.2.4 Avoidance of High Risk Plant Configurations (Tier 2)

The licensee's PRA will identify and estimate major risk contributors of plant configurations, contributing event sequences, and associated cutsets. Potential major risk contributors include plant equipment failures, human errors and common cause failures. Insights from the risk assessment would be used in identifying and monitoring the plant configurations or conditions that may lead to significant risk increases during implementation of the proposed 7-day AOT extension. The NRC staff finds that the proposed precautions, as well as the proposed compensatory measures listed in Section 3.1.1.1, are adequate for preventing plant configurations or conditions that may increase risk significantly. In conclusion, there is a reasonable assurance that high risk plant configuration will not occur during the proposed 7-day extension period. However, the proposed 7-day extension, during which there is a reasonable likelihood of experiencing predictable and unplanned plant evolutions may result in plant configurations with some risk contribution.

3.2.5 Risk-Informed Configuration Risk Management (Tier 3)

The intent of risk-informed configuration risk management is to ensure that plant safety is maintained and monitored during an extended outage. A formal commitment to maintain a configuration risk management program is necessary on the part of a utility prior to implementation of a risk-informed TS whenever such TS Limiting Condition for Operation (LCO) is entered and risk-significant components are taken out of service. The licensee has programs in place for STP Unit 2 to comply with 10 CFR 50.65(a)(4) to assess and manage risk from proposed maintenance activities. These programs can support the licensee's decision-making regarding the appropriate actions to control risk whenever a risk-informed TS LCO is entered.

The licensee is committed to comply with the risk action thresholds specified in the Section 11.3.7.2 of NUMARC 93-01 in conjunction with the guidelines provided in RG 1.182 as standards for implementation of the maintenance rule, 10 CFR 50.65. With the ICCDP 4.1E-06, the licensee addressed the non-quantifiable factors listed in the Section 4.4, Attachment 1 of the December 23, 2003, letter and will establish risk management actions accordingly. The licensee will adhere to the station configuration risk management program specified in procedure OPGP03-ZA-0091, Revision 5, December 31, 2002.

3.2.6 Summary

The NRC staff has concluded that the proposed 7-day one-time extension of the AOT for the SDG-22 is acceptable. This conclusion is based, in part, on the availability and reliability of offsite power sources, the two redundant EDGs, and the low likelihood of the loss of these power sources and acceptable low risk during the 7-day extended time period. In addition, the licensee will take compensatory measures limiting activities that have the potential to result in a plant configuration with the potential for a transient or to adversely impact the availability of onsite or offsite power supplies. The licensee will establish a plant configuration management program, and continue to monitor plant configurations to avoid high risk configurations. Therefore, the NRC staff finds that there is no undue risk to public health and safety associated with granting the 7-day AOT extension.

4.0 REGULATORY COMMITMENTS

During the 7 additional days of the SDG-22 AOT extension, the licensee has made the following commitments (as stated):

1. STP will revise station procedures for responding to inclement weather to include guidance for coping with icing conditions that are affecting the offsite distribution system to adopt a similar strategy to the strategy currently in place to respond to hurricane force winds onsite. Specifically, in the event of a determination by the Duty Plant Manager after consultation with the TDSP that icing conditions in the area of STP may result in a loss of all power to the switchyard, STP will commence a shutdown of Unit 2 to Mode 3. The procedure will also require that one Standby Diesel be started and loaded to its ESF bus and that the ESF bus be subsequently removed from offsite power. These procedure revisions will be completed by December 23, 2003.
2. STP has procedural guidance to supply electrical power to an ESF bus in a unit that has lost all electrical power to its ESF busses from a functioning Emergency Diesel in the opposite unit. This procedure will only be implemented when the failure of emergency power sources in a unit has occurred such that the remaining emergency power is judged to be inadequate for mitigation of the event and sufficient power is available in the opposite unit to meet its electrical power requirements.
3. STP will monitor changes in planned risk levels using the CRMP. During the extended AOT, the calculated average CDF levels will be updated in the event unplanned maintenance is required on equipment within the scope of the CRMP. Risk levels will be monitored throughout the SDG-22 outage and STP will comply with the risk threshold actions required by the CRMP. In addition, STPNOC will keep the NRC Resident Inspector apprised of deviations from the expected risk profile for the duration of the proposed AOT extension.

The above compensatory measures have been entered as regulatory commitments in the licensee's Commitment Management System which complies with Nuclear Energy Institute's Document 99-04, Revision 0, "Guidelines for Managing NRC Commitment Changes." The NRC staff has reviewed the compensatory measures and how they will be controlled and finds that the licensee's commitments provide adequate assurance that safe plant operation will not be affected by the extended AOT for SDG-22.

5.0 EMERGENCY CIRCUMSTANCES

The NRC's regulations at 10 CFR 50.91 contain provisions for issuance of an amendment where the Commission finds that an emergency situation exists in that failure to act in a timely way would result in shutdown of a nuclear power plant. In such a situation, the NRC may issue a license amendment involving no significant hazards consideration without prior notice and opportunity for a hearing or for public comment. In such a situation, the Commission will not publish a notice of proposed determination on no significant hazards consideration, but will publish a notice of issuance under 10 CFR § 2.106.

In this instance, an emergency situation exists in that the proposed amendments are needed to allow the licensee to preclude an unnecessary plant shutdown. In its December 23, 2003, application, the license stated that:

In its December 23, 2003, application, the licensee stated that:

During a surveillance test on December 9, 2003, SDG-22 experienced a failure and STPNOC will not be able to complete the repairs in the current 14 day AOT. The maintenance activities are being worked on a 24-hour per day schedule until completed.

Emergency approval of the proposed license amendments is needed to avoid a potential shutdown in accordance with TS 3.8.1 at the expiration of the AOT on December 23, 2003. ACTION 3.8.1.1.b would require STP Unit 2, to be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours. STPNOC could not reasonably have foreseen or anticipated the failure of SDG-22. Therefore, STPNOC requests approval of this license amendment request on an emergency basis and issuance of the amendment prior to expiration [of] the AOT at 10:38 a.m. CST [Central Standard Time] on December 23, 2003.

The Commission expects its licensees to apply for license amendments in a timely fashion. In this situation, the NRC staff has determined that the licensee has explained, as set forth above, why this emergency situation occurred and why it could not avoid this situation. Based on the licensee's reasons set forth above, the NRC staff has determined that the licensee could not reasonably have foreseen the failure of SDG-22, and could not file the application sufficiently in advance of that event. Accordingly, the NRC staff has determined that the licensee made a timely application for the amendment, has not abused the emergency provisions of 10 CFR 50.91(a)(5), and did not itself create the emergency.

6.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The Commission's regulation at 10 CFR 50.92(c) states that the Commission may make a final determination that a license amendment involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) result in a significant reduction in a margin of safety. The NRC staff has made a final determination that no significant hazards consideration is involved for the proposed amendment and that the amendment should be issued as allowed by the criteria contained in 10 CFR 50.91. The NRC staff's final determination is presented below:

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

Response: No.

SDG 22 provides onsite electrical power to vital systems should offsite electrical power be interrupted. It is not an initiator to any accident previously evaluated.

Therefore, this extended period of operation with the SDG out-of-service will not increase the probability of an accident previously evaluated.

The SDGs act to mitigate the consequences of design basis accidents that assume a loss of offsite power. For that purpose, redundant SDGs are provided to protect against a single failure. During the Technical Specification 14 day allowed outage time, an operating unit is allowed by the Technical Specifications to remove one of the SDGs from service, thereby losing this single-failure protection. This operating condition is considered acceptable. The consequences of a design basis accident coincident with a failure of the redundant SDG during the extended allowed outage time are the same as those during the 14-day allowed outage time. Therefore, during the period of the extended AOT, there is no significant increase in consequences of an accident previously evaluated.

Therefore, the proposed change will not involve 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 accident from any accident previously evaluated?

Response: No.

There are no new failure modes or mechanisms created due to plant operation during the extension of the AOT. Extended operation with an inoperable SDG 22 does not involve any modification in the operational limits or physical design of plant systems. There are no new accident precursors generated due to the extended allowed completion time.

Therefore, 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.

Plant operation for the proposed extension of the existing AOT for inoperable SDG 22, has been shown to have a very small impact on plant risk using the criteria of RG 1.174 and RG 1.182. During the extended allowed outage time, the electrical power system maintains the ability to perform its safety function of providing an available source of power to the Engineered Safety Feature (ESF) systems as assumed in the accident analyses. During the extended maintenance and test period, appropriate compensatory measures will be implemented to restrict risk significant activities.

Therefore, the proposed change does not involve a significant reduction in a margin of safety as defined in the basis for any Technical Specification.

7.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Texas State official was notified of the proposed issuance of the amendments. The State official had no comments.

8.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has made a final finding that the amendments involve no significant hazards consideration. Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

9.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: J. Lazevnick
J. Chung
D. Jaffe

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South Texas Project, Units 1 & 2

cc:

Mr. Cornelius F. O'Keefe
Senior Resident Inspector
U.S. Nuclear Regulatory Commission
P. O. Box 910
Bay City, TX 77414

A. Ramirez/C. M. Canady
City of Austin
Electric Utility Department
721 Barton Springs Road
Austin, TX 78704

Mr. L. K. Blaylock
Mr. W. C. Gunst
City Public Service Board
P. O. Box 1771
San Antonio, TX 78296

Mr. C. A. Johnson/A. C. Bakken
AEP Texas Central Company
P. O. Box 289
Mail Code: N5022
Wadsworth, TX 77483

INPO
Records Center
700 Galleria Parkway
Atlanta, GA 30339-3064

Regional Administrator, Region IV
U.S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011

D. G. Tees/R. L. Balcom
Texas Genco, LP
P. O. Box 1700
Houston, TX 77251

Judge, Matagorda County
Matagorda County Courthouse
1700 Seventh Street
Bay City, TX 77414

A. H. Gutterman, Esq.
Morgan, Lewis & Bockius
1111 Pennsylvania Avenue, NW
Washington, DC 20004

Mr. T. J. Jordan, Vice President
Engineering & Technical Services
STP Nuclear Operating Company
P. O. Box 289
Wadsworth, TX 77483

S. M. Head, Manager, Licensing
Nuclear Quality & Licensing Department
STP Nuclear Operating Company
P. O. Box 289, Mail Code: N5014
Wadsworth, TX 77483

Environmental and Natural Resources
Policy Director
P. O. Box 12428
Austin, TX 78711-3189

Jon C. Wood
Matthews & Branscomb
112 East Pecan, Suite 1100
San Antonio, TX 78205

Arthur C. Tate, Director
Division of Compliance & Inspection
Bureau of Radiation Control
Texas Department of Health
1100 West 49th Street
Austin, TX 78756

Brian Almon
Public Utility Commission
William B. Travis Building
P. O. Box 13326
1701 North Congress Avenue
Austin, TX 78701-3326

May 2003

South Texas Project, Units 1 & 2

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Susan M. Jablonski
Office of Permitting, Remediation
and Registration
Texas Commission on
Environmental Quality
MC-122
P.O. Box 13087
Austin, TX 78711-3087

Mr. Terry Parks, Chief Inspector
Texas Department of Licensing
and Regulation
Boiler Division
P. O. Box 12157
Austin, TX 78711

Mr. Ted Enos
4200 South Hulen
Suite 630
Ft. Worth, Texas 76109