

# Performance Technology

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March 7, 2000

50-498/499

Mr. Tim Reed  
Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
11555 Rockville Pike  
Rockville, MD 20852-2738

Dear Mr. Reed

As I discussed in the meeting of the ACRS on March 1, 2000, I believe the NRC letter dated January 18, 2000, to South Texas Project responding to the South Texas Project request for exemptions from special treatment requirements, contains a large element of just "adding on" special treatment requirements to equipment designated "safety significant" but not presently "safety-related," with no decrease in special treatment requirements for equipment that is presently "safety related" but not "safety significant." Enclosed is a copy of excerpts from 11 questions of the 48 questions that I believe are evidence of this attitude of "adding on" while preserving all the existing requirements.

From the perspective of an interested outside observer of the South Texas Project exemption process, I would certainly say that some of the NRC staff, via the questions, may be treating the exemption request of South Texas Project as an opportunity to preserve existing special treatment requirements with respect to design basis analysis, add on special treatment requirements to "safety significant" equipment that is not presently designated "safety-related," and control all this equipment to the existing "safety-related" design basis criteria. I hope I am wrong in my assessment. In my opinion, such a course of action will not allow South Texas Project personnel to focus on the "safety significant" equipment and provide special treatment requirements that are relevant to the reasons why the equipment is "safety significant."

I recognize that some of the staff of the Nuclear Regulatory Commission have a difficult time with respect to the South Texas Project exemption request because the request is a major break from the traditional design basis accident analysis. The main basis for the South Texas Project exemption request is the work done in support of the South Texas Project Probabilistic Risk Assessment (PRA). Such work is fairly new to some of the NRC staff. Acceptance of the PRA analysis is difficult for some NRC personnel who are not familiar with PRA analysis. In my professional career, I have performed both traditional design basis accident analysis and PRA analysis. As you know, I firmly believe that the use of Probabilistic Risk Assessment will result in more effective and

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"When you measure performance realistically, it improves."

efficient regulations. I believe the time has come to make use of the PRAs to make better decisions in the regulatory arena. The South Texas Project exemption request is a clear case of the increase in effectiveness and efficiency that can be achieved through the appropriate use of PRA.

If you have any questions about my views or the documentation attached, please do not hesitate to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Bob Christie". The signature is written in black ink and is positioned above the printed name.

Bob Christie

cc: Dr. Dana Powers, Chairman, ACRS  
Rick Grantom, South Texas Project  
Glen Schinzel, South Texas Project  
Wayne Harrison, South Texas Project

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Questions applying to desire of NRC to preserve the design basis and "add on" requirements to the non-safety-related equipment and control the change process for "safety-related" equipment.

- #2. "...provide a technical basis for why this piping will remain functional under all design conditions ..."
- #5 "...Please identify those areas where risk-significant attributes are not addressed by current special treatment requirements. In addition, describe what additional controls will be implemented for High Safety Significant and Medium Safety Significant SSCs to ensure risk significant attributes are not changed inappropriately."
- #8 "Important aspects regarding special treatment provisions may exist in various licensee commitments. Before the staff can entertain an approval of the proposed exemption, the staff needs to understand how the exemptions will affect those commitments, and what process will be used by the licensee to control changes to commitments. Please explain the process to control changes to any commitments involving special treatment activities, that could result from implementing the proposed exemptions. This includes changes to commitments that have been implemented in response to Generic Letters, Bulletins, Inspection Reports, commitments made to support licensing actions, etc."
- #9 The licensee's July 13, 1999, exemption request did not adequately describe the process STPNOC will use to categorize and make subsequent changes to special treatment requirements for safety-related Low Safety Significant and Non Risk Significant equipment. As outlined in Regulatory Guide 1.174, the staff needs to have a clear description of the overall process. The staff additionally needs to establish an appropriate level of regulatory change control over that process before it can accept the proposed exemptions..."
- #13 With respect to the proposed Appendix B exemptions:
- a.) Provide an amplified description of the proposed commercial quality practices that will be used by the licensee (and by the licensee's vendors) to serve as an alternative to each of the 15 Appendix B criteria for which an exemption is requested.
  - b.) Provide an expanded discussion about how these commercial quality practices will provide reasonable assurance that safety-related Low Safety Significant and Non Risk Significant equipment will reliably perform their design functions.
  - c.) Appendix B, Criterion IV specifies that measures shall be established to assure that applicable design requirements are suitably included in procurement

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document. Licensees rely on purchase orders to convey design requirements to vendors so that replacement parts will continue to reliably function under design conditions. Please justify why a complete exemption from Criterion IV is appropriate, given the importance of procurement documents in ensuring conformance of procured equipment with applicable design requirements. Describe in detail what measures will be imposed to ensure that design requirements are met.

- #38 b.) "If it is your proposal to remove safety-related Motor Operated Valves and Air Operated Valves from the scope of the current program, please explain how it will be adequately demonstrated that the valves will continue to be capable of performing their safety-related functions."
- #39 a.) Identify the process that will be used to select codes, standards, and plant procedures that describe "normal commercial and industrial practices" that will be used to procure, install, inspect, test, and maintain plant equipment that is removed from the scope of the spatial treatment controls. Please describe how the codes and standards will be evaluated to consider their use in lieu of the current special treatment requirements. Please provide some representative examples of the codes and standards that will (be) utilized for the Low Safety Significant and Non Risk Significant equipment.
- b.) Explain how these standards and procedures will provide adequate assurance that these components will remain functional under design-basis conditions (following a seismic or other external event and under design-basis environmental conditions). For example, the licensee could provide specific examples that demonstrate (or an analysis of data which supports the assertion) that certain commercial-grade components will remain functional under design-basis accident-like conditions.
- c.) Similarly, for non-safety related SSCs that have been categorized as High Safety Significant or Medium Safety Significant, how will the licensee identify the conditions under which these components must function and how will the licensee identify the practices that need to be applied to these components in order to ensure their functionality.
- d.) How will the licensee's process address the EQ qualified lifetime for safety-related components categorized Low Safety Significant when those lifetimes are reached?"
- #41 "The July 13, 1999, submittal describes (Attachment 3, pages 5 and 6) that the licensee's procurement requirements would specify environmental parameters that Low Safety Significant and Non Risk Significant equipment must withstand. However, during the site visit on October 5, 1999, the licensee indicated that purchase order requirements pertaining to environmental qualification aspects

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would not be imposed for Low Safety Significant and Non Risk Significant equipment. Please clarify the approach that the licensee intends to implement to provide confidence that Low Safety Significant and Non Risk Significant components will remain functional if they are exposed to a harsh environment."

- #42 During the staff's October 5 and 6, 1999, site visit to South Texas Project, the licensee stated that it sees no difference between the reliability of safety-related and commercial-grade components. Provide your analysis of the data to support the assumed failure probability and reliability of safety-related components categorized as Low Safety Significant, which have been presumably designed, procured, tested and inspected to commercial standards, for operation of these components under normal operating conditions and under all design-basis conditions."
- #43 "Section 4.1.2 of the licensee's application states that '...South Texas Project will utilize purchase requirements or other evaluations to ensure the availability of replacement components to function under design conditions, without performing qualification tests.' Also, during the site visit on October 5 and 6, 1999, the licensee indicated that non-safety-related components that are categorized as either Medium Safety Significant or High Safety Significant will have special treatment applied as necessary to ensure that their critical attributes are satisfied. These critical attributes, as documented in the licensee's system categorization notebooks, were derived from the PRA failure modes but they were not very specific. For example, a system categorization notebook would only indicate that a particular valve should open to provide flow to a particular heat exchanger. The critical attribute did not specify the design-basis conditions under which the flow needs to be provided.
- How will the licensee's process identify and ensure that the each component's specific critical attributes will be satisfied (i.e., for safety-related components categorized as Low Safety Significant and Non Risk Significant and non-safety-related components categorized as Medium Safety Significant or High Safety Significant) so there will be adequate assurance that these components will be functional under design-basis conditions?"
- #45 "Please describe how the licensee's overall process considers spatial relationships such as seismic interactions or fires. Describe the evaluations and processes that will provide reasonable assurance that Low Safety Significant and/or Non Risk Significant equipment will maintain functionality and conformance with design provisions which should preclude adverse interactions (such as spraying, flooding, seismic interaction, electrical separation, and electrical isolation) with High Safety Significant and/or Medium Safety Significant equipment. The staff expects that South Texas Project will maintain robust provisions that will preclude these adverse interactions."