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, UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS RE: BROAD SCOPE RISK-INFORMED TECHNICAL SPECIFICATIONS AMENDMENTS (TAC NOS. MD2341 AND MD2342)

Dear Mr. Sheppard:

The Commission has issued the enclosed Amendment No. to Facility Operating License NPF-76 and Amendment No. to Facility Operating License NPF-80 for the South Texas Project, Units 1 and 2, respectively. The amendments consist of changes to the Technical Specifications (TSs) in response to your application dated August 2, 2004, as supplemented by letters dated October 28, 2004, February 10, 2006, and April 26, 2006. You resubmitted your application in its entirety on June 6, 2006, and was supplemented the resubmittal by letters dated December 28, 2006, February 28, 2007, May 9, 2007, and May 17, 2007. The supplements provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination.].

The amendments provide a new action for selected TS limiting conditions for operation to permit extending the completion times of action requirements subject to the requirement that the risk is assessed and managed. A new, Configuration Risk Management Program is added to the TS under Administrative Controls, as a risk assessment tool.

The amendments support the risk-informed TS initiative 4b for which STP, Units 1 and 2 are pilot plants. The evaluations supporting the initiative 4b are performed using the risk-informed methodology documented in NEI 06-09, developed by the Nuclear Energy Institute and approved by the NRC on May 17, 2007.

A copy of our related Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

Mohan C. Thadani, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-498 and 50-499

Enclosures:
1. Amendment No. to NPF-76
2. Amendment No. to NPF-80
3. Safety Evaluation

cc w/encls: See next page

A copy of our related Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

Mohan C. Thadani, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-498 and 50-499

Enclosures: 1. Amendment No. to NPF-76
2. Amendment No. to NPF-80
3. Safety Evaluation

cc w/encls: See next page

DISTRIBUTION:
PUBLIC
LPLIV Reading
RidsNrrDorlLpl4
RidsNrrPMMThadani
RidsNrrLA
RidsOgcRp
RidsAcrsAcnwMailCenter
GHill
RidsNrrDirsItsb
Principal Contributors to SE
RidsRgn4MailCenter
RidsNrrDorlDpr

Accession No.: * No significant change to SE input

OFFICE	NRR/LPL4/PM	NRR/LPL4/LA	NRR/TSB/BC*	NRR/APLA/BC*	OGC	NRR/LPL4/BC
NAME	MThadani	JBurkhardt	TKobetz	MRubin		THiltz
DATE						

OFFICIAL RECORD COPY
DOCUMENT NAME: C:\FileNet\ML071690352.wpd

STP NUCLEAR OPERATING COMPANY

DOCKET NO. 50-498

SOUTH TEXAS PROJECT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No.
License No. NPF-76

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 NRG South Texas LP, the City Public Service Board of San Antonio (CPS), AEP Texas Central Company, and the City of Austin, Texas (COA) (the licensees), dated June 6, 2006, as supplemented by letters dated December 28, 2006, February 28, 2007; and May 9 and 17, 2007, 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 NRG South Texas 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, the license is amended by changes to the Technical Specifications and Paragraph 2.C.(2) of Facility Operating License No. NPF-76 as indicated in the attachment to this license amendment.

3. The license amendment is effective as of its date of issuance and shall be implemented within 180 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Thomas G. Hiltz, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the Facility
Operating License No. NPF-76
and the Technical Specifications

Date of Issuance:

STP NUCLEAR OPERATING COMPANY

DOCKET NO. 50-499

SOUTH TEXAS PROJECT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No.
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 NRG South Texas LP, the City Public Service Board of San Antonio (CPS), AEP Texas Central Company, and the City of Austin, Texas (COA) (the licensees), dated dated June 6, 2006, as supplemented by letters dated December 28, 2006, February 28, 2007; and May 9 and 17, 2007, 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 NRG South Texas 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-

2. Accordingly, the license is amended by changes to the Technical Specifications and Paragraph 2.C.(2) of Facility Operating License No. NPF-80 as indicated in the attachment to this license amendment.

3. The license amendment is effective as of its date of issuance and shall be implemented within 120 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Thomas G. Hiltz, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the Facility
Operating License No. NPF-80
and the Technical Specifications

Date of Issuance:

ATTACHMENT TO LICENSE AMENDMENT NOS. AND

FACILITY OPERATING LICENSE NOS. NPF-76 AND NPF-80

DOCKET NOS. 50-498 AND 50-499

Replace the following pages of the Facility Operating Licenses, Nos. NPF-76 and NPF-80, and 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.

Facility Operating Licenses

REMOVE	INSERT

Technical Specifications

REMOVE	INSERT

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. AND TO

FACILITY OPERATING LICENSES NPF-76 AND NPF-80

STP NUCLEAR OPERATING COMPANY, ET AL.

SOUTH TEXAS PROJECT, UNITS 1 AND 2

DOCKET NOS. 50-498 AND 50-499

1.0 INTRODUCTION AND BACKGROUND

By risk-informed application dated August 2, 2004 (Ref. 2), and as supplemented by letters dated October 28, 2004 (Ref. 3), February 10, 2006 (Ref. 4), April 26, 2006 (Ref. 5), STP Nuclear Operating company (STPNOC), Licensee for South Texas Project (STP), Units 1 and 2, requested amendments to revise the Technical Specifications (TS), for STP Units 1 and 2, in accordance with Part 50.90 of Title 10 of the *Code of Federal Regulations* (10 CFR). B y letter dated June 6, 2006 (Ref. 6), as supplemented by letters dated December 28 (Ref. 7), 2006, February 28, 2007 (Rrf. 8), May 9, 2007 (Ref. 9), and May 17,2007 (Ref. 10), the licensee resubmitted its application in its entirety. The supplements provided additional information that clarified the application, but did not expand the scope of the application as noticed and did not change the staff's proposed no significant hazards consideration determination as published in the Federal Register on June 12, 2007 (72 FR 32332).

1.1 Proposed License Amendments

The proposed amendments would provide a new action for selected TS limiting conditions for operation to permit extending the completion times (CT) of action requirements, provided risk is assessed and managed in accordance with the Configuration Risk Management Program (CRMP) as defined in the Administrative Controls of TS, Section 6.8.3.k. The new CT is calculated based on incremental core damage probability (ICDP) and incremental large early release probability (ILERP), and is referred to as a risk-informed completion time (RICT).

1.2 Related U.S. Nuclear Regulatory Commission (NRC) Actions

The amendments request was processed concurrently with the staff review of the Nuclear Energy Institute's (NEI's) methodology document NEI 06-09 Rev. 0, "Risk-Informed Technical Specifications Initiative 4B, Risk-Managed Technical Specifications (RMTS) Guidelines," November 2006 (Ref. 1). The staff approved NEI 06-09 Rev. 0, and issued its safety evaluation on May 17, 2007.

1.3 Background

The amendments request is a pilot submittal in support of risk-informed TS initiative 4B. NEI has separately developed a risk-informed methodology, documented in NEI 06-09 Rev. 0. The methodology document was separately submitted for the NRC review and approval, and was approved on May 17, 2007.

NEI 06-09 provides a risk-informed methodology which would permits a licensee to implement RMTS, to permit the extension of CTs, also referred to as the allowed outage times (AOT), associated with actions of TS, provided risk is assessed and managed within a CRMP. Thus the methodology in NEI 06-09 supports industry initiative 4B of the risk-informed TS program. The initiative 4b is intended to maintain or improve safety through the incorporation of risk assessment and management techniques in TS, while reducing unnecessary burden and making TS requirements consistent with the Commission's other risk-informed regulatory requirements.

For those limiting conditions for operation (LCO) within the proposed plant-specific scope of the RMTS, a new action requirement is provided to permit continued operation beyond the existing CTs of applicable action requirements of the LCOs. This new action requirement tracks risk as measured by the configuration-specific core damage frequency (CDF) and large early release frequency (LERF), and assesses this risk using processes and limits specified in NEI 06-09. Additional requirements for compensatory measures or risk management actions (RMA), requirements for scope and quality of the probabilistic risk assessment (PRA) models used in the CRMP, and for quantitative evaluation of risk sources for which PRA models may not be available, are also specified.

2.0 REGULATORY EVALUATION

2.1 Applicable Regulations

In Title 10 of the *Code of Federal Regulations* (10 CFR) 50.36, the Commission established its regulatory requirements related to the content of TSs. Pursuant to 10 CFR 50.36, TSs will include items in the following five specific categories related to station operation: (1) safety limits, limiting safety system settings, and limiting control settings; (2) LCOs; (3) surveillance requirements; (4) design features; and (5) administrative controls. The rule does not specify the particular requirements to be included in a plant's TSs. As stated in 10 CFR 50.36(c)(2), "Limiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility. When a limiting condition for operation of a nuclear reactor is not met, the licensee will shut down the reactor or follow any remedial action permitted by the technical specifications until the condition can be met."

Most TS LCOs provide a fixed time interval, referred to as the AOT or CT, during which the LCO may not be met, to permit a licensee to perform required testing, maintenance, or repair activities. Normally, upon expiration of the CT, the requirement to shut down the reactor or follow remedial action is imposed. The methodology document, NEI 06-09 Rev. 0, provides a means for the licensee to extend the CT and thereby delay reactor shutdown or remedial actions, if risk is assessed and managed within specified limits and programmatic requirements established by the CRMP. The regulatory requirements for the content of LCOs will continue to be met, since only the CT is changed by the methodology documented in NEI 06-09 Rev. 0. The specific functional capabilities or performance levels of equipment are unchanged, and the remedial actions, including the requirement to shut down the reactor, are also unchanged; only the specific time limits for initiating actions are extended by the methodology documented in NEI 06-09 Rev 0.

The maintenance rule, 10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," requires licensees to monitor the performance or condition of structures, systems and components (SSCs) against licensee-established goals, in a manner sufficient to provide a reasonable assurance that these SSCs are capable of fulfilling their intended functions. In addition,10 CFR 50.65(a)(4) requires the assessment and management of the increase in risk that may result from a proposed maintenance activity. The proposed methodology in NEO 06-09 uses processes which are consistent with and complementary to the requirements of 10 CFR 50.65(a)(4).

2.2 Applicable Regulatory Criteria/Guidelines

The regulatory guidelines (RG) on which the APLA staff based its acceptance are:

- RG 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," (Ref. 10), describes a risk-informed approach, acceptable to the NRC, for assessing the nature and impact of proposed permanent licensing-basis changes by considering engineering issues and applying risk insights. This regulatory guide also provides risk acceptance guidelines for evaluating the results of such evaluations.

- RG 1.177, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications," (Ref. 11), describes an acceptable risk-informed approach specifically for assessing proposed permanent TS changes in allowed outage times. This regulatory guide also provides risk acceptance guidelines for evaluating the results of such assessments. RG 1.177 identifies a three-tiered approach for the licensees evaluation of the risk associated with a proposed CT TS change, as discussed below.

- Tier 1 assesses the risk impact of the proposed change in accordance with acceptance guidelines consistent with the Commission's Safety Goal Policy Statement, as documented in RG 1.174 and RG 1.177. The first tier assesses the impact on operational plant risk based on the change in core damage frequency (ΔCDF) and change in large early release frequency (ΔLERF). It also evaluates plant risk while equipment covered by the proposed CT is out-of-service, as represented by incremental conditional core damage probability (ICCDP) and incremental conditional large early release probability (ICLERP). Tier 1 also addresses PRA quality, including the technical adequacy of the licensee's plant-specific PRA for the subject application. Cumulative risk of the present TS change in light of past related applications or additional applications under review are also considered along with uncertainty/sensitivity analysis with respect to the assumptions related to the proposed TS change.

- Tier 2 identifies and evaluates any potential risk-significant plant equipment outage configurations that could result if equipment, in addition to that associated with the proposed license amendments, are taken out-of-service simultaneously, or if other risk-significant operational factors, such as concurrent system or equipment testing, are also involved. The purpose of this evaluation is to ensure that there are appropriate restrictions in place such that risk-significant plant equipment outage configurations will not occur when equipment associated with the proposed CT is implemented.

- Tier 3 addresses the licensee's overall configuration risk management program (CRMP) to ensure that adequate programs and procedures are in place for identifying risk-significant plant configurations resulting from maintenance or other operational activities and appropriate compensatory measures are taken to avoid risk significant configurations that may not have been considered when the Tier 2 evaluation was performed. Compared with Tier 2, Tier 3 provides additional means to ensure risk-significant plant equipment outage configurations are identified in a timely manner and that the risk impact of out of service equipment is appropriately evaluated prior to performing any maintenance activity over extended periods of plant operation. Tier 3 guidance can be satisfied by the Maintenance Rule (10 CFR 50.65(a)(4)), which requires a licensee to assess and manage the increase in risk that may result from activities such as surveillance testing and corrective and preventive maintenance, subject to the guidance provided in RG 1.177, Section 2.3.7.1, and the adequacy of the licensee's program and PRA model for this application. The CRMP is to ensure that equipment removed from service prior to or during the proposed extended CT will be appropriately assessed from a risk perspective.

General guidance for evaluating the technical basis for proposed risk-informed changes is provided in Chapter 19, "Use of Probabilistic Risk Assessment in Plant-Specific, Risk-Informed Decisionmaking: General Guidance," of the NRC Standard Review Plan (SRP), NUREG-0800 (Ref. 12). Guidance on

evaluating PRA technical adequacy is provided in Section 19.1, "Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities" (Ref. 13). More specific guidance related to risk-informed TS changes is provided in SRP Section 16.1, "Risk-Informed Decisionmaking: Technical Specifications," (Ref. 14), which includes CT changes as part of risk-informed decisionmaking.

Chapter 19 of the SRP states that a risk-informed application should be evaluated to ensure that the proposed changes meet the following key principles:

- The proposed change meets the current regulations, unless it explicitly relates to a requested exemption or rule change.
- The proposed change is consistent with the defense-in-depth philosophy.
- The proposed change maintains sufficient safety margins.
- When proposed changes increase CDF or risk, the increase should be small and consistent with the intent of the Commission's Safety Goal Policy Statement.
- The impact of the proposed change should be monitored using performance measurement strategies.

RG 1.200 Rev. 1, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities," (Ref. 15), describes one acceptable approach for determining whether the quality of the PRA, in total or the parts that are used to support an application, is sufficient to provide confidence in the results, such that the PRA can be used in regulatory decisionmaking for light-water reactors.

3.0 TECHNICAL EVALUATION - PROBABILISTIC RISK ASSESSMENT

The staff has reviewed the licensee's analysis in support of its proposed license amendments, which are described in the submittals dated August 2, 2004, and June 6, 2006, and as supplemented by letters dated October 28, 2004, February 10, 2006, April 26, 2006, December 28, 2006, February 28, 2007, May 9, 2007, and May 17, 2007.

3.1 Detailed Description of the Proposed Change

This section describes in detail the specific TS LCOs and action requirements to which the RMTS program methodology may be applied.

Section 6.8.3.k, which describes the CRMP, is modified to read as follows:

> *A program to calculate risk-informed completion time in accordance with NEI 06-09, "Risk-Managed Technical Specifications Guidelines, Rev. 0." The CRMP may be used for calculation of a risk-informed completion time only in Mode 1 and Mode 2. In accordance with NEI 06-09, the completion time determined using the CRMP shall not be more than 30 days.*

Individual LCO actions modified by the proposed change are identified below.
LCO 3.3.1 Reactor Trip System Instrumentation

- Action statement 9A

- Table 3.3-1 item 18 Safety Injection (SI) Input from Engineered Safety Features Actuation System (ESFAS)
- Table 3.3-1 item 21 Automatic Trip and Interlock Logic.

LCO 3.3.2 ESFAS Instrumentation

- Action statement 14
- Table 3.3-3 item 1b SI automatic actuation logic
- Table 3.3-3 item 1c SI actuation relays
- Table 3.3-3 item 2b Containment Spray (CS) automatic actuation logic
- Table 3.3-3 item 2c CS actuation relays
- Action statement 17 Table 3.3-3 item 2d CS actuation on Containment Pressure High-3
- Action statement 19
- Table 3.3-3 item 1a SI manual initiation
- Table 3.3-3 item 2a CS manual initiation
- Action statement 19A (new action)
- Table 3.3-3 item 7a Automatic Switchover to Containment Sump automatic actuation logic and actuation relays
- Table 3.3-3 item 7b Automatic Switchover to Containment Sump on Refueling Water Storage Tank (RWST) Level - Low-Low
- Action statement 20A (new action)
- Table 3.3-3 item 1d SI on Containment Pressure High-1
- Table 3.3-3 item 8 Loss of Power
- Action statement 22
- Table 3.3-3 item 4b Steam Line Isolation automatic actuation logic and actuation relays
- Table 3.3-3 item 6b Auxiliary Feedwater (AFW) automatic actuation logic
- Table 3.3-3 item 6c AFW actuation relays

LCO 3.3.5.1 Atmospheric Steam Relief Valve Instrumentation

- Action statement 2
- Table 3.3-14 Automatic actuation control channels LCO 3.4.4 Relief Valves
- Action b (One power-operated relief valve (PORV) inoperable due to causes other than excessive seat leakage)

- Action c (Both PORVs inoperable due to causes other than excessive seat leakage)
- Action d (One block valve inoperable)
- Action e (Both block valves inoperable)

LCO 3.5.1 Accumulators

- Action a (One accumulator inoperable, except due to boron concentration outside limits)
- Action b (More than one accumulator inoperable, except due to boron concentration outside limits - new action)
- Action c (One accumulator with boron concentration outside limits)
- Action d (More than one accumulator with boron concentration outside limits - new action)

LCO 3.5.2 Emergency Core Cooling System

- Action a (One of three trains inoperable)
- Action b (Two or three trains inoperable - new action)

LCO 3.5.5 RWST

LCO 3.5.6 Residual Heat Removal System

- Action a (One of three loops inoperable)
- Action b (Two of three loops inoperable)

LCO 3.6.2.1 CS System

- Action a (One of three systems inoperable)
- Action b (Two or three systems inoperable - new action)

LCO 3.6.2.3 Reactor Containment Fan Coolers

- Action a (One of three groups inoperable)
- Action b (Two or three groups inoperable - new action)

LCO 3.6.3 Containment Isolation Valves

LCO 3.7.1.2 AFW

- Action a (One of three motor-driven pumps inoperable)
- Action b (Two of three motor-driven pumps, or the turbine-driven pump inoperable)
- Action c (Three pumps inoperable)

LCO 3.7.1.3 AFW Storage Tank

LCO 3.7.1.5 Main Steam Line Isolation Valves (MSIV)

- Action a (One MSIV inoperable but open)
- Action b (More than one MSIV inoperable but open - new action)

LCO 3.7.1.6 Atmospheric Steam Relief Valves

- Action a (One of four valves inoperable)
- Action b (Two of four valves inoperable)
- Action c (Three or four valves inoperable - new action)

LCO 3.7.3 Component Cooling Water System

- Action a (One of three loops inoperable)
- Action b (Two or three loops inoperable - new action)

LCO 3.7.4 Essential Cooling Water System

- Action a (One of three loops inoperable)
- Action b (Two or three loops inoperable - new action)

LCO 3.7.7 Control Room Makeup and Cleanup Filtration System

- Modes 1-4 Action a (One of three systems inoperable)
- Modes 1-4 Action b (Two of three systems inoperable)
- Modes 1-4 Action c (Three of three systems inoperable)

LCO 3.7.14 Essential Chilled Water System

- Action a (One of three loops inoperable)
- Action b (Two or three loops inoperable - new action)

LCO 3.8.1.1 Alternating Current (AC) Sources - Operating

- Action a (One of two offsite circuits inoperable)
- Action b (One of three standby diesel generators inoperable)
- Action c (One of two offsite circuits and one of three standby diesel generators inoperable)
- Action d (One of three standby diesel generators inoperable)
- Action e (Two of two offsite circuits inoperable)
- Action f (Two or three standby diesel generators inoperable)

LCO 3.8.2.1 Direct Current (DC) Sources - Operating

- Action a (One of four battery banks inoperable)
- Action b (Two or more battery banks inoperable - new action)
- Action c (One channel with no operable battery charger)
- Action d (Two or more channels with no operable batter charger - new action)

LCO 3.8.3.1 Onsite Power Distribution - Operating

- Action a (One of three AC Engineered Safety Features (ESF) busses not fully energized)
- Action b (Two or three AC ESF busses not fully energized - new action)
- Action c (One vital AC distribution panel not energized from associated inverter connected to DC bus)
- Action d (Two or three vital AC distribution panels not energized from associated inverter connected to DC bus - new action)
- Action e (One DC bus not energized from associated battery bank)
- Action f (Two or three DC busses not energized from associated battery bank - new action)

In general, the proposed change to implement the RMTS program provides an alternative action to these existing TS actions at the point when a plant shutdown would be required. If the plant is in either mode 1 or mode 2, the CRMP may be applied to establish a RICT to permit delaying the plant shutdown, up to a limit of 30 days. Once a RICT is established and the TS action applied, any changes to the plant configuration which would alter the RICT must be evaluated within time limits established in the CRMP. Upon expiration of the RICT, the TS action for plant shutdown is applicable.

The licensee has also proposed to establish new action requirements which apply when multiple trains are inoperable. Under the existing TS, such configurations would have resulted in applicability of TS 3.0.3 and an immediate plant shutdown. STP has established action requirements which repeat the shutdown requirements and time limits of TS 3.0.3 in each individual TS action, but also providing for application of the CRMP to establish a RICT. In accordance with NEI 06-09, the use of a RICT when all trains of a TS system are inoperable is restricted to conditions in which the TS system retains functionality and the CRMP can discern which TS functions are available and which are failed due to the inoperability.

3.2 Review Methodology

Per SRP Chapter 19 and Section 16.1, the staff reviewed the submittal using the three-tiered approach and the five key principles of risk-informed decisionmaking presented in RG 1.174 and RG 1.177.

3.3 Key Information Used in the Review

The key information used in the staff's review is contained in the licensee's submittals dated August 2, 2004, and June 6, 2006, and as supplemented by letters dated October 28, 2004, February 10, 2006, April 26, 2006, December 28, 2006, February 28, 2007, May 9, 2007, and May 17, 2007.

3.4 Comparison Against Regulatory Criteria/Guidelines

The staff's evaluation of the licensee's proposed changes using the three-tiered approach and the five key principles outlined in RGs 1.174 and 1.177 are presented in the following sections.

3.4.1 Traditional Engineering Evaluation

The traditional engineering evaluation addresses the following key principles 1, 2, 3, and 5 of the staff's philosophy of risk-informed decisionmaking, which concerns compliance with current regulations, evaluation of defense-in-depth, evaluation of safety margins, and implemetation of monitoring strategies.

Key Principle 1: Compliance With Current Regulations

The proposed changes provide a risk-informed methodology for determining the CTs associated with selected TS. The proposed changes are in compliance with current regulations. The evaluations provided in this application confirm that the proposed changes maintain adequate defense-in-depth, safety margin, and the capability to meet plant design-basis. Additionally, the risk-informed CTs proposed are consistent with the CRMP and the Maintenance Rule in ensuring adequate margin to core damage and/or radiation release. Therefore, the proposed changes to the TS comply with all current regulations and meet all license conditions.

Key Principle 2: Evaluations of Defense-in-Depth

The risk assessment for determining a risk-informed CT will adequately consider defense-in-depth, quantitatively in the PRA model and by a qualitative assessment of the specific configuration. The proposed TS changes preserve the existing balance between avoidance of core damage, avoidance of containment failure, and consequence mitigation by ensuring that CTs are based upon the cumulative risk associated with the current plant configuration. The CRMP, in conjunction with the PRA, measures and accounts for the level of defense-in-depth on both, an instantaneous, and a cumulative basis. It considers plant design features, operating philosophy, and equipment capability. The ability of the CRMP to assess the level of defense-in-depth is a substantial technological improvement over methods of implementation currently incorporated in TS .

Consistency with the defense-in-depth philosophy is maintained by the following:

- A reasonable balance is preserved among avoidance of core damage, avoidance of containment failure, and consequence mitigation.

- Over-reliance on programmatic activities to compensate for weaknesses in plant design is avoided.

- System redundancy, independence, and diversity are preserved; commensurate with the expected frequency, consequences of challenges to the system, and uncertainties (e.g., no risk outliers).

- Defenses against potential common cause failures are preserved and the potential for the introduction of new common cause failure mechanisms is assessed.

- Independence of barriers is not degraded.

- Defenses against human errors are preserved.

- The intent of the general design criteria in 10 CFR Part 50, Appendix A to provide reasonable assurance that the facilities can be operated without undue risk to the health and safety of the public, is maintained.

The proposed change represents a more robust technical approach that preserves a reasonable balance among avoidance of core damage, avoidance of containment failure, and consequence mitigation. STP is proposing no changes to the design of the plant or any operating parameter, no new operating configurations, and no new changes to the design basis in the proposed changes to the TS. The effect of the proposed changes when implemented will be that the CRMP will allow CTs to vary based on the risk significance of the given plant configuration (i.e., the amount of equipment removed from service at any given time).

The proposed application of a plant-specific CRMP to determine CTs uses plant specific operating experience for component reliability and availability data. Thus, the allowances permitted by the CRMP are directly reflective of actual component performance in conjunction with component risk significance. In some cases the CRMP may use compensatory actions to reduce calculated risk in some configurations. Where credited in the PRA, these actions are incorporated into station procedures or work instructions and have been modeled using appropriate human reliability considerations. The high degree of redundancy at STP reduces the reliance that might otherwise be placed on operator action or other programmatic activities.

Application of the CRMP determines the risk significance of plant configurations. It also permits the operator to identify the equipment that has the greatest effect on the existing configuration risk. With this information, the operator can manage the out-of-service duration and determine the consequences of removing additional equipment from service. The application of the CRMP approach places high value on key safety functions and works to ensure they remain a top priority over all plant conditions. Application of the CRMP provides a structure to assist the operator in identifying effective compensatory actions for various plant maintenance configurations to maintain and manage acceptable risk levels.

Use of Compensatory Measures to Retain Defense In Depth

NEI 06-09, Revision 0, addresses potential compensatory actions and risk management action measures by stating, in generic terms, that compensatory measures may include but are not limited to the following:

- Reduce the duration of risk sensitive activities.

- Remove risk sensitive activities from the planned work scope.

- Reschedule work activities to avoid high risk-sensitive equipment outages or maintenance states that result in high risk plant configurations.

- Accelerate the restoration of out-of-service equipment.

- Determine and establish the safest plant configuration.

NEI 06-09, Revision 0, stipulates that compensatory measures be initiated when the PRA calculated RMAT **[not defined]** is exceeded, or for preplanned maintenance for which the RMAT is expected to be exceeded, and RMAs shall be implemented at the earliest appropriate time. For example, compensatory measures are to be considered by STP during the extended period that a SDG is inoperable, as

described in the STP existing Configuration Risk Management Program, that will reduce the exposed risk and to ensure adequate Defense-in-Depth (similar to the compensatory measures provided by the existing procedures). Examples of compensatory measures that can be established are provided under A and B below.

A. Examples of compensatory measures that should be considered during the extended period that a diesel generator (DG) is inoperable, so that the increased risk is reduced and to ensure adequate defense in depth, are:

(1) The condition of the offsite power supply, switchyard, and the grid should be evaluated prior to entering the extended CT for elective maintenance, and RMAs considered, particularly during times of high grid stress conditions, such as during high demand conditions;

(2) Deferral of switchyard maintenance should be considered, such as deferral of discretionary maintenance on the main, auxiliary, or startup transformers associated with the unit;

(3) Deferral of maintenance that affects the reliability of the trains associated with the operable DGs should be considered.

(4) Deferral of planned maintenance activities on station blackout mitigating systems (such as the steam driven emergency feedwater pump) should be considered, and consideration given to treating those systems as protected equipment.

(5) Consider contacting the dispatcher on a periodic basis to provide information on the DG status and the power needs of the facility.

B. Examples of compensatory measures that should be considered during the extended period that a safety related battery is inoperable for elective maintenance, so that the increased risk is reduced and to ensure adequate defense in depth, are:

(1) Consider limiting the immediate discharge of the affected battery.

(2) Consider recharging the affected battery to float voltage conditions using a spare battery charger.

(3) Evaluate the remaining battery capacity and its ability to perform its safety function.

(4) Periodically verify battery float voltage is equal to or greater than the minimum required float voltage.

Key Principle 3: Evaluation of Safety Margins

The CT changes proposed represent a risk-neutral to risk-beneficial change. Therefore, sufficient margins are maintained as a result of the proposed changes. Since this is a risk informed application, no change is proposed on design-basis features of the station. There are no changes to plant safety limits or setpoints.

Key Principle 4: Change in Risk Consistent with Commission's Safety Goal Policy (addressed in section 3.4.2 below)

Key Principle 5: Performance Measurement Strategies - Implementation and Monitoring Program

RG 1.174 and RG 1.177 establish the need for an implementation and monitoring program to ensure that extensions to TS CTs do not degrade operational safety over time and that no adverse degradation

occurs due to unanticipated degradation or common cause mechanisms. An implementation and monitoring program is intended to ensure that the impact of the proposed TS change continues to reflect the reliability and availability of systems, structures, and components (SSCs) impacted by the change. RG 1.174 states that monitoring performed in conformance with the Maintenance Rule, 10 CFR 50.65, can be used when the monitoring performed is sufficient for the SSCs affected by the risk-informed application. NEI 06-09 provides for a periodic evaluation of any increase in risk due to the use of the RMTS program to extend the CTs. This evaluation assesses any increase in CDF and LERF against the criteria of RG 1.174 to assure that RMTS program implementation meets RG 1.174 guidance for small risk increases. If the program causes risk increases in excess of RG 1.174, the licensee's corrective action program is used to address the issue. The licensee is implementing NEI 06-09 Rev. 0 without exception, and therefore complies with this RMTS program requirement.

Changes to core damage frequency and cumulative risk associated with TS related equipment being out of service will continue to be monitored in accordance with the CRMP and Maintenance Rule Program. Plant-specific performance indicators have already been identified and developed and have been in use for several years at STP.

3.4.2 Staff Technical Evaluation (PRA)

The evaluation presented below addresses the staff's philosophy of risk-informed decisionmaking, that when the proposed changes result in a change in CDF or risk, the increase should be small and consistent with the intent of the Commission's Safety Goal Policy Statement (Key Principle 4).

3.4.2.1 Tier 1: PRA Capability and Insights

The first tier evaluates the impact of the proposed changes on plant operational risk. The Tier 1 staff review involves two aspects: (1) evaluation of the validity of the STP PRA models and their application to the proposed changes, and (2) evaluation of the PRA results and insights based on the licensee's proposed application.

PRA Quality

The objective of the PRA quality review is to determine whether the STP PRA used to implement the RMTS program is of sufficient scope, level of detail, and technical adequacy for this application.

As described in NEI 06-09, the PRA models must conform to the guidance of RG 1.200 Rev. 0, and capability category II of American Society of Mechanical Engineers (ASME) Standard ASME RA-S-2002 , "Standard for Probabilistic Risk Assessment for Nuclear Power Plant Applications." In its safety evaluation of NEI 06-09, the staff noted that revision 1 to RG 1.200 was issued in January 2007, which endorsed ASME RA-Sb-2005, "Addenda to ASME RA-S-2002, Standard for Probabilistic Risk Assessment for Nuclear Power Plant Applications." The staff therefore took exception to this particular part of NEI 06-09 and requires licensees to conform to the updated RG 1.200 Rev. 1. The staff's assessment of the licensee's PRA quality is based on the updated guidance.

The staff evaluated the PRA quality information provided by the licensee in their submittal dated October 28, 2004, supplemented by submittals dated February 10, 2006, April 26, 2006, and February 28, 2007, including industry peer review results and the licensee self-assessment of the STP PRA against the requirements of RG 1.200 Rev. 0.

For external events and internal fires, the staff reviewed the information submitted by the licensee against the high level guidance identified by RG 1.200 Rev. 1 in their submittals dated February 10, 2006, April 26, 2006, and February 28, 2007. In addition, the staff performed a site visit in June 2006, and performed additional focused reviews on external events and internal fires PRA models.

The STP PRA is a full scope level 1 and level 2 PRA that includes both internal and external initiating events, including fires, floods, seismic events, and high winds. The PRA is maintained and updated under a PRA configuration control program in accordance with station procedures. Periodic reviews are conducted and updates are performed, if necessary, for plant changes including performance data, procedures, and modifications. The reviews and updates are performed by qualified personnel with independent reviews and approvals.
In April 2002, the STP PRA underwent an industry peer review performed in accordance with NEI 00-02, "Industry PRA Peer Review Process." All facts and observations (F&Os) identified by the review team have now been completed and are incorporated into the current STP PRA models. The staff reviewed the information provided regarding the scope and resolution of F&Os (Attachment 5 of the October 2004 submittal, updated by submittals dated February 10, 2006, April 26, 2006, and February 28, 2007), and the items were properly addressed by the licensee based on their documented resolutions.

The licensee submitted its assessment of the STP PRA against each of the supporting requirements of Standard ASME RA-S-2002 for its internal events PRA model. Where the standard provides separate requirements for capability categories, the licensee based its assessment on category II, consistent with the guidance of NEI 06-09. The licensee did not identify any exceptions to the standard. The staff reviewed this information and performed additional focused reviews during a site visit in June 2006. The staff review also considered the technical changes between ASME RA-S-2002 and its update in ASME-RA-Sb-2005, along with changes and clarifications of RG 1.200 Rev. 1. Based on the licensee's assessment and the staff reviews, the staff determined that the STP PRA internal events model satisfied the guidance of RG 1.200 Rev. 1, and conformed to capability category II of the ASME standard for the supporting requirements. Therefore, the STP internal events PRA was determined to be of sufficient technical adequacy to support the RMTS application.

NEI 06-09 requires a quantitative treatment of fire risk and other significant external events, since these sources of risk may impact the calculations which support RMTS. Therefore, to support the RMTS application, a sufficient quality of the fire and external events PRA models is required. Currently, there are no endorsed standards for these models, and RG 1.200 Rev. 1 provides only high level guidance for model scope and quality. The licensee submitted information supporting the technical adequacy of its fire and external events models consistent with the guidance of RG 1.200 Rev. 1. The staff reviewed this information, and performed additional reviews during a site visit in June 2006.

The STP fire PRA model was originally completed in 1989 as part of the level 1 model. The fire PRA was reviewed by Sandia National Laboratory (SNL) as documented in NUREG/CR-5606, "A Review of the South Texas Project Probabilistic Safety Analysis for Accident Frequency Estimates and Containment Binning (August 1991)." Several improvements were made in response to resolution of the technical comments. SNL found the STP fire analysis to be acceptable, based on the physical separation in the STP design, the technical approach used to meet fire protection requirements, and the three and four train redundancy of most of the STP safety-related systems.

The fire PRA was subsequently updated in 1992 to reflect the plant design as of April 15, 1991, and in 1994 to address Thermolag performance. A comprehensive walkdown was performed in May 1994.

RG 1.200 Rev. 1 identifies five specific technical elements to be addressed by a fire PRA: the use of screening analyses, fire initiation analysis, fire damage analyses, plant response analyses, and quantification. The licensee confirmed in its April 26, 2006, submittal that all of these elements are addressed in the STP fire PRA model and documentation. In response to a staff concern regarding the screening of fire sequences for the RMTS application, the licensee reviewed screened sequences to determine if any of the fire sequences could significantly alter the RICT calculated by the STP PRA. The licensee did not identify any screened sequences which should be included in the STP PRA model used for the RMTS calculations.

Based on the licensee's submittal and the staff's focused reviews, the STP PRA fire model addresses the technical characteristics and attributes of these elements as identified in RG 1.200 Rev. 1 requirements as they relate to issues which could impact the fire model's adequacy for implementation of RMTS, and is acceptable to support the RMTS application.
The staff reviewed the external events modeled in the STP PRA, including seismic events, high wind events, and external flooding, and found that the data and assumptions applied were reasonable and conservative. The licensee confirmed in its April 26, 2006, submittal that the technical elements identified in RG 1.200 for external hazards are addressed in the STP PRA models and documentation. Based on the licensee's submittals and staff reviews, the STP PRA external events models satisfy RG 1.200 Rev. 1 requirements and are acceptable to support the RMTS application.

The staff finds that the licensee has satisfied the intent of RG 1.177 (Sections 2.3.1, 2.3.2, and 2.3.3), RG 1.174 (Section 2.2.3 and 2.5), and SRP Section 19.1, and that the quality of the STP PRA is sufficient to support the proposed license amendments to implement RMTS in accordance with NEI 06-09.

Scope of the PRA for TS Change Evaluations

NEI 06-09 requires a quantitative treatment of internal fires and external events unless a licensee demonstrates that configuration risk is unaffected by these risk sources. As previously discussed, the STP PRA model is a full scope model which includes contributions from significant external events, and includes a fire PRA model.

The licensee did not provide an assessment of shutdown or transition risk. Because the RMTS program is not applicable in modes 5 and 6, shutdown risk is not relevant to the proposed change. The licensee has limited the mode applicability of the RMTS program to modes 1 and 2 for which their existing PRA models are considered applicable. RMTS cannot therefore be applied in modes 3 and 4. Therefore, requirements for shutdown or transition risk are not applicable to the amendments request.

Therefore, the staff finds that the licensee has satisfied the intent of RG 1.177 (Section 2.3.2), RG 1.174 (Section 2.2.3), and SRP Section 19.1, and that the scope of the PRA model is appropriate for this application.
PRA Modeling

To evaluate a RICT for a given TS LCO action requirement, the specific systems or components involved should be modeled in the PRA. For each TS LCO to which the RMTS are proposed to apply, the licensee identified that (1) the system is included in the STP PRA models, (2) the success criteria used in the PRA models are consistent with the STP licensing basis; and (3) the CRMP provides an appropriate user-selected option to select the system as out of service in order to calculate a RICT. In addition, the licensee identified the RICT for varying numbers of safety trains unavailable for each TS LCO within the scope of the RMTS. The staff reviewed the licensee's information and concluded that the scope of SSCs to which the RMTS are applied are appropriately included in the PRA models and in the CRMP, and that the plant staff are able to promptly determine the applicable RICT for a given plant configuration. Further, the staff notes that no single out of service SSC results in a RICT which is more restrictive than the current front-stop CTs. This confirms the suitability of the existing frontstop CTs as the dividing point in time between the existing TS requirements and the RMTS implementation.

The PRA model should also be able to treat the alignments of components during periods when testing and maintenance are being carried out. The licensee identified that actual configurations are assessed in the CRMP by the software program through the use of event tree macros, and that all affected initiating events and top events are defined by the status of these macros. The staff reviewed examples of these alignment macros during its June 2006 visit to the STP site.

Issues related to the level of detail of the PRA model, common cause modeling, screening criteria and truncation limits have been addressed by the conformance of the licensee's PRA model to RG 1.200 Rev. 1 and capability category II of ASME-RA-Sb-2005.
Therefore, the staff finds that the licensee has satisfied the intent of RG 1.177 (Section 2.3.3), RG 1.174 (Section 2.2.3), and SRP Section 19.1, and that the PRA modeling is appropriate for this application.

Assumptions

Using PRAs to evaluate TS changes requires consideration of a number of assumptions made within the PRA that can have a significant influence on the ultimate acceptability of the proposed changes. With regards to changes to CTs, the following assumptions were evaluated:

1. Risk associated with plant shutdown not considered - STP does not consider the avoided risk of plant shutdown in the calculation of RICTs. This is conservative with regards to the plant risk calculation for remaining at power.

2. Use of mean outage times, zero-maintenance base case model, and changes in maintenance practices under the extended CT regime for calculation of change in average CDF and LERF - consistent with NEI 06-09, STP uses the zero-maintenance base case model when assessing configuration risk to establish RICTs. For calculation of the change in average CDF and LERF due to RMTS implementation, the actual risk increments associated with each extension of the existing front-stop CTs is calculated based on the configuration existing during the extensions, and programmatically compared to the RG 1.174 limits. This is consistent with NEI 06-09 guidance, which the staff has endorsed.

3. Corrective maintenance outage frequency and component failure rate remain unchanged for evaluation of change in average CDF and LERF - as noted in item 2, the actual instances of component outages and extensions of CTs are used to calculate the change in average CDF and LERF due to RMTS implementation, consistent with NEI 06-09 guidance.

4. Increased frequency of on-line preventive maintenance for evaluation of change in average CDF and LERF - STP has not identified any planned changes to their existing maintenance practices planned due to implementation of RMTS. NEI 06-09 requires an assessment of the change in risk due to the actual use of extended Cts.

5. Increased probability of simultaneous outages when multiple CTs are extended - STP is proposing multiple TS LCO actions within the scope of their RMTS program. As noted in RG 1.177, the impact of overlap of outages on average risk is small, but the conditional (i.e., configuration-specific) risk impact can be large. The RICT calculations are based on the actual configuration-specific risk, and are updated when the configuration changes. Therefore, such risk impacts are directly addressed and accounted for in any RICT. For the change in average CDF and LERF due to RMTS implementation, simultaneous outages are again directly accounted since the actual configuration risk is assessed.

Therefore, the staff finds that the licensee has satisfied the intent of RG 1.177 (Section 2.3.4), and that the assumptions for risk evaluation of extended CTs are appropriate for this application.

Sensitivity and Uncertainty Analyses Relating to Assumptions in TS Change Evaluations
Risk-informed analyses of TS changes can be affected by uncertainties regarding the assumptions made during the PRA model's development and application. The risk resulting from TS CT changes is relatively insensitive to uncertainties because the uncertainties tend to similarly affect both the base case and the changed case. NEI 06-09 requires licensees to consider PRA modeling uncertainties and their

potential impact on the RMTS program, and as necessary to identify applicable RMAs to limit the impact of these uncertainties.
RG 1.200 Rev. 1 defines sources of uncertainty and assumptions as follows:

> Key Source of uncertainty: a source of uncertainty is one that is related to an issue in which there is no consensus approach or model and where the choice of approach or model is known to have an impact on the risk profile (e.g., total CDF and total LERF, the set of initiating events and accident sequences that contribute most to CDF and LERF). Such an impact might occur, for example, by introducing a new functional accident sequence or a change in overall CDF or
>
> LERF estimates significant enough to affect insights gained from the PRA. A *key source of uncertainty* is a source of uncertainty that influences a decision being made using the PRA.
>
> An assumption is one that is made in response to a source of uncertainty. An assumption is made in response to a source of uncertainty in the knowledge that a different reasonable alternative assumption would produce different results; or an assumption that results in an approximation made for modeling convenience in the knowledge that a more detailed model would produce different results. For the base PRA, the term "different results" refers to a change in the risk profile (e.g., total CDF and total LERF, the set of initiating events and accident sequences that contribute most to CDF and to LERF) and the associated changes in insights derived from the changes in the risk profile. A "reasonable alternative" assumption is one that has broad acceptance within the technical community and for which the technical basis for consideration is at least as sound as that of the assumption being challenged.

STP performed an evaluation of their PRA model to identify the key assumptions and sources of uncertainty for this application consistent with the above definitions, using sensitivity and importance analyses to place bounds on uncertain processes, to identify alternate modeling strategies, and to provide information to users of the PRA. STP reviewed the development of the initiating events, success criteria of the frontline and support systems, including loss of offsite power and reactor coolant pump seal modeling, human reliability analyses, and the level 2 analyses.

Two sources of model uncertainty for this application were identified: 1) assumptions and modeling issues associated with the support system initiating event for loss of Emergency Auxiliary Building (EAB) heating, ventilation, and air conditioning (HVAC), and 2) the assumptions regarding the frequency and assumed consequences of external initiating events. The assumptions involve conservative modeling of the effects and consequences of these initiating events. The licensee performed sensitivity analyses using alternative (less conservative) assumptions, and found that the CDF and LERF were reduced as expected. Further, the licensee reviewed changes in component importance to determine if these sources of uncertainty masked the importance of other components for the mitigation of other events. The licensee concluded that the conservative assumptions did not have any significant impact on the results, and would result in conservatively short RICTs. The staff notes that the impact of this conservative approach to modeling initiating events impacts is lessened because of the unique three train safety system design at STP. Many of the calculated RICTs are well in excess of the 30 days provided by the backstop, and thus the impact of modeling uncertainties for RMTS program implementation at STP is not as significant as it might be at a two train plant.

The staff review indicates the licensee performed a reasonable and credible assessment to identify the potential sources of uncertainty, and the identification of the key assumptions and sources of uncertainty was appropriate. The licensee's evaluation of the potential impact of these sources of uncertainty on the RMTS program is acceptable.

Therefore, the staff finds that the licensee has satisfied the intent of RG 1.177 (Section 2.3.5), RG 1.174 (Section 2.2.2), and that the treatment of model uncertainties for risk evaluation of extended CTs are appropriate for this application, and consistent with the guidance identified in NEI 06-09.

PRA Results and Insights

The proposed change implements a process to determine TS CTs rather than specific changes to individual TS CTs. NEI 06-09 requires periodic assessment of the risk incurred due to operation beyond the frontstop CTs due to implementation of an RMTS program, and comparison to the guidance of RG 1.174 for small increases in risk.

As with other unique risk-informed applications, supplemental risk acceptance guidelines which complement the RG 1.174 guidance are appropriate. NEI 06-09, endorsed by the staff, requires that configuration risk be assessed to determine the RICT, and establishes the criteria for ICDP and ILERP on which to base the RICT. An ICDP of 10-5 and an ILERP of 10-6 are used as the risk basis for calculating individual RICTs. These limits are consistent with NUMARC 93-01 guidance for managing the risk of on-line maintenance activities. This guidance was endorsed by the staff in RG 1.182 for compliance with the maintenance rule, 10 CFR 50.65 (a) (4). The use of these limits in NEI 06-09 aligns the TS CTs with the risk management guidance used to support plant programs for the maintenance rule, and the staff accepted these supplemental risk acceptance guidelines for RMTS programs in its approval of NEI 06-09.

The licensee has committed to NEI 06-09 Rev. 0 in the Administrative Controls of TS, and therefore calculates the RICT consistently with its criteria, and assesses the RMTS program to assure any risk increases are small per the guidance of RG 1.174.

Therefore, the staff finds that the licensee has satisfied the intent of RG 1.177 (Sections 2.4), RG 1.174 (Section 2.2.4 and 2.2.5), and SRP Chapter 19.

Administrative Controls

Because NEI 06-09 involves the real-time application of PRA results and insights by the licensee, the staff reviewed the licensee programs, procedures, and training of personnel as they relate to implementation of the RMTS program. The staff found that the licensee has established appropriate programmatic and procedural controls for its RMTS program, consistent with the guidance of NEI 06-09. Training of plant personnel has been provided throughout all levels of the organization, commensurate with each position's responsibilities within the RMTS program. The staff notes that the licensed operators in the control room have responsibility for assuring compliance with the TS, and that the RMTS program training provided assures their understanding of risk concepts, and provides them with the necessary skills to determine the appropriate RICT when operating under an extended CT within the RMTS. Therefore, the staff finds that the licensee has appropriate administrative controls to assure proper implementation of the RMTS program.

3.4.2.2 Tier 2 - Avoidance of Risk-Significant Plant Configurations

The second tier requires a licensee to provide reasonable assurance that risk-significant plant equipment outage configurations will not occur when specific plant equipment is taken out-of-service in accordance with the proposed TS change.

The licensee provided evaluations for each single out of service SSC for the scope of the TS LCOs subject to the RMTS program. These results demonstrated that there were no risk-significant configurations proposed where the existing frontstop CT did not provide significant margin to the RMTS program risk guidance. The staff notes that the unique 3-train safety system design of STP makes it unlikely to encounter high-risk configurations when single SSCs are unavailable. Upon entry into a RICT

for plant operation beyond the frontstop CT, risk assessments are required to consider the full scope of SSCs subject to the CRMP. Therefore, risk-significant configurations are unlikely at STP, and the RMTS program provides for prompt identification of any potential risk-significant configurations during a RICT.

The staff therefore finds the licensee's evaluation of potential risk significant configurations supports the implementation of the RMTS, and is acceptable to the staff.

3.4.2.3 Tier 3 - Risk-Informed Configuration Risk Management

The third tier requires a licensee to develop a program that ensures that the risk impact of out-of-service equipment is appropriately evaluated prior to performing any maintenance activity.

NEI 06-09 directly addresses this consideration by requiring assessment of the RICT to be based on the specific plant configuration for all SSCs within the scope of the CRMP, including both safety-related and non safety-related systems. If a risk-significant plant configuration exists, based on the expectation of exceeding a threshold of one-tenth of the risk on which the RICT is based, then compensatory measures and RMAs are required to be implemented. Thus, the RMTS program provides a methodology to assess and address risk-significant configurations. Further, reassessment of any plant configuration changes is also required to be completed in a timely manner, based on the more restrictive limit of any applicable TS action requirement or a maximum of 12 hours after the configuration change occurs.

Based on the licensee's conformance to NEI 06-09, and consistent with the requirements of the guidelines of RG 1.177, the staff finds the licensee's Tier 3 program is acceptable and supports the proposed implementation of RMTS.

3.5 Comparison With Regulatory Guidance

The licensee's proposed changes for implementation of RMTS are consistent with the staff-approved guidance of NEI 06-09, which was found to be consistent with the guidance of RG 1.174 and 1.177. and the guidance outlined in SRP Chapter 19, and Chapter 16.1.

3.6 Staff Findings and Conditions

The staff finds that the licensee's proposed implementation of RMTS for the identified scope of TS LCO action requirements is consistent with the guidance of the staff-approved NEI 06-09 Rev. 0. The licensee's methodology for assessing the risk impact of extended CTs, including the individual CT extension impacts in terms of ICDP and ILERP, and the overall program impact in terms of CDF and LERF, is accomplished using a full scope PRA model of sufficient technical adequacy as described in NEI 06-09 and based on consistency with the guidance of RG 1.200 Rev. 1. The assessment of configuration-specific risk to support the extension of CTs, and the RMTS program requirement to reassess configuration changes in a timely manner, and to implement compensatory measures and RMAs at the appropriate risk thresholds, are acceptable. The licensee's proposed implementation of RMTS is consistent with the tier 1, tier 2 and tier 3 requirements of RG 1.177. The licensee has not proposed to use any conservative or bounding analyses in lieu of quantitative PRA models. The implementation of the RMTS program is therefore required to use the full-scope plant-specific PRA models, maintained to reasonably reflect the as-built, as-operated plant, and to conform to the guidance of RG 1.200 Rev. 1. In addition, the staff finds that defense-in-depth and safety margins are adequately maintained, that compliance with current regulations and regulatory guidance are maintained, and that adequate procedural and performance monitoring programs are in place to safely implement this initiative.

3.7 Conclusions of Technical Evaluations

The potential risk impacts for STP implementation of the RMTS program are determined consistent with the staff-approved NEI 06-09 Rev. 0 methodology, and are reasonably expected to be small and consistent with the guidance of RG 1.174 and RG 1.177. The licensee's CRMP is consistent with the NEI 06-09 requirements with regards to its scope and technical adequacy, and therefore satisfy RG 1.177 CRMP guidelines. The application of the CRMP for the RMTS program will assure timely identification of any risk-significant configurations, and prompt implementation of appropriate compensatory measures and RMAs, satisfying tier 2 and tier 3 requirements of RG 1.177. The staff therefore concludes that the proposed changes satisfy the key principles of risk-informed decisionmaking identified in RG 1.174 and RG 1.177, and therefore the requested adoption of the broad scope risk-informed technical specification license amendments request by STP is acceptable.

4.0 REGULATORY COMMITMENT

There are no identified regulatory commitments associated with the proposed change.

5.0 EMERGENT/EXIGENT PROVISIONS

The amendments request was not processed using emergency or exigent provisions of 10 CFR 50.91, and a hearing has not been requested for the amendments. Therefore, this section is not pertinent to the NRC's findings and conclusions regarding the amendments.

6.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The Final No Significant Hazards Consideration Determination will be incorporated in the final issuance of amendments.

7.0 STATE CONSULTATION

The State of Texas will be consulted prior to issuance of the amendments.

8.0 ENVIRONMENTAL CONSIDERATION

The environmental consideration will be incorporated in the final 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.

10.0 REFERENCES

1. NEI 06-09 Revision 0, "Risk-Informed technical Specifications Initiative 4b, Risk-Managed Technical Specifications (RMTS) Guidelines, Industry Guidance Document," November 2006 (ADAMS Accession number ML063390639).

2. Letter from T. J. Jordan to U. S. Nuclear Regulatory Commission, "South Texas Project, Units 1 and 2, Docket Nos. STN 50-498, STN 50-499, Broad-Scope Risk-Informed

Technical Specification Amendment Request," August 2, 2004 (ADAMS Accession number ML042190366).

3. Letter from T. J. Jordan to U. S. Nuclear Regulatory Commission, "South Texas Project, Units 1 and 2, Docket Nos. STN 50-498, STN 50-499, Technical Adequacy of the South Texas Project Probabilistic Risk Assessment," October 28, 2004 (ADAMS Accession number ML043070448).

4. Letter from M. A. McBurnett to U. S. Nuclear Regulatory Commission, "South Texas Project, Units 1 and 2, Docket Nos. STN 50-498, STN 50-499, Response to NRC Requests for Additional Information on STPNOC Proposed Risk-Informed Technical Specifications," February 10, 2006 (ADAMS Accession number ML060480439).

5. Letter from M. A. McBurnett to U. S. Nuclear Regulatory Commission, "South Texas Project, Units 1 and 2, Docket Nos. STN 50-498, STN 50-499, Response to NRC Requests for Additional Information on STPNOC Proposed Risk-Informed Technical Specifications," April 26, 2006 (ADAMS Accession number ML061280591).

6. Letter from D. W. Rencurrel to U. S. Nuclear Regulatory Commission, "South Texas Project, Units 1 and 2, Docket Nos. STN 50-498, STN 50-499, Revised Broad Scope Risk-Informed Technical Specification Amendment Request," June 6, 2006 (ADAMS Accession number ML061630315).

7. Letter from D. W. Rencurrel to U. S. Nuclear Regulatory Commission, "South Texas Project, Units 1 and 2, Docket Nos. STN 50-498, STN 50-499, Revised Broad Scope Risk-Informed Technical Specification Amendment Request," December 28, 2006 (ADAMS Accession number ML070040247).

8. Letter from C. T. Bowman to U. S. Nuclear Regulatory Commission, "South Texas Project, Units 1 and 2, Docket Nos. STN 50-498, STN 50-499, Response to NRC Requests for Additional Information on STPNOC Proposed Risk-Managed Technical Specifications (TAC Nos. MD 2341 & Md 2342)" February 28, 2007 (ADAMS Accession number ML070670369).

9 Letter from C. T. Bowman to U. S. Nuclear Regulatory Commission, "South Texas Project, Units 1 and 2, Docket Nos. STN 50-498, STN 50-499, Response to NRC Requests for Additional Information on STPNOC Proposed Risk-Managed Technical Specifications (TAC Nos. MD 2341 & Md 2342)" May 9, 2007 (ADAMS Accession number ML071350248).

10. Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," USNRC, August 1998.

11. Regulatory Guide 1.177, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications," USNRC, August 1998.

12. NUREG-0800, Standard Review Plan, Chapter 19, "Use of Probabilistic Risk Assessment in Plant-Specific, Risk-Informed Decisionmaking: General Guidance," Revision 1, November 2002.

13. NUREG-0800, Standard Review Plan, Section 19.1, "Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities," Revision 1, September 2006.

14. NUREG-0800, Standard Review Plan, Section 16.1, “Risk-Informed Decisionmaking: Technical Specifications,” Revision 0, August 1998.

15. Regulatory Guide 1.200, “An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities,” Revision 1, January 2007.

Principal Contributors: A. J. Howe
T. R. Tjader

Date: