

June 13, 2006

Mr. James J. Sheppard
President and Chief Executive Officer
STP Nuclear Operating Company
South Texas Project Electric
Generating Station
P. O. Box 289
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SUBJECT: SOUTH TEXAS PROJECT, UNITS 1 AND 2 - BROAD SCOPE RISK
INFORMED TECHNICAL SPECIFICATION AMENDMENT REQUEST, AUDIT
PLAN (TAC NOS. MC3923 AND MC3924)

Dear Mr. Sheppard:

On August 2, 2004, STP Nuclear Operating Company (STPNOC), operator for South Texas Project (STP), Units 1 and 2, submitted a "Broad-Scope Risk-Informed Technical Specification Amendment Request," proposing to utilize risk-informed completion times in its Technical Specifications (TS), known as Risk Management Technical Specifications (RMTS) Initiative 4b.

Significant progress has been made in reviewing the STPNOC's request. Successful conclusion of the review is dependent upon confirmation by the NRC staff that the PRA and associated configuration risk evaluation tool, RASCAL, for STP, Units 1 and 2, are adequate to support this initiative. Arrangements for the staff to visit STP, Units 1 and 2, and conduct a readiness audit are being made for the week of June 19, 2006.

In support of this visit, a copy of the related Generic Audit Plan is enclosed. Comments on the audit plan are welcome.

Sincerely,

/RA/

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

Enclosure: RMTS Initiative 4b Generic Audit Plan

cc w/encl: See next page

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February 2006

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RISK MANAGEMENT TECHNICAL SPECIFICATIONS
INITIATIVE 4B
RISK-INFORMED COMPLETION TIMES
GENERIC AUDIT PLAN

APPLICABILITY:

This audit plan applies to all holders of operating licenses who have applied for a license amendment in order to utilize the Risk Management Technical Specifications Initiative 4B, and supports the review of licensee's application for a license amendment for implementation of the Risk-Managed Technical Specifications (RMTS) Initiative 4B described in Electric Power Research Institute (EPRI) document EPRI 101XXXX, "Risk-Managed Technical Specifications (RMTS) Guidelines".

01 OBJECTIVES

01.01 To verify the adequacy of the licensee's probabilistic risk assessment (PRA) models and other analyses and processes used to support the RMTS program.

01.02 To verify the usability of the tools and processes supporting the RMTS program, based on their complexity, user interface, training and qualification of licensee personnel, and the capability to address anticipated RMTS configurations in a timely manner.

01.03 To verify risk insights and awareness are part of the plant safety culture.

02 DEFINITIONS

CRMP - Configuration Risk Management Program - the plant program designed to apply the approved PRA to support prudent risk management over the plant life cycle. This program is designed to support the planning and execution of plant maintenance, testing, and inspection activities, as well as other risk-impacting activities.

PRA - Probabilistic Risk Assessment - a quantitative assessment of the risk associated with plant operation and maintenance that is measured in terms of frequency of occurrence of risk metrics, such as core damage or a radioactive material release and its effects on the health of the public (also referred to as a probabilistic safety assessment, PSA).

RICT - Risk-informed Completion Time - a TS completion time for an inoperable system, subsystem, or component (SSC) calculated based on maintaining plant operation within allowed risk thresholds or limits and applying a formally approved CRMP and associated PRA. The RICT is the time interval from discovery of a condition requiring entry into a TS

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actions for a SSC with the provision to utilize a RICT and which results in a plant configuration other than the zero-maintenance state until the 10^{-5} integrated core damage probability or 10^{-6} integrated large early release probability threshold is reached, or 30 days, whichever is shorter.

RMAT - Risk Management Action Time - the time interval from discovery of a condition requiring entry into a TS action for a SSC with the provision to utilize a RICT and which results in a plant configuration other than the zero-maintenance state until the 10^{-6} integrated core damage probability or 10^{-7} integrated large early release probability threshold is reached, whichever is the shorter duration.

RMTS - Risk-Manged Technical Specifications - a plant-specific set of configuration-based TS, based on a formally approved CRMP and associated PRA, designed to supplement previous conventional TS.

03 AUDIT REQUIREMENTS

03.01 General Requirements

The RMTS Initiative 4B audit activities verify the following elements of the licensee's RMTS 4B program.

- a. A review of the scope and quality of the PRA models which support the CRMP calculations of the RICTs and RMATs will be conducted. Verification that the PRA models meet the requirements of Regulatory Guide 1.200 for a capability category II will be made based on the resolution of issues from 1) a peer review assessment conducted per the guidance of standards or other industry guidance (i.e., NEI-00-02) as endorsed by Regulatory Guide 1.200, and 2) a self assessment by the licensee. PRA models for which NRC-endorsed standards do not exist will be technically reviewed to assure their adequacy for calculating configuration-specific risk within an RMTS program. The consistency of scope between the RMTS program and PRA models will be verified.
- b. Sources of risk determined to be insignificant and excluded from the RMTS program will be reviewed to determine that the technical basis for exclusion is reasonable. Sources of risk which are not addressed by plant PRA models, but are addressed by conservative or bounding analyses and processes, will be identified, and the methods used by the RMTS program to account for these sources of risk will be assessed to assure the resulting RICTs and RMATs are accurate or conservatively calculated.
- c. A review of the licensee's CRMP risk assessment tools and processes will be conducted. The review will assure the consistency of the risk calculations used to support RICTs and RMATs with the underlying PRA models. The translation of the baseline PRA model (which calculates average annual risk) to a dynamic model

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(which calculates configuration-specific instantaneous risk) will be reviewed. An assessment of the usability of the tools and processes, based on their complexity, user interface, and their capability to address anticipated RMTS configurations in a timely manner will be made. CRMP tools and processes which involve a real-time solution of the PRA model will necessarily be subject to more intrusive evaluation than those tools and processes which use a pre-solved set of configurations. The incorporation of non-PRA methods, including the use of conservative or bounding evaluations or qualitative assessments, will be assessed to verify the accuracy of the RICT and RMAT calculations and the utility of combining such results with the PRA results. The methods used to assess and address the key sources of model uncertainty within the RMTS program will be reviewed.

- d. A review of the overall licensee risk management programs will be conducted to assess the extent to which risk insights and awareness are part of the plant safety culture. The review will include an assessment of the licensee's PRA technical capabilities, reliance on outside resources, and overall understanding and ownership of the PRA models, programs, and results.
- e. A review of the training and qualification of on shift plant personnel responsible for TS compliance and the implementation of the RMTS program will be conducted.

03.02 Specific Requirements

a. Scope and Quality of PRA Models

- 1. Peer Reviews and Self Assessments of PRA Models Against Standards. The auditor will review the results of the most recent peer reviews conducted for each relevant portion of the PRA models, and of the licensee's self assessment of their PRA models against the requirements of Regulatory Guide 1.200 for a capability category II PRA.

The adequacy of the qualifications of the personnel conducting these reviews, and the scope and depth of the reviews will be assessed. Specific portions of the reviews may be technically assessed to verify the reasonableness of the conclusions reached.

Significant issues and findings from these reviews (i.e., "A" or "B" level findings and observations from peer reviews) will be reviewed to verify the underlying issue is corrected or otherwise dispositioned satisfactorily, including an assessment of the extent of condition. Outstanding issues not yet resolved should be entered into the licensee's corrective action program, and an assessment documented that those issues do not adversely impact the calculation of RICTs and RMATs, or resolution of the items is planned to be completed prior to RMTS implementation.

Changes made to the PRA models subsequent to the completion of peer reviews

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or self assessments shall be reviewed to confirm that the scope of such changes does not require a focused scope peer review, or confirm that such reviews have been completed in accordance with requirements of RG 1.200.

2. Assessment of PRA Models Without Existing Standards. The auditor will review the scope and methods applied for PRA models for which NRC-endorsed standards do not exist, for example, fire PRA and other external events, including seismic. This review will be conducted by staff familiar with existing applicable PRA methods, and will ensure that the risk models employ assumptions, data, and analyses methods which are reasonable and consistent with accepted practices.
 3. Comparison of TS LCO Scope with PRA Scope. The auditor will review a comparison of the scope of the LCOs subject to the RMTS Initiative 4B and functions and criteria which are required for operability of those LCOs, against the scope of the PRA model functions and their success criteria. The review will validate that the PRA model is consistent with the TS functions, and is therefore able to assess the plant risk impact of an unavailable TS function, or that when there are differences in scope or criteria, that the plant RMTS program has addressed the differences.
 4. Uncertainty Analyses. The auditor will review the licensee's assessment of key modeling assumptions and sources of uncertainty to determine the impact on the RMTS program. The review should assure the reasonableness of any additional restrictions placed on the RMTS program to address these impacts.
 5. Low Power Modes. The auditor will review the licensee's assessment of the applicability of the at-power CDF and LERF PRA models to lower modes of operation (if RMTS is applicable to lower modes in the LAR).
- b. Non-PRA Analyses of Risk Contributors
1. The auditor will review the assessments made by the licensee to determine that sources of risk which are excluded from consideration in the RMTS program are reasonable based on their low risk contribution or a lack of sensitivity to configuration changes.
 2. The auditor will review the non-PRA methodologies employed by the licensee within the RMTS program to address sources of risk not within the scope of the plant PRA models. Such methodologies shall be verified to be based on conservative or bounding analyses, and shall be able to be integrated with the PRA results to produce reasonable or conservative RICTs and RMATs.
- c. Configuration Risk Management Program Tool
1. The auditor will review the CRMP tools and processes employed in the RMTS

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program to assess risk and calculate RICTs and RMTs.

Where the licensee employs tools and processes which use a pre-solved configuration risk, the review will verify that the scope of the pre-solved configurations is reasonably consistent with anticipated RMTS configurations, that the identification of each configuration can be easily made, and on a sample basis that the risk matches the output of the PRA model. The quality controls applied to the calculation of the risk of the pre-solved configurations, including model inputs, truncation levels, and reviews of results, shall be reviewed and verified acceptable.

Where the licensee employs tools and processes which involve a real time solution of the underlying PRA models, a more rigorous verification is required to assure that anticipated failure modes can be easily identified and entered into the tool, that the solution time and truncation levels of the model are reasonable, and on a sample basis that the results are consistent with the underlying PRA models.

2. The auditor will review the process employed by the licensee to translate the baseline PRA model, which calculates an average annual risk, to a dynamic model for calculation of configuration-specific instantaneous risk, considering the following attributes:
 - a. Impact of out-of-service SSCs on initiating event frequencies
 - b. Truncation levels
 - c. Plant alignment, including elimination of average annual maintenance and equipment repair events, alignment of operating and standby components, applicability of quantification techniques and recovery rules, and results of benchmarking analyses
 - d. Human error dependencies
 - e. Mapping of SSCs to basic events
 - f. Consideration of time-dependent or cycle-dependent parameters
 - g. New sources of uncertainty introduced by the CRMP methods

3. The auditor will review the procedures which govern the use of the CRMP tools and processes to assure the use of qualified personnel, review of results, and proper documentation of the results within the RMTS program. The auditor will also assess:
 - a. the utility of the procedures, processes and tools for ease of use,
 - b. timeliness of the calculations and evaluations,
 - c. consistency with the industry guidance document EPRI 101XXXX as regards the risk metrics assessed and thresholds, timing of calculations, implementation of RMAs, assessing functionality of SSCs, and restrictions on configurations representing a loss of function,
 - d. documentation requirements, and, if applicable,
 - e. the complexity of addressing elements which are not within the scope of the PRA models.

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d. Assessment of Overall Plant Risk Culture

1. The auditor will assess the licensee's overall risk management programs to determine how risk insights and methods are employed by plant staff and management in the conduct of plant operations, and the extent to which risk management is part of the plant's safety culture. The review will verify the integration of the RMTS program requirements into plant procedures and programs, assess the risk awareness of plant staff including supervisors and managers, and determine how risk insights and techniques are integrated into overall plant operations. The review should include an assessment of the technical capabilities of the licensee's PRA staff, its reliance on outside resources for PRA skills, and its overall commitment to assuring its PRA staff and program provides a high quality and scope PRA model. The intent is to confirm that a plant implementing RMTS does not consider the PRA to be a "black box" calculation performed by the PRA staff exclusively, but rather that there is a general awareness and respect for the risk insights provided by the PRA models, and ownership by the plant staff of the PRA models and results.
2. The auditor will verify that the PRA models used in the RMTS program are maintained current with plant modifications, procedure changes, and other plant changes, based on requirements contained in plant programs for appropriate reviews of such changes and revision requirements of the PRA models and CRMP tools and processes.
3. The auditor will verify that the PRA models and documentation, and the CRMP tools and models are controlled in accordance with plant procedures to assure an appropriate level of quality is maintained.

e. Personnel Training and Qualification

1. The auditor will review the training programs and qualification requirements applicable for on shift personnel responsible for implementation of TS compliance and the RMTS program. The training should ensure that these personnel have a reasonable level of understanding of the CDF and LERF risk metrics and their bases as implemented in the RMTS program, and the scope of the plant PRA models used in the RMTS program including any key assumptions and model limitations.
2. The auditor will verify that personnel are proficient at implementing RMTS program requirements logistically, including the use of the CRMP tools, procedures, and documentation requirements. The capability of on shift personnel to determine RICTs and RMATs in a timely manner consistent with EPRI 101XXXX without interfering with the safe operation of the facility, including plant stabilization and restoration, will be verified.

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04 GUIDANCE

The RMTS Initiative 4B inspection procedure will be implemented, prior to approval of an application for license amendment, to verify that an applicant, requesting a license amendment to implement RMTS Initiative 4B, meets the requirements of the NRC-endorsed guidance document, EPRI 101XXXX and is capable of implementing an RMTS program consistent with their LAR. RMTS Initiative 4B inspections will be conducted by NRC headquarters staff responsible for review of the LAR, and will include visits to the applicant's site supported as necessary by personnel from the regional office. The inspection may include additional unresolved items resulting from staff review of the LAR.

Auditors should familiarize themselves with the requirements and guidance relating to RMTS Initiative 4B contained in NRC-endorsed industry guidance document, as well as industry standards on PRA.

05 REFERENCES

EPRI 101XXXX Risk-Managed Technical Specifications (RMTS) Guidelines.

American National Standard ASME RA-Sa-2003, Addenda to ASME-RA-S-2002 Standard for Probabilistic Risk Assessment for Nuclear Power Plant Applications.

Regulatory Guide 1.200

NEI 00-02, Probabilistic Risk Assessment Peer Review Process Guidance, 2000

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