Nuclear Operating Company

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

March 30, 2006
NOC-AE-06001979
10CFR50.54(f)

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
One White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

South Texas Project
Units 1 and 2
Docket Nos. STN 50-498, STN 50-499
60-Day Response to NRC Generic Letter 2006-02:
"Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power"

NRC Generic Letter (GL) 2006-02, "Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power," was issued to request information from licensees in four areas:

(1) Use of protocols between the nuclear power plant (NPP) and the transmission system operator (TSO), independent system operator (ISO), or reliability coordinator/authority (RC/RA) and the use of transmission load flow analysis tools (analysis tools) by TSOs to assist NPPs in monitoring grid conditions to determine the operability of offsite power systems under plant technical specifications (TSs). (The TSO, ISO, or RA/RC is responsible for preserving the reliability of the local transmission system. In this GL the term TSO is used to denote these entities);

(2) Use of NPP/TSO protocols and analysis tools by TSOs to assist NPPs in monitoring grid conditions for consideration in maintenance risk assessments;

(3) Offsite power restoration procedures in accordance with Section 2 of NRC Regulatory Guide (RG) 1.155, "Station Blackout;" and

(4) Losses of offsite power caused by grid failures at a frequency equal to or greater than once in 20 site-years in accordance with RG 1.155.

A123

STI: 31986486

Licensees were requested to provide a written response to the GL within 60 days providing information and answers to several questions in the GL. STP Nuclear Operating Company's (STPNOC) response is provided in Attachment 1 to this letter.

Additional information is provided in Attachment 2 to this letter to address an issue that was discussed during the January 9 and 10, 2006 NRC public workshop regarding the objectives of this generic letter.

There are no NRC commitments in this letter.

If there are any questions regarding this response, please contact Ken Taplett, at (361) 972-8416 or me at (361) 972-7902.

In accordance with the provisions of Section 182a of the Atomic Energy Act of 1954, as amended, and 10 CFR 50.54(f), STPNOC is submitting this letter under oath and affirmation.

Some of the questions in GL 2006-02 seek information about analyses, procedures, and activities concerning grid reliability for which STPNOC does not have first-hand knowledge, are beyond the control of STPNOC, and cannot be verified and validated by STPNOC. In providing information responsive to such questions, STPNOC makes no representation as to its accuracy or completeness.

In conjunction with the disclaimer in the previous paragraph, I declare under penalty of perjury that the foregoing is true and correct.

Executed on March 30, 2006

T. J. Jordan
Vice President, Engineering

kjt/

Attachments:

1. STP Nuclear Operating Company Response to NRC Generic Letter 2006-02 "Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power"

2. Additional Information

cc:
(paper copy)

Bruce S. Mallett
Regional Administrator, Region IV
U. S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 400
Arlington, Texas 76011-8064

John Dixon
U. S. Nuclear Regulatory Commission
P. O. Box 289, Mail Code: MN116
Wadsworth, TX 77483

Richard A. Ratliff
Bureau of Radiation Control
Texas Department of State Health Services
1100 West 49th Street
Austin, TX 78756-3189

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

(electronic copy)

A. H. Gutterman, Esquire
Morgan, Lewis & Bockius LLP

Mohan C. Thadani
U. S. Nuclear Regulatory Commission

Steve Winn
Christine Jacobs
Michael A. Reed
NRG South Texas LP

C. Kirksey
City of Austin

J. J. Nesrsta
R. K. Temple
E. Alarcon
City Public Service

Jon C. Wood
Cox Smith Matthews

Attachment 1

**STP Nuclear Operating Company Response to
NRC Generic Letter 2006-02
"Grid Reliability and the Impact on
Plant Risk and the Operability of Offsite Power"**

STP Nuclear Operating Company Response to NRC Generic Letter 2006-02 "Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power"

NRC Generic Letter 2006-02 requested that each licensee provide answers to the following questions and provide information to determine if compliance is being maintained with respect to grid reliability and the impact on plant risk and the operability of offsite power. The STP Nuclear Operating Company responses are provided below.

REQUESTED INFORMATION

Questions 1 through 4 deal with the use of protocols between the Nuclear Power Plant (NPP) licensee and the transmission system operator (TSO), independent system operator (ISO), or the reliability coordinator/authority (RC/RA) and the use of analysis tools by TSOs to assist NPP licensee in monitoring grid conditions to determine the operability of offsite power systems under plant TS.

GDC 17, 10 CFR Part 50, Appendix A, requires that licensees minimize the probability of the loss of power from the transmission network given a loss of the power generated by the nuclear power unit(s).

> Note: The following is to clarify terms used in the NRC Generic Letter and terms that the South Texas Project (STP) uses. The Transmission System Operator (TSO) is STP's Independent System Operator (ISO) which is the Electric Reliability Council of Texas (ERCOT). STP uses a Transmission Service Provider (TSP) as a point of interconnection to the ERCOT grid. The primary TSP for the STP is CenterPoint Energy. STP also has a Qualified Scheduling Entity (QSE) that provides the primary interface for market participants (STP is a market participant) with ERCOT; therefore, the TSO may contact STP via the QSE.

Question 1

Question 1 deals with the use of protocols between the NPP licensee and the TSO, ISO, or RC/RA to assist the NPP licensee in monitoring grid conditions to determine the operability of offsite power systems under plant TS.

NRC Question 1(a)

Do you have a formal agreement or protocol with your TSO?

STP Response:

Yes, STP has a formal interconnection agreement with the TSP. The TSO also has in place protocols, operating guides and procedures which support the offsite power requirements for STP. Compliance with GDC-17, as documented in the STP license basis and plant Technical Specifications, is not predicated on such an agreement.

NRC Question 1(b)

Describe any grid conditions that would trigger a notification from the TSO to the NPP licensee and if there is a time period required for the notification.

STP Response:

The TSO is required to notify STP via the QSE and/or the TSP whenever an impaired or potentially degraded grid condition of the following type is recognized by the TSO/TSP. Specific examples of known potentially degrading conditions identified in the agreement fall into two basic categories:

1. Normal day-to-day operational communications associated with topics such as:
   - work coordination
   - switching
   - generation dispatch
   - planning

2. Infrequent or off-normal communications associated with topics such as:
   - emergent line outages
   - severe weather
   - equipment malfunctions that affect STP
   - very low system load
   - very high system load,
   - North American Electric Reliability Council (NERC) Energy Emergency Alerts
   - NPP voltage support problems
   - significant grid frequency problems
   - sabotage or terrorism

The occurrence of a grid contingency that impacts STP requires immediate STP notification. "Immediate" is defined in the protocols. If the TSO/TSP real-time contingency analysis shows that the offsite power to STP will be impaired or degraded upon the occurrence of a credible contingency, the TSO/TSP is required to notify STP within 30 minutes of the analysis.

[NOTE: The TSO/TSP may need to perform verifications to confirm a credible contingency. Once the contingency is determined to be credible, the TSO/TSP should initiate remedial actions; but is required to notify STP within 30 minutes of the condition and estimated time to restore the grid to an acceptable range. If the condition can be immediately resolved (within several minutes), no notification to STP is required.]

NRC Question 1(c)

Describe any grid conditions that would cause the NPP licensee to contact the TSO. Describe the procedures associated with such a communication. If you do not have procedures, describe how you assess grid conditions that may cause the NPP licensee to contact the TSO.

STP Response:

Relative to this question, "grid conditions" is assumed to be STP changes that impact the TSO/TSP analysis of the grid interface. STP notifies the TSO for changes in the following grid conditions:

- STP power uprate and derate changes (both real and reactive power)
- Changes to switchyard voltage, switchyard breaker alignment, generator VAR loading
- Modifications resulting in changes to generator electrical characteristics
- Changes in STP post-trip offsite power minimum required switchyard voltage or loading
- Change in status of STP offsite power voltage regulating devices (such as load tap changers in manual versus auto)
- High voltage equipment problems that could impact STP output, stability, or availability (e.g.: large power transformer problems, main generator problems, isophase bus problems, etc.)

Other notifications associated with internal plant electrical or equipment alignments are also made when applicable; however, these are not related to "grid conditions".

Some procedures associated with these communications are in 0POP04-AE-0005, 'Offsite Power System Degraded Voltage'; 0PGP03-ZO-0045, 'CenterPoint Energy Real Time Operations Emergency Operations Plan' and 0POP01-ZO-0006, 'Extended Allowed Outage Time'.

NRC Question 1(d)

Describe how NPP operators are trained and tested on the use of the procedures or assessing grid conditions in question 1(c).

STP Response:

The STP Control Room staff is trained and tested on the use of the following procedures related to assessing the availability of offsite power:

- 0POP04-AE-0005, "Offsite Power System Degraded Voltage"
- 0PGP03-ZA-0091, "Configuration Risk Management Program"

This training covers procedure purpose and scope, as well as proper determination of when this procedure should be applied. 0POP04-AE-0005 provides guidance for response to a low voltage condition existing on the offsite power system, or a potential low voltage condition that could exist on the offsite power system following a trip of both units. 0PGP03-ZA-0091 is used to assess the risk impact of equipment out-of-service and to maintain the station risk at desired levels.

<u>NRC Question 1(e)</u>

If you do not have a formal agreement or protocol with your TSO, describe why you believe you continue to comply with the provisions of GDC 17 as stated above, or describe what actions you intend to take to assure compliance with GDC 17.

STP Response:

Not Applicable – See answers to questions 1(a) through 1(d)

Compliance with GDC-17 is not predicated on this agreement; GDC-17 was established prior to the existence of the agreement.

Compliance with GDC-17, as supported by NUREG 0800, is solely based on "each [offsite power] circuit has been sized with sufficient capacity to supply all connected loads" and "results of the ... grid stability analysis indicated that loss of the largest generating capacity being supplied to the grid, loss of largest load from the grid, loss of the most critical transmission line, or loss of the unit itself will not cause grid instability." As confirmed in the Generic Letter definitions, for a given disturbance, stability equates to maintaining a state of equilibrium, and not a specific voltage.

The TSO is required by the ERCOT to perform periodic studies to ensure compliance with their grid stability criteria and planning standards. These criteria include limits on the maximum allowable voltage deviation and duration of transients for a given grid disturbance. This provides additional STP offsite power assurance.

<u>NRC Question 1(f)</u>

If you have an existing formal interconnection agreement or protocol that ensures adequate communication and coordination between the NPP licensee and the TSO, describe whether this agreement or protocol requires that you be promptly notified when the conditions of the surrounding grid could result in degraded voltage (i.e., below TS nominal trip setpoint value requirements; including NPP licensees using allowable value in its TSs) or Loss of Offsite Power (LOOP) after a trip of the reactor unit(s).

STP Response:

As previously stated, STP has a formal interconnect agreement with the TSP and protocols with the TSO. Prompt notification regarding pre-trip analysis of predicted post-trip voltage that results in below acceptance limits is included. "Prompt" is defined in the ERCOT protocols, operating guides and procedures as "within 30 minutes of the condition". (See response to Question 1(b))

The procedure for prompt notification is found in the ERCOT Operating Guides, Section 2 'System Operations'.

NRC Question 1(g)

Describe the low switchyard voltage conditions that would initiate operation of plant degraded voltage protection.

STP Response:

STP's minimum switchyard voltage that would actuate the degraded grid relays is dependent on the mode of operation, the electrical distribution line up, and whether or not an accident signal is present. For the purpose of answering the question, STP assumes that the plants would be in their normal line up with an accident signal present in one unit, which would sequence loads onto the 4.16 kV safety busses. For this case, the minimum switchyard voltage is presently 347 kV.

Question 2

Question 2 deals with the use of criteria and methodologies to assess whether the offsite power system will become inoperable as a result of a trip of your NPP.

NRC Question 2(a)

Does your NPP's TSO use any analysis tools, an online analytical transmission system studies program, or other equivalent predictive methods to determine the grid conditions that would make the NPP offsite power system inoperable during various contingencies? If available to you, please provide a brief description of the analysis tool that is used by the TSO.

STP Response:

The TSP and TSO make use of analysis tools to predict grid conditions that would make the STP offsite power system non-functional. The tools presently used by the TSP to manage the grid programs, control the transmission related activities, and monitor grid actions are outside the control of the STP and include the following:

- A grid state estimator and Supervisory Control and Data Acquisition (SCADA) system in conjunction with a real-time security analysis (i.e., real-time contingency analysis (RTCA)) program.
- A voltage stability analysis program
- A dynamic stability analysis program
- Bounding analyses

Technical Specification (TS) requirements apply to the two physically independent circuits that connect the offsite transmission network to the Class 1E onsite power distribution system. STP can apply the results of the TSP or TSO analysis to determine the operability of those two TS required circuits.

Many grid operators use procedures based on bounding transmission planning studies to operate the grid. As long as the grid configuration is within the parameters allowed by the procedure under various system conditions, adequate post-NPP trip voltage support is assured. Specific case studies are also used from time to time to support planned grid configurations when not clearly bounded by existing studies.

In addition, to the transmission system analysis based procedures, grid operators also use monitoring / predictive analysis computer programs that can predict NPP switchyard voltages expected to occur upon realization of any one of a number of possible losses to the grid, such as:

- a trip of the NPP generator
- a trip of another large generator
- the loss of an important transmission line

Monitoring/predictive analysis computer program tools operate based on raw data from transducers across the system that is processed through a state estimator to generate a current state snapshot of the system. This output is then processed through a contingency analysis program that generates a set of new results with various single elements of the system out of service. These results are then screened against a predetermined set of acceptance limits. Postulated scenarios that do not meet the acceptance limits are listed for review by the grid operator.

<u>NRC Question 2(b)</u>

Does your NPP's TSO use an analysis tool as the basis for notifying the NPP licensee when such a condition is identified? If not, how does the TSO determine if conditions on the grid warrant NPP licensee notification?

STP Response:

Yes. The TSO/TSP uses the analysis tools as described in 2(a), in conjunction with procedures, as the basis for determining when conditions warrant NPP notification.

Notifications are made based on grid configurations being outside of predefined procedure requirements or based on unsatisfactory monitoring/predictive analysis computer program tool results.

NRC Question 2(c)

If your TSO uses an analysis tool, would the analysis tool identify a condition in which a trip of the NPP would result in switchyard voltages (immediate and/or long-term) falling below TS nominal trip setpoint value requirements (including NPP licensees using allowable value in its TSs) and consequent actuation of plant degraded voltage protection? If not, discuss how such a condition would be identified on the grid.

STP Response:

Yes. Procedures and monitoring/predictive analysis tools are in place for this purpose. The TSO/TSP analysis tool(s), in conjunction with STP plant analysis, identifies conditions which would actuate the STP degraded voltage protection logic and initiate separation from an offsite power source upon a STP trip.

The use of state estimators and security analysis (RTCA) only projects final states; there is no assurance that during a transient that results from a contingency the grid will not reach the under-voltage setting or the degraded voltage setting. It is probable that the grid will not get to the degraded voltage setpoint. The voltage number used to determine contingency violations is presently set above the degraded voltage setpoint to allow for this transient. The number used as an allowable start/end state is determined by grid stability studies that can predict the lowest voltage and time during a transient.

NRC Question 2(d)

If your TSO uses an analysis tool, how frequently does the analysis tool program update?

STP Response:

The TSP security analysis (RTCA) program presently updates the STP trip contingency(s) on a 15-minute interval. The state estimator SCADA information is updated every 5 minutes by the TSP.

The TSO periodic planning analysis is reviewed as conditions change on the grid such as new or outaged transmission lines or generation changes. The STP and TSO/TSP agreements require prior STP notification regarding planned grid changes local to STP. STP will receive the effects that the changes will have on switchyard voltages at this time.

NRC Question 2(e)

Provide details of analysis tool-identified contingency conditions that would trigger an NPP licensee notification from the TSO.

STP Response:

The notification from the TSO/TSP is based upon the predicted post-trip switchyard voltage given actual or security analysis (RTCA) grid conditions. A couple of examples of conditions that might cause a notification are:

- An actual or anticipated grid configuration outside the bounds of the enveloping transmission system study based procedure requirements.
- Monitoring / predictive analysis computer program validated results that do not meet the predetermined acceptance limit for minimum required switchyard voltage.

The analyzed contingencies that are evaluated against the STP voltage requirements include:

- loss of another generator,
- loss of a significant transmission line,
- loss of a capacitor bank, or
- loss of the NPP generator itself.

If the STP voltage requirement cannot be met under any of the contingencies considered, then STP will be notified. The same minimum required switchyard voltage limit bases that are used in the grid operating procedures are also used in the predictive analysis computer programs.

NRC Question 2(f)

If an interface agreement exists between the TSO and the NPP licensee, does it require that the NPP licensee be notified of periods when the TSO is unable to determine if offsite power voltage and capacity could be inadequate? If so, how does the NPP licensee determine that the offsite power would remain operable when such a notification is received?

STP Response:

No. STP has a formal interface agreement with the TSP; however, the agreement does not have notification requirements for when the analysis tools are unavailable. STP does have informal agreements in place for notification if the TSP analysis tools are unavailable. STP's TSO also runs analysis tools separate from the TSP. The TSO analysis acts as a backup to the TSP; therefore, STP does not expect to be without the ability via the TSO and TSP to determine if offsite voltage and capacity are adequate.

STP follows Technical Specifications requirements when notified by the TSO and/or TSP that grid conditions cannot be predicted. In the remote likelihood that neither analysis tool is available and absent information that a grid instability condition exists, STP would continue to operate within the bounds of its long-term stability analysis to meet design and TS requirements.

<u>NRC Question 2(g)</u>

After an unscheduled inadvertent trip of the NPP, are the resultant switchyard voltages verified by procedure to be bounded by the voltages predicted by the analysis tool?

STP Response:

No. For post-event analysis, the TSO/TSP does not verify by procedure the switchyard voltages are bounded by the analysis tools. Nonetheless, such analyses have been performed on a case-by-case basis to tune the analysis model.

<u>NRC Question 2(h)</u>

If an analysis tool is not available to the NPP licensee's TSO, do you know if there are any plans for the TSO to obtain one? If so, when?

STP Response:

Not Applicable – See response to Questions 2(a) through 2(g).

<u>NRC Question 2(i)</u>

If an analysis tool is not available, does your TSO perform periodic studies to verify that adequate offsite power capability, including adequate NPP post-trip switchyard voltages (immediate and/or long-term), will be available to the NPP licensee over the projected timeframe of the study?

> (a) Are the key assumptions and parameters of these periodic studies translated into TSO guidance to ensure that the transmission system is operated within the bounds of the analyses?

(b) If the bounds of the analyses are exceeded, does this condition trigger the notification provisions discussed in question 1 above?

STP Response:

Not Applicable – See response to Questions 2(a) through 2(g).

NRC Question 2(j)

If your TSO does not use, or you do not have access to the results of an analysis tool, or your TSO does not perform and make available to you periodic studies that determine the adequacy of offsite power capability, please describe why you believe you comply with the provisions of GDC 17 as stated above, or describe what compensatory actions you intend to take to ensure that the offsite power system will be sufficiently reliable and remain operable with high probability following a trip of your NPP.

STP Response:

Not Applicable – See response to Questions 2(a) through 2(g).

Question 3

Question 3 deals with the use of criteria and methodologies to assess whether the NPP's offsite power system and safety-related components will remain operable when switchyard voltages are inadequate.

NRC Question 3(a)

If the TSO notifies the NPP operator that a trip of the NPP, or the loss of the most critical transmission line or the largest supply to the grid would result in switchyard voltages (immediate and/or long-term) below TS nominal trip setpoint value requirements (including NPP licensees using allowable value in its TSs) and would actuate plant degraded voltage protection, is the NPP offsite power system declared inoperable under the plant TSs? If not, why not?

STP Response:

Yes, offsite power sources are declared inoperable under plant TS. STP would enter off-normal procedure 0POP04-AE-0005, "Offsite Power System Degraded Voltage", when notified by the QSE or TSP/TSO that a combination of conditions exist on the 345 KV system that could lead to a low voltage condition in the 345 KV Switchyard subsequent to trip of both Units. Step 4.0 of this procedure directs entry into TS Limiting Condition for Operation (LCO) 3.8.1.1.e for inoperability of both of the two required circuits that connect the offsite transmission network to the Class 1E distribution system.

NRC Question 3(b)

If onsite safety-related equipment (e.g., emergency diesel generators or safety-related motors) is lost when subjected to a double sequencing (LOCA with delayed LOOP event) as a result of the anticipated system performance and is incapable of performing its safety functions as a result of responding to an emergency actuation signal during this condition, is the equipment considered inoperable? If not, why not?

STP Response:

STP's design basis LOCA analysis assumes that a loss of offsite power (LOOP) occurs simultaneously with the initiation of the LOCA event. STP is not required to postulate the effect of double sequencing (LOCA with delayed LOOP event) on the operability of onsite safety-related equipment. Therefore, "double sequencing" is outside STP's design basis.

If a predictive analysis results in notification from the TSO/TSP that voltage below the degraded voltage protection setpoint may occur, then offsite power is declared inoperable and the 24-hour LCO is entered. If the degraded voltage condition is not corrected, a unit shutdown is required after 24-hours in this condition.

NRC Question 3(c)

Describe your evaluation of onsite safety-related equipment to determine whether it will operate as designed during the condition described in question 3(b).

STP Response:

For the reasons stated in the response to Question 3(b), STP has not performed an evaluation on onsite safety-related equipment to determine whether it will operate as designed during the condition described in Question 3(b). This condition is outside STP's design basis.

NRC Question 3(d)

If the NPP licensee is notified by the TSO of other grid conditions that may impair the capability or availability of offsite power, are any plant TS action statements entered? If so, please identify them.

STP Response:

No. Technical Specifications are not entered for grid conditions that might occur.

The STP operator declares offsite power non-functional when the predicted voltage following a trip is low enough to cause actuation of the degraded voltage relays and/or a consequential LOOP. Postulated contingencies on the transmission grid are not used as a basis for functionality determinations because:

- such events are only postulated and have not actually occurred,
- the offsite power circuits remain capable of effecting a safe shutdown and mitigating the effects of an accident, and
- the GDC 17 criterion discussed in the Generic Letter is still met, i.e., loss of power from the transmission network would not occur as a result of loss of power generated by the nuclear power unit.

<u>NRC Question 3(e)</u>

If you believe your plant TSs do not require you to declare your offsite power system or safety-related equipment inoperable in any of these circumstances, explain why you believe you comply with the provisions of GDC 17 and your plant TSs, or describe what compensatory actions you intend to take to ensure that the offsite power system and safety-related components will remain operable when switchyard voltages are inadequate.

STP Response:

Not Applicable - See response to Question 3(a).

<u>NRC Question 3(f)</u>

Describe if and how NPP operators are trained and tested on the compensatory actions mentioned in your answers to questions 3(a) through (e).

STP Response:

The STP Control Room staff are trained and tested on use of 0POP04-AE-0005, "Offsite Power System Degraded Voltage", on a biennial basis. This procedure provides the crew with specific entry criteria and direction for actual or potential low offsite power voltage conditions. Technical Specification entry and bases are provided within this procedure.

<u>Question 4</u>

Question 4 deals with the use of criteria and methodologies to assess whether the offsite power system will remain operable following a trip of your NPP.

<u>NRC Question 4(a)</u>

Do the NPP operators have any guidance or procedures in plant TS bases sections, the final safety analysis report, or plant procedures regarding situations in which the condition of plant-controlled or -monitored equipment (e.g., voltage regulators, auto tap changing transformers, capacitors, static VAR compensators, main generator voltage regulators) can adversely affect the operability of the NPP offsite power system? If so, describe how the operators are trained and tested on the guidance and procedures.

STP Response:

Plant-controlled equipment that could affect the operability of the offsite power system is the main generator voltage regulator and unit auxiliary transformer tap changer.

Operations procedure 0POP04-AE-0005, "Offsite Power System Degraded Voltage", provides guidance for Operations response to a low voltage condition existing on the offsite power system, or a potential low voltage condition that could exist on the offsite power system following a trip. This procedure will identify the impact on the operability of offsite power sources if a condition exists that would affect switchyard voltage. The procedure provides direction if the unit auxiliary transformer tap changer is not automatically maintaining secondary voltage within prescribed limits. As discussed in Question 3(f), STP Control Room staff are trained and tested on use of 0POP04-AE-0005 on a biennial basis.

NRC Question 4(b)

If your TS bases sections, the final safety analysis report, and plant procedures do not provide guidance regarding situations in which the condition of plant-controlled or monitored equipment can adversely affect the operability of the NPP offsite power system, explain why you believe you comply with the provisions of GDC 17 and the plant TSs, or describe what actions you intend to take to provide such guidance or procedures.

STP Response:

As discussed in the response to Question 4(a), plant procedures provide adequate guidance regarding operation of the unit auxiliary transformer tap changer and are included in Licensed Operator re-qualification training on a biennial basis. Operator training regarding main generator voltage regulator failures has been part of past Licensed Operator initial and re-qualification training. Training has not specifically addressed the non-functionality impact of either of these components on the operability of offsite power.

TS requirements apply to the two physically independent circuits that connect the offsite transmission network to the Class 1E onsite power distribution system. Operations procedure 0POP04-AE-0005, "Offsite Power System Degraded Voltage", provides guidance for determining conditions when offsite power is inoperable.

<u>Questions 5 and 6 deal with the use of NPP licensee/TSO protocols and analysis tool by TSOs to assist NPP licensees in monitoring grid conditions for consideration in maintenance risk assessments</u>

The Maintenance Rule (10 CFR 50.65(a)(4)) requires that licensees assess and manage the increase in risk that may result from proposed maintenance activities before performing them.

<u>Question 5</u>

Question 5 deals with the performance of grid reliability evaluations as part of the maintenance risk assessments required by 10 CFR 50.65(a)(4).

<u>NRC Question 5(a)</u>

(a) Is a quantitative or qualitative grid reliability evaluation performed at your NPP as part of the maintenance risk assessment required by 10 CFR 50.65(a)(4) before performing grid-risk-sensitive maintenance activities? This includes surveillances, post-maintenance testing, and preventive and corrective maintenance that could increase the probability of a plant trip or LOOP or impact LOOP or SBO coping capability, for example, before taking a risk-significant piece of equipment (such as an EDG, a battery, a steam-driven pump, an alternate AC power source) out-of-service?

STP Response:

The 10 CFR 50.65(a)(4) quantitative risk assessment includes the probability of losing Offsite Power (OSP) during maintenance activities on plant equipment. This is done using the results of the plant specific initiating event frequency analysis for loss of OSP. Activities performed in the switchyard and on the transmission system not under control of STP do not have a 10 CFR 50.65(a)(4) risk assessment performed.

Procedure 0POP01-ZO-0006, "Extended Allowed Outage Time", verifies with the TSP that no adverse weather conditions exist in the areas of our offsite power supplies that challenge the stability of grid prior to the commencement of an extended allowed outage. This procedure is applicable to systems such as the standby diesel generators, essential cooling water and essential chilled water. Procedure 0POP04-ZO-0002, "Natural or Destructive Phenomena Guidelines", provides instructions for preparing for and responding to external events such as imminent tornados and hurricanes. This procedure directs operations to evaluate the status of equipment such as the standby diesel generators, all batteries, and the turbine-driven auxiliary feedwater pump. The procedure directs the plant staff to evaluate inoperable or scheduled inoperable equipment to determine a course of action to ensure plant safety.

Procedure 0PGP03-ZA-0091, "Configuration Risk Management Program", defines the process used to assess the risk impact of equipment out of service and to maintain station risk at desired levels during normal operation. This procedure controls the quantitative assessment of on-line maintenance activities including preventive and corrective maintenance, surveillance tests, and post maintenance tests, required by 10 CFR 50.65 a(4).

NRC Question 5(b)

Is grid status monitored by some means for the duration of the grid-risk-sensitive maintenance to confirm the continued validity of the risk assessment and is risk reassessed when warranted? If not, how is the risk assessed during grid-risk-sensitive maintenance?

STP Response:

Yes. Extended maintenance (i.e., greater than 72 hours) on the emergency diesel generators, essential cooling water system (i.e., service water system), and essential chilled water system are closely coordinated and communicated shiftly between the station and the TSO.

STP receives information from the TSO/TSP on the state of the offsite power system. Both main control rooms have ring-down lines from the TSO/TSP so that secured information may be passed on to the unit's Shift Supervisor. The TSO/TSP continuously reviews the grid in real time and on a single (anticipatory) contingency basis. In addition, STP receives information on the grid from ERCOT via the QSE also known as the STP Coordinator. Procedure 0PGP03-ZO-0045, "Emergency Control Center Operating Plan", limits maintenance activities when the grid starts to reach limits on generation and its transmission system. STP performs a general review of the offsite power system as a good practice, but STP does not have a procedure to direct the practice.

Procedure 0POP04-AE-0005, "Offsite Power System Degraded Voltage", addresses control room response to degraded voltage conditions. The procedure is entered when notified, by either the QSE or TSO/TSP, that a combination of conditions exist on the 345 kV system that could lead to a low voltage condition in the 345 kV switchyard subsequent to trip of both units. This procedure is independent of any maintenance activity.

NRC Question 5(c)

Is there a significant variation in the stress on the grid in the vicinity of your NPP site caused by seasonal loads or maintenance activities associated with critical transmission elements? Is there a seasonal variation (or the potential for a seasonal variation) in the LOOP frequency in the local transmission region? If the answer to either question is yes, discuss the time of year when the variations occur and their magnitude.

STP Response:

Based on plant specific operating experience through 2004 and review of the latest NRC and EPRI reports concerning grid stability after the August 2003 Northeast blackout, there is no seasonal variation in the likelihood of loss of offsite power in ERCOT.

The maintenance outage scheduling of generators and transmission facilities are coordinated by the TSO and TSP. Tools for evaluating the reliability and economic impacts of these outages are fully developed. At times, scheduled outages may have to be changed due to reliability concerns in the day(s) ahead or current day. Since this is a potential reliability problem for STP, it may require the operation of STP to be modified to maintain overall reliability of the grid.

Many ISOs maintain a stable grid in the event of a major disturbance by shedding load to ensure continued grid reliability. Thus, two situations exist: grid reliability and service reliability. The residential and commercial customers may experience electrical outages at the distribution level while the grid is unaffected. Hence, offsite power continues to be available to the NPP.

<u>NRC Question 5(d)</u>

Are known time-related variations in the probability of a LOOP at your plant site considered in the grid-risk-sensitive maintenance evaluation? If not, what is your basis for not considering them?

STP Response:

The LOOP initiating event frequency in the STP PRA is based upon STP specific experience with ERCOT. The ERCOT data, discussed in the latest NRC and EPRI reports concerning grid stability after the August 2003 Northeast blackout, does not indicate a time-related variation in the probability of loss of offsite power.

<u>NRC Question 5(e)</u>

Do you have contacts with the TSO to determine current and anticipated grid conditions as part of the grid reliability evaluation performed before conducting grid-risk-sensitive maintenance activities?

STP Response:

Yes, per interconnection agreements. The South Texas Project Interconnection Agreement and South Texas Project Transmission Facilities Participation Agreement and their exhibits, are the binding documents for the interface between the TSP, the Switchyard Owners, and STP. STP closely coordinates and communicates maintenance activities on certain equipment/systems (e.g., emergency diesel generator, essential cooling water, essential chilled water, auxiliary feedwater) that will render the equipment non-functional for greater than 72 hours. Additional procedure guidance avoids voluntary maintenance on the station switchyard and key offsite power sources beyond those required to satisfy Technical Specifications. This includes verification that no adverse weather conditions exist in the areas of our offsite power supplies that challenge the stability of the grid prior to commencing the maintenance activity. Both main control rooms have ring-down lines from the TSO/TSP so that secured information due to possible contingencies may be passed on to each unit's Shift Supervisor.

NRC Question 5(f)

Describe any formal agreement or protocol that you have with your TSO to assure that you are promptly alerted to a worsening grid condition that may emerge during a maintenance activity.

STP Response:

Notification occurs whether or not maintenance is on-going. The type of alerts provided to the STP conforms to the accepted practice promulgated by the North American Electric Reliability Council (NERC). Important alerts such as the one suggested by this question would be made to all generators in the control area.

Agreements are in place to establish the interfaces between the grid operators and STP operations. The agreements, along with the operating procedures used by the grid operators, ensure that early notification of worsening grid conditions take place. This occurs whether or not a specific maintenance activity is in progress at STP.

With respect to potential grid problems that may be anticipated in advance, the agreement requires communications between STP operations and grid operations to:

- discuss the status of STP and the transmission system,
- review upcoming work activities, and
- discuss the operating conditions scheduled or anticipated for the next day and the next seven days.

This communication provides a means for the grid and STP operators to know what is going on with each others systems.

With respect to potential grid problems which may occur with little or no advance warning, the grid operator is in a unique position to anticipate and assess grid problems via information obtained from:

- the grid SCADA System,
- communications with field personnel,
- communications with neighboring utilities, and
- timely reports from various weather services.

Implementing procedures require that grid operations monitor system conditions and promptly notify STP operations of any existing or anticipated conditions that would result in inadequate voltage support.

<u>NRC Question 5(g)</u>

Do you contact your TSO periodically for the duration of the grid-risk-sensitive maintenance activities?

STP Response:

Extended maintenance (greater than 72 hours) on an ESF diesel generator or its associated essential cooling water system (i.e., nuclear service water), and the essential chilled water system are closely coordinated and communicated shiftly between the station and the TSO/TSP. The TSO/TSP is notified by STP prior to entering the maintenance condition, when exiting the maintenance conditions and when unplanned events impacting the maintenance condition occur.

<u>NRC Question 5(h)</u>

If you have a formal agreement or protocol with your TSO, describe how NPP operators and maintenance personnel are trained and tested on this formal agreement or protocol.

STP Response:

The STP Control Room staff are trained and tested on use of 0POP01-ZO-0006, "Extended Allowed Outage Time", as part of the Licensed Operator Training program. This procedure defines specific communication required with the TSO/TSP during grid-risk-sensitive maintenance activities. This training covers procedure purpose and scope, as well as proper determination of when this procedure should be applied.

<u>NRC Question 5(i)</u>

If your grid reliability evaluation, performed as part of the maintenance risk assessment required by 10 CFR 50.65(a)(4), does not consider or rely on some arrangement for communication with the TSO, explain why you believe you comply with 10 CFR 50.65(a)(4).

STP Response:

10CFR50.65(a)(4) does not require a grid reliability evaluation, per se. 10 CFR 50.65(a)(4) requires that before performing maintenance activities, the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities. The scope of the assessment may be limited to structures, systems, and components (SSC) that a risk-informed evaluation process has shown to be significant to public health and safety. The scope of the monitoring program shall include safety related and non-safety related SSCs. The grid is not a SSC described in the plant's licensing basis.

For weekly work including extended allowed outage work, STP performs a risk assessment per plant procedure, 0PGP03-ZA-0091, "Configuration Risk Management Program". The quantification of risk includes the contribution from a LOOP. The procedure requires additional risk management actions if specified risk thresholds are exceeded. If the work week involves an extended allowed outage of specific equipment, risk management actions specifically required by procedure 0POP01-ZO-0006, "Extended Allowed Outage Time", which includes the communications with the QSE, are employed. The STP risk assessment process complies with 10 CFR 50.65(a)(4).

The procedures described in the response to Question 5(a) and grid control interfaces described in the response to Questions 5(b) and 5(c) direct the operators to control and evaluate the status of offsite power, including on-going or planned maintenance, which satisfies the maintenance risk assessment requirements of 10 CFR 50.65(a)(4).

NRC Question 5(j)

If risk is not assessed (when warranted) based on continuing communication with the TSO throughout the duration of grid-risk-sensitive maintenance activities, explain why you believe you have effectively implemented the relevant provisions of the endorsed industry guidance associated with the maintenance rule.

STP Response:

See response to Question 5(i) above.

NRC Question 5(k)

With respect to questions 5(i) and 5(j), you may, as an alternative, describe what actions you intend to take to ensure that the increase in risk that may result from proposed grid-risk-sensitive activities is assessed before and during grid-risk-sensitive maintenance activities, respectively.

STP Response:

See response to Question 5(i) above. No alternative actions are required.

Question 6

Question 6 deals with the use of risk assessment results, including the results of grid reliability evaluations, in managing maintenance risk, as required by 10 CFR 50.65(a)(4).

NRC Question 6(a)

Does the TSO coordinate transmission system maintenance activities that can have an impact on the NPP operation with the NPP operator?

STP Response:

Yes.

Specific high-voltage circuit outages or substation work is not directly indicative of "grid conditions" that are relevant to determining offsite power operability. The reason is that the power-grid outages affect transmission, which is only one factor affecting the quality of voltage available in the plant switchyard. Besides transmission, the quality of voltage is affected by the amount of generating resources and the load on the network.

The TSO or the TSP has no means of predicting voltage in the STP switchyard more than a few hours in advance. Thus, whether or not the TSO or TSP coordinates transmission system maintenance activities with the STP has little bearing on the operation of the units, except in the case of the plant switchyard.

When the transmission system maintenance activities involve the plant switchyard, then some effective risk management actions are available (e.g., deferring work on auxiliary feedwater pumps or postponing testing).

Access to the plant switchyard is controlled by the shift-supervisor in the STP control rooms even though other entities have the switchyard responsibility even after deregulation. Thus, the outside entity and the on-shift personnel jointly coordinate access and transmission system maintenance activities in the switchyard. Success of such activities is verified by the plant operator rounds that routinely include tours of the switchyard and other high-voltage equipment.

<u>NRC Question 6(b)</u>

Do you coordinate NPP maintenance activities that can have an impact on the transmission system with the TSO?

STP Response:

Yes.

Operation procedure 0POP01-ZO-0006, "Extended Allowed Outage Time", for taking key systems (e.g., standby diesel generator, essential cooling water, essential chilled water) out of service for greater than 72 hours provides instructions to communicate and coordinate STP maintenance activities that impact or restrict transmission system activities. The restrictions ensure the work schedule contains no planned maintenance activities in the switchyard that could directly cause a loss of offsite power event. Maintenance activities identified after the extended allowed outage time begins that are required to ensure the continued reliability and availability of the offsite power sources are permitted.

Furthermore, STP ensures the work schedule contains no planned maintenance on the 138 kV emergency transformer and the switchgear that it feeds in the affected unit.

<u>NRC Question 6(c)</u>

Do you consider and implement, if warranted, the rescheduling of grid-risk-sensitive maintenance activities (activities that could (i) increase the likelihood of a plant trip, (ii) increase LOOP probability, or (iii) reduce LOOP or SBO coping capability) under existing, imminent, or worsening degraded grid reliability conditions?

STP Response:

Plant procedure 0PGP03-ZA-0091, "Configuration Risk Management Program", requires that the probability of a plant trip, as modeled in the STP Balance of Plant (BOP) PRA model, be calculated and monitored during the work week. Work schedules are adjusted to desired levels of risk. Risk reduction measures are taken whenever defined risk thresholds are anticipated to be exceeded or are exceeded.

Changing conditions that degrade the grid or could degrade the grid may result in postponing planned maintenance if the activity has not started. If the activity is in progress, the activity will continue, but steps may be taken to expedite restoration and take other risk reduction measures to regain defense-in-depth during conditions that affect or potentially degrade the grid.

Operation procedure 0POP04-AE-0005, "Offsite Power System Degraded Voltage", provides guidance for response to a low voltage condition existing on the offsite power system, or a potential low voltage condition that could exist on the offsite power system following a trip of both Units. This procedure directs the operator to refer to a plant procedure 0PGP03-ZO-0045, "Emergency Control Center Emergency Operating Plan" to determine the extent of the current upset conditions and perform the procedure to control maintenance and plant work activities that might contribute to the degraded condition.

Operations procedure 0POP04-ZO-0002, "Natural or Destructive Phenomena Guidelines", provides instructions for preparing for and responding to external events such as imminent tornados and hurricanes. This procedure directs operations to evaluate the status of equipment such as the standby diesel generators, all batteries, and the turbine-driven auxiliary feedwater pump. The procedure directs the plant staff to evaluate inoperable or scheduled inoperable equipment to determine a course of action to ensure plant safety.

<u>NRC Question 6(d)</u>

If there is an overriding need to perform grid-risk-sensitive maintenance activities under existing or imminent conditions of degraded grid reliability, or continue grid-risk-sensitive maintenance when grid conditions worsen, do you implement appropriate risk management actions? If so, describe the actions that you would take. (These actions could include alternate equipment protection and compensatory measures to limit or minimize risk.)

STP Response:

Work management is governed by plant procedure 0PGP03-ZA-0090, "Work Process Program". This program ensures effective work management by managing the risk associated with conducting work. This program procedure addresses the management of emergency maintenance and work as well as on-line work activities discovered during work start review or implementation that cause operational challenges.

As stated in the response to Question 6(c), procedures direct the plant staff to determine a course of action regarding maintenance in progress on inoperable equipment in the event of a degraded voltage condition for offsite power or external events such as imminent or tornados or hurricanes.

Plant procedure 0PGP03-ZA-0091, "Configuration Risk Management Program", provides risk reduction guidance when specific risk-significant thresholds, calculated by the plant's risk assessment calculator, are exceeded within a current work week. Although this procedure relies on quantitative tools to implement the risk reduction guidance, a number of risk reduction actions can be used during degraded grid reliability conditions. These include:

- Reduce the duration of risk-sensitive activities
- Accelerate the restoration of out-of-service equipment
- Determine and establish the safest plant configuration
- Establish a contingency plan to reduce the effects of the degradation of the affected SSC(s) by utilizing the following:
  - Operator actions
  - Increased awareness of plant configuration concerns and the effects of certain activities and transients on plant stability
  - Administrative controls
  - Ensure availability of functionally redundant equipment
- Notify plant management
- Review Technical Specifications, Technical Requirements Manual, and the Offsite Dose Calculation Manual requirements for affected equipment to ensure associated actions are being performed
- Consider augmenting current on site resources to assist in restoring equipment to functional status
- Evaluate changing current plant conditions to place the units in a mode or a power level that may reduce the relative risk. This evaluation would consider that changing plant conditions, such as reducing power, may expose the units to potential transients or may result in placing the grid in a worse condition if the units are taken off line.

NRC Question 6(e)

Describe the actions associated with questions 6(a) through 6(d) above that would be taken, state whether each action is governed by documented procedures and identify the procedures, and explain why these actions are effective and will be consistently accomplished.

STP Response:

See response to Questions 6(a) through 6(d).

NRC Question 6(f)

Describe how NPP operators and maintenance personnel are trained and tested to assure they can accomplish the actions described in your answers to question 6(e).

STP Response:

The STP Control Room staff are trained and tested on use of 0POP01-ZO-0006, Extended Allowed Time and 0PGP03-ZA-0091, "Configuration Risk Management Program", as part of the Licensed Operator Training program. This training covers procedure purpose and scope, as well as proper determination of when this procedure should be applied.

0POP01-ZO-0006 defines specific communication required with the TSO/TSP during grid-risk-sensitive maintenance activities. 0PGP03-ZA-0091 is used to assess the risk impact of equipment out-of-service and to maintain the station risk at desired levels.

NRC Question 6(g)

If there is no effective coordination between the NPP operator and the TSO regarding transmission system maintenance or NPP maintenance activities, please explain why you believe you comply with the provisions of 10 CFR 50.65(a)(4).

STP Response:

Effective coordination exists between STP and the TSO/TSP regarding maintenance activities that affect offsite power.

As stated in the response to Question 6(a), the outside entity and the on-shift personnel jointly coordinate access and transmission system maintenance activities in the switchyard. As stated in the response to Question 6(b), operations procedure 0POP01-ZO-0006, "Extended Allowed Outage Time", provides instructions to communicate and coordinate STP maintenance activities that impact or restrict transmission system activities for certain SSCs (e.g., standby diesel generators, essential cooling water, essential chilled water) that are taken out of service for greater than 72 hours. As stated in the response to Question 5(e), interconnection agreements are in place between the TSO/TSP, the Switchyard Owners, and STP. Both main control rooms have ring-down lines from the TSO/TSP so that secured information due to possible contingencies may be passed to each unit's Shift Supervisor.

NRC Question 6(h)

If you do not consider and effectively implement appropriate risk management actions during the conditions described above, explain why you believe you effectively addressed the relevant provisions of the associated NRC-endorsed industry guidance.

STP Response:

Appropriate risk management actions during the conditions described are effectively implemented.

NRC Question 6(i)

You may, as an alternative to questions 6(g) and 6(h) describe what actions you intend to take to ensure that the increase in risk that may result from grid-risk-sensitive maintenance activities is managed in accordance with 10 CFR 50.65(a)(4).

STP Response:

No additional actions are required.

Question 7

Question 7 deals with offsite power restoration procedures in accordance with 10 CFR 50.63 as developed in Section 2 of RG 1.155

Pursuant to 10 CFR 50.63, the NRC requires that each NPP licensed to operate be able to withstand an SBO for a specified duration and recover from the SBO. NRC RG 1.155 gives licensees guidance on developing their approaches for complying with 10 CFR 50.63.

This question deals with procedures for identifying local power sources that could be made available to resupply your plant following a LOOP event. Local power sources includes items such as nearby or onsite gas turbine generators, portable generators, hydro generators, and black-start fossil power plants. Of note, Section 2, "Offsite Power," of RG 1.155 (ADAMS Accession No. ML003740034) states:

> Procedures should include the actions necessary to restore offsite power and use nearby power sources when offsite power is unavailable. As a minimum, the following potential causes for loss of offsite power should be considered:
> - Grid undervoltage and collapse
> - Weather-induced power loss

- Preferred power distribution system faults that could result in the loss of normal power to essential switchgear buses

NRC Question 7(a)

Briefly describe any agreement made with the TSO to identify local power sources that could be made available to resupply power to your plant following a LOOP event.

STP Response:

As allowed by 10 CFR 50.63, each STP unit relies on an "Alternate AC" power source, instead of an offsite power source, to comply with station blackout requirements.

Existing plant procedures and commitments are adequate. The TSO and TSP will utilize the best sources available for specific events to restore offsite power and to determine the specific power sources and paths, since there is no way to predict the extent and characteristics of a specific blackout. The TSO has many options available to restore offsite power and would not be limited to identified local power sources.

TSO protocol states that NPPs in Texas receive first priority to restore power to the NPP as soon as possible. In addition, a grid operations procedure provides detailed instructions for prompt STP offsite power restoration.

NRC Question 7(b)

Are your NPP operators trained and tested on identifying and using local power sources to resupply your plant following a LOOP event? If so, describe how.

STP Response:

The STP Control Room staff are trained and tested on the use of the procedures related to restoration of power to site electrical buses following a LOOP event. 0PGP03-ZT-0132, "Licensed Operator Re-qualification", requires that licensed personnel review all Emergency and Off-Normal procedures during each two-year re-qualification period.

Specific procedures related to Loss of Offsite Power and system restoration that are trained on are:

- 0POP05-EO-EC00, "Loss of All AC Power"
- 0POP04-AE-0001, "First Response to Loss of Any or All 13.8 kV or 4.16 kV Bus"
- 0POP04-AE-0002, "Loss of One or More 13.8 kV Auxiliary or the Non-Class 4.16 kV Bus D"
- 0POP04-AE-0003, "Loss of Power to One or More 13.8 kV Standby Bus"
- 0POP04-AE-0004, "Loss of Power to One or More 4.16 kV ESF Bus"

NRC Question 7(c)

If you have not established an agreement with your plant's TSO to identify local power sources that could be made available to resupply power to your plant following a LOOP event, explain why you believe you comply with the provisions of 10 CFR 50.63, or describe what actions you intend to take to establish compliance.

STP Response:

Not Applicable – See answer to Question 7(a)

Question 8

Question 8 deals with losses of offsite power caused by grid failures at a frequency of equal to or greater than once in 20 site-years in accordance with Table 4 of Regulatory Guide 1.155 for complying with 10 CFR 50.63

Pursuant to 10 CFR 50.63, the NRC requires that each NPP licensed to operate be able to withstand an SBO for a specified duration and recover from the SBO. NRC RG 1.155 gives licensees guidance on developing their approaches for complying with 10 CFR 50.63.

This question deals with maintaining SBO coping capabilities in accordance with 10 CFR 50.63.

NRC Question 8(a)

(a) Has your NPP experienced a total LOOP caused by grid failure since the plant's coping duration was initially determined under 10 CFR 50.63?

STP Response:

No.

NRC Question 8(b)

If so, have you reevaluated the NPP using the guidance in Table 4 of RG 1.155 to determine if your NPP should be assigned to the P3 offsite power design characteristic group?

STP Response:

Not applicable - See answer to Question 8(a)

NRC Question 8(c)

If so, what were the results of this reevaluation, and did the initially determined coping duration for the NPP need to be adjusted?

STP Response:

Not applicable - See answer to Question 8(a)

NRC Question 8(d)

If your NPP has experienced a total LOOP caused by grid failure since the plant's coping duration was initially determined under 10 CFR 50.63 and has not been reevaluated using the guidance in Table 4 of RG 1.155, explain why you believe you comply with the provisions of 10 CFR 50.63 as stated above, or describe what actions you intend to take to ensure that the NPP maintains its SBO coping capabilities in accordance with 10 CFR 50.63.

STP Response:

Not applicable - See answer to Question 8(a)

Question 9

Question 9 deals with actions to ensure compliance.

If you determine that any action is warranted to bring your NPP into compliance with NRC regulatory requirements, including TSs, GDC 17, 10 CFR 50.65(a)(4), 10 CFR 50.63, 10 CFR 55.59 or 10 CFR 50.120, describe the schedule for implementing it.

STP Response:

STP is in compliance with GDC 17, 10 CFR 50.65(a)(4), 10 CFR 50.63, 10 CFR 55.59 or 10 CFR 50.120. No actions are warranted.

Attachment 2

Additional Information

Additional Information

At a public workshop[1] in January 2006, the NRC staff indicated that it may reconsider previous approvals of license amendments that extended the allowed emergency diesel generator outage periods (generally from 72 hours to 14 days) if it determines that the underlying assumptions regarding offsite power reliability are no longer valid.

STP Response:

STPNOC received licensing amendments on October 31, 1996 to allow extension of the standby diesel generator allowed outage time (AOT) to 14 days (ML021300535). The following statements were made in the accompanying NRC Safety Evaluation regarding assuring the availability and reliability of offsite power during entries into the AOT.

> "The licensee stated that the maintenance activities in the switchyard which could directly cause a loss of offsite power event will be prohibited unless required to ensure the continued reliability and availability of the offsite power sources. Transmission and Distribution personnel will be involved in this planning process to ensure all work to be performed is preplanned and no risk significant work is scheduled in the switchyard during the AOT. The licensee also stated that "current plant procedures will prevent voluntary entry into this LCO [limiting condition for operation] during expected adverse weather conditions." The weather conditions included are hurricane, tornado, and floodwatches and warnings." ......"Licensee procedures state that, for entry into the proposed LCOs with the proposed AOT extensions, certain actions need to be taken, or certain maintenance activities precluded."

The information referenced above and relied upon for approval of the AOT extension has been implemented in plant procedures.

Assumptions relating to these licensing amendments have not changed. Standby diesel generator unavailability with the revised allowed outage time has remained within 10 CFR 50.65(a)(4) criteria. Initiating event frequency, the likelihood of power recovery, and the contribution of loss of offsite power to core damage frequency and large early release frequency have not significantly changed since the standby diesel generator extended allowed outage time was approved. STP has not experienced a total loss of offsite power caused by grid failure.

As described previously, protocols established with the TSO maintain assurance that changing electrical grid conditions will be communicated to STPNOC in a timely manner so that appropriate compensatory measures specified in plant procedures can be implemented to manage risk.

[1] NRC Workshop on Generic Letter 2006-XX, *Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power,* January 9-10, 2006

STPNOC concludes that the underlying assumptions regarding offsite power reliability for extension of the allowed emergency diesel generator outage period to 14 days remain valid.