

May 2, 2001

LICENSEE: STP Nuclear Operating Company

FACILITY: South Texas Project, Units 1 and 2

SUBJECT: SUMMARY OF APRIL 4 - 5, 2001, MEETING WITH STP NUCLEAR OPERATING COMPANY TO DISCUSS DRAFT SAFETY EVALUATION OPEN ITEMS ON SOUTH TEXAS PROJECT, UNITS 1 AND 2, MULTIPART EXEMPTION FROM THE SPECIAL TREATMENT REQUIREMENTS

On April 4 - 5, 2001, the U.S. Nuclear Regulatory Commission (NRC) and STP Nuclear Operating Company (STPNOC) met in Rockville, Maryland, to discuss open items identified in the draft safety evaluation issued on November 15, 2000, related to STPNOC's request for exemption from special treatment requirements of 10 CFR Parts 21, 50, and 100. The purpose of the meeting was to facilitate communication between the NRC staff and the licensee to allow the effective resolution of the open (OI) and confirmatory items in the draft safety evaluation.

Enclosure 1 provides a list of attendees at the 2-day meeting. Enclosure 2 provides the meeting agenda. Enclosure 3 provides a copy of the licensee's revised response to Open Item 3.4 on component categorization with respect to late containment failure. Enclosure 4 provides a copy of the licensee's revised response to Open Item 3.5 on the categorization of the passive pressure boundary function of structure, system, and components (SSCs). Enclosure 5 provides a copy of the NRC staff's comments on the STPNOC proposed Final Safety Analysis Report (FSAR) Section 13.7 that describes the processes upon which the exemptions are being requested by STPNOC. Enclosure 6 provides a copy of the proposed FSAR Section 13.7 with revisions and comments based on discussions between NRC and STPNOC. Enclosure 7 provides a copy of the proposed NRC staff's slides to be used during the April 6, 2001, briefing of the Advisory Committee on Reactor Safeguards (ACRS). An overview of the discussions conducted during the meeting is provided below:

#### **OI 3.4 - Addressing Containment Integrity in Categorization:**

STPNOC and NRC staff discussed the revised response provided by the licensee in Enclosure 3. The NRC staff clarified the information needed to address this issue. STPNOC agreed to provide the NRC staff with a summary of the results of a sensitivity study on the impact of decreased availability of low safety significant (LSS) SSCs modeled in the STP probabilistic risk assessment (PRA) important to protecting long-term containment integrity (particularly containment heat removal related SSCs). STPNOC indicated that completion of this sensitivity study should occur quickly and requested a followup teleconference with the NRC staff during the week of April 9, 2001.

### **OI 3.5 - Categorization of Passive Pressure Boundary Function:**

STPNOC and the NRC staff discussed the revised response provided by the licensee in Enclosure 4. The NRC staff and STPNOC agree on the application of a categorization process for the passive pressure boundary function of American Society of Mechanical Engineers (ASME) *Boiler and Pressure Vessel Code* (Code) Class 1 and 2 components. The categorization process for the passive pressure boundary function of ASME Code Class 1 and 2 components is equivalent to that used under the Electric Power Research Institute (EPRI) risk-informed inservice inspection (RI-ISI) methodology approved for use at STP. For ASME Code Class 3 components, the revised STPNOC response focused on the use of the EPRI RI-ISI categorization methodology as it relates to ISI. The NRC staff indicated that the application of the EPRI RI-ISI categorization methodology should be considered from a broader perspective to include aspects of repair and replacement. The application of the RI-ISI methodology to repair and replacement and the ISI is consistent with the scope of the exemption that STPNOC requested from the requirements of 10 CFR 50.55a(g) that impose the ISI and repair and replacement requirements of Section XI of the ASME Code. The licensee agreed to revise the response considering repair and replacement aspects of the exemption requested in the application of the RI-ISI categorization methodology. STPNOC indicated that it should be able to provide a revised response within about 2 weeks.

### **NRC Staff Comments on STPNOC Proposed FSAR**

In Enclosure 5, the NRC staff provided its comments to the STPNOC proposed FSAR Section 13.7, in which STPNOC describes the categorization, treatment, and oversight processes upon which the NRC staff will base its findings on the requested exemptions. NRC staff proposed changes to Section 13.7 of the proposed STP FSAR are highlighted and italicized in Enclosure 5. The NRC staff indicated that most of the comments to the proposed STP FSAR Section 13.7 were made to reflect the positions stated by STPNOC during various meetings or in its submittals. Further, the NRC staff indicated that these changes contain the level of detail necessary in the FSAR as the licensing basis for any exemptions granted for the NRC staff to finalize its review of the requested exemptions and complete its safety evaluation. The changes proposed by the NRC staff were reviewed and approved by NRC management.

Under Section 13.7.2, "Component Categorization Process," STPNOC indicated that it would (1) provide additional discussions on the sensitivity study that increased the failure rates of LSS SSCs modeled in the PRA as it relates to the guidelines in Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis;" (2) provide additional discussions on the use of the EPRI RI-ISI methodology for passive pressure boundary function categorization of ASME components; and (3) provide additional insights from the containment integrity sensitivity study as it relates to defense in depth and safety margins. In addition to the information in the proposed FSAR on the sensitivity study, STPNOC indicated that it would provide information to the NRC staff on how common cause failure (CCF) was factored into the sensitivity study (to the extent that CCF was addressed for intersystem and intrasystem consequences). This information would not be incorporated into the proposed FSAR section, but would be provided to the NRC staff for improved

understanding of the extent and limitations of the sensitivity study. STPNOC also proposed to rewrite the section describing the functions of the integrated decisionmaking panel to be more generic to allow organizational changes without requiring a change to the STP FSAR while retaining the functions performed by the panel. The NRC staff agreed that it would be reasonable to make such a change provided the independent review performed by the Expert Panel was retained in the description of the integrated decisionmaking panel process. Other changes to Section 13.7.2 of the proposed FSAR are highlighted in Enclosure 6.

During the meeting, STPNOC asked the NRC staff about removing some of the details on the categorization process from the proposed FSAR section. Specifically, STPNOC sought to remove details about the deterministic methodology related to the five critical questions, weighting of each critical question, question numerical answers, definitions of frequency and impact, and category score ranges. The NRC staff indicated that it considers these details necessary in the FSAR to support its finding that the categorization process is sufficient as the cornerstone for granting any of the requested exemptions. The NRC staff equated this level of detail to the level of detail in the FSAR on the PRA risk categorization methodology that includes the threshold values for risk-importance measures used to categorize SSCs. Therefore, the NRC staff indicated that removing these details would not be acceptable in that it would undermine the licensing basis for granting any of the requested exemptions.

STPNOC indicated during the meeting that currently its categorization process is used at the component level. However, STPNOC indicated that the categorization process could be used to categorize as LSS or nonrisk significant (NRS) pieces of high safety significant (HSS) and medium safety significant (MSS) safety-related components that do not directly contribute to performing the HSS/MSS function of the component. This would allow these pieces to be exempted from the special treatment requirements to the extent granted by the NRC. The NRC staff agreed that the application of the categorization process should be sufficient to support categorizing pieces of HSS/MSS components as LSS or NRS.

Under Section 13.7.3, "Treatment for Component Categories," the NRC staff and STPNOC reached an agreement in principal on the wording of the subsections (13.7.3.1 and 13.7.3.2) that discuss treatment for safety-related and nonsafety-related HSS and MSS SSCs. Under Section 13.7.3.3, the NRC staff provided extensive comments on the elements of the STPNOC commercial and industrial practices for safety-related LSS and NRS SSCs. As a general comment, STPNOC indicated that the level of detail seemed to be inconsistent with the NRC's position of keeping the description in the STP FSAR at the programmatic elements of what the treatment processes would accomplish. For example, in the areas of procurement (13.7.3.3.2); maintenance (13.7.3.3.4); inspection, test, and surveillance (13.7.3.3.5); and management and oversight (13.7.3.3.7), STPNOC indicated that in some instances the NRC staff's comments were requesting details on how the licensee would be implementing these elements. Under Section 13.7.3, a number of areas require continued interaction between STPNOC and the NRC staff. Specifically, the NRC staff needs to finalize its position on the information required in the FSAR to address environmental design conditions. Further, the NRC staff and STPNOC have not agreed on the information in the FSAR that addresses all aspects of seismic design conditions and inspections, tests, and surveillances (specifically for ASME pumps and valves). Additional comments on the elements of the treatment processes are identified in Enclosure 6.

During the meeting, STPNOC clarified that Section 13.7.4, "Continuing Evaluations and Assessments," applied to only those SSCs that have been categorized. Further, STPNOC confirmed that Section 13.7.4 applies to all categorized SSCs regardless of their categorization.

To address Open Item 5.1, the NRC staff and STPNOC agreed in principal to a proposed change control process to be included in proposed STP FSAR Section 13.7.5.2. This change control process will be incorporated as a condition of each exemption granted under the licensee's exemption request.

Enclosure 6 provides an update to the proposed STP FSAR Section 13.7 based on the discussions between the NRC staff and STPNOC. An advanced copy of Enclosure 6 was provided to STPNOC to solicit feedback on factual errors or omissions based on STPNOC's observations during the meeting. No changes were made between the advanced copy of Enclosure 6 provided to STPNOC and the version enclosed with this meeting summary. Where the NRC staff and STPNOC agreed in principal on the NRC staff comments as highlighted in Enclosure 5, the changes were incorporated (without highlighting) into the proposed STP FSAR Section 13.7 in Enclosure 6. STPNOC feedback on NRC staff comments to the proposed STP FSAR Section 13.7 that the NRC staff agreed to in principal during the meeting were incorporated and highlighted with italicized text in Enclosure 6. Areas where the NRC staff and STPNOC did not reach agreement in principal, or where STPNOC had comments that were not resolved during the meeting, are also highlighted with italicized text in Enclosure 6. Both the NRC staff and STPNOC will discuss the proposed STP FSAR Section 13.7 presented in Enclosure 6 with their respective management to ensure the comments and changes are consistent with both STPNOC's and NRC's expectations and needs.

During the meeting there were detailed discussions on how STPNOC might implement the elements of the treatment processes described in Section 13.7.3.3 for LSS and NRS safety-related SSCs. The NRC staff reinforced its position that the finding in the area of treatment for LSS and NRS safety-related SSCs that the NRC staff needs to make in support of granting any of the requested exemptions is that the elements of the treatment processes, if effectively implemented, could support the licensee's determination that it has confidence that the LSS and NRS SSCs will be capable of performing their safety-related functions under design-basis conditions. To make this finding, the NRC staff does not require a detailed understanding of how the licensee will implement the elements of the treatment processes.

The NRC staff and STPNOC discussed information STPNOC provided to the NRC staff in various submittals and meetings on how it will implement these programs. As noted in the November 15, 2000, draft safety evaluation (SE), the NRC staff identified several methods by which the licensee proposed to implement the elements of these processes that the NRC staff did not believe would support effective implementation (see Confirmatory Item 4.1 of the draft SE). In response to these areas of inconsistency, STPNOC provided resolution in a January 18, 2001, submittal (see response to Confirmatory Item 4.1, ADAMS Accession No. ML010220367). STPNOC will implement the resolution of Confirmatory Item 4.1 through its corrective action program. At the time the NRC issued the draft SE, the NRC was considering a finding that would support the NRC staff concluding that it had confidence that LSS and NRS safety-related SSCs would be functional under design-basis

conditions. The current focus of the NRC's finding regarding treatment is whether the elements, when effectively implemented by STPNOC, can provide an acceptable approach to maintaining the design basis and functionality of safety-related LSS and NRS SSCs. Under this approach, the NRC staff no longer needs to know how the licensee will implement its treatment processes nor will it conclude that it has confidence that the LSS and NRS safety-related SSCs will be functional. Rather, the NRC staff will rely heavily on the engineering judgment of the licensee to effectively implement these processes. Review of the details regarding the implementation of the elements of the program to assure that design basis functionality of the SSCs will be maintained was not considered necessary given the conclusion of the NRC staff's review of the categorization process regarding the risk significance of the LSS and NRS SSCs at STP.

STPNOC indicated that because of the extensive discussions that have been held with the NRC staff on how it may implement the elements of the treatment processes, it was concerned that the effective implementation of the treatment processes for LSS and NRS safety-related SSCs could be challenged by NRC staff in the future based on the information being required in the FSAR. The NRC staff responded that under the existing reactor oversight process, issues associated with safety-related LSS or NRS SSCs would not likely exceed the threshold that would warrant heightened NRC oversight. Further, the most likely way that an issue with an LSS or NRS SSC would result in heightened NRC oversight is through a repetitive failure of the licensee's corrective action program to adequately address the issue. Also, the NRC staff indicated that the exemptions granted by the NRC and STP FSAR Section 13.7.3.3 would be the licensing bases documents that form the regulatory framework under which the NRC would be implementing its reactor oversight program at STP for safety-related LSS and NRS SSCs. Additional insights into the NRC staff's basis for granting the exemptions would be available in the SE issued in support of granting the exemptions. The NRC staff agreed with the licensee's request to brief the NRC Region IV inspection staff on the exemptions granted, the findings made in granting the exemptions, and the effect of granting these exemptions on the oversight of licensed activities at STP.

### **NRC Staff ACRS Presentation Discussion**

At the end of the meeting, the NRC staff and STPNOC discussed the information to be presented to ACRS on April 6, 2001. The purpose of these discussions was to facilitate the presentation of both NRC and STPNOC insights to ACRS to accurately reflect the current status of the NRC's review of the exemption request and STPNOC's perceptions, specifically as they relate to the open items identified in the draft SE on treatment. Enclosure 7 provides the handout provided by the NRC staff to facilitate the discussions. Significant changes that occurred to the ACRS briefing material were that (1) the bullet on slide 3 related to Open Item 18.1 on seismic requirements was moved from the category that could be closed based on agreement on FSAR details; and (2) the last sentence on slide 4 on the relation between the NRC staff's finding on treatment and its finding on categorization was clarified.

Substantial progress was made as a result of the meeting with STPNOC. The issues with change control for the processes upon which the NRC staff will rely to grant the exemptions was successfully closed. Based on the insights provided to STPNOC during the meeting the remaining categorization issues (Open Items 3.4 and 3.5) should be resolved shortly.

Agreement in principal was reached on the information to be included in the FSAR on the treatment of HSS and MSS SSCs. Also, the issue that the NRC staff had with changing commitments associated with LSS and NRS safety-related SSCs was resolved.

While substantial progress has been made, several issues continue to require NRC and STPNOC interactions. Specifically, in the areas of environmental and seismic design requirements; inspections, tests, and surveillances; and the level of detail in the STP FSAR on the treatment of safety-related LSS and NRS SSCs. Further, STPNOC continues to express concern about NRC oversight following the granting of the exemptions from the special treatment requirements. Because of the significance of these issues, the NRC staff suggested that STPNOC meet with the NRC's Risk Informed Licensing Panel (RILP - comprised of senior NRC managers), to discuss these concerns. STPNOC indicated that it would support such a meeting. STPNOC stated that the schedule for completion of the NRC's review of the exemption request appears to be challenged.

STPNOC and NRC staff will continue to discuss the detail to be included in the STP FSAR and the licensee's response to the remaining open items in support of the exemption request. The NRC staff will present to RILP the results of the STPNOC meeting and will discuss the proposed meeting between RILP and STPNOC. The NRC staff continues to place a high priority on its evaluation of the STPNOC exemption request and completion of the review according to the planned schedule.

*/RA/*

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Docket Nos. 50-498 & 50-499

Enclosures: 1. List of Attendees  
2. Meeting Agenda  
3. Open Item 3.4 Handout  
4. Open Item 3.5 Handout  
5. Staff Comments on FSAR Section 13.7  
6. Revised FSAR Section 13.7  
7. ACRS Briefing Handout

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**/RA/**

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LIST OF ATTENDEES  
APRIL 4 - 5, 2001, MEETING BETWEEN NRC AND STPNOC  
DRAFT SAFETY EVALUATION OPEN ITEMS

NAME	TITLE/POSITION	ORGANIZATION	4/4	4/5
Rich Barrett	Branch Chief	NRR/DSSA/SPSB	x	
Jose Calvo	Branch Chief	NRR/DE/EEIB		x
Gene Imbro	Branch Chief	NRR/DE/EMEB	x	x
Stuart Richards	Project Director	NRR/DLPM/PDIV		x
Goutam Bagchi	Senior Level Advisor	NRR/DE	x	x
Bob Gramm	Section Chief	NRR/DLPM/PDIV-1	x	x
Mark Rubin	Section Chief	NRR/DSSA/SPSB	x	
David Terao	Section Chief	NRR/DE/EMEB	x	x
John Fair	Sr. Mechanical Engineer	NRR/DE/EMEB	x	x
David Fischer	Sr. Mechanical Engineer	NRR/DE/EMEB	x	x
Eileen McKenna	Sr. Reactor Systems Engineer	NRR/DRIP/RGEB	x	x
John A. Nakoski	Sr. Project Manager	NRR/DLPM/PDIV-1	x	x
Bob Palla	Sr. Reactor Engineer	NRR/DSSA/SPSB	x	
Tim Reed	Sr. Reactor Systems Engineer	NRR/DRIP/RGEB	x	x
Thomas Scarbrough	Sr. Mechanical Engineer	NRR/DE/EMEB	x	x
Stephen Dinsmore	Risk & Reliability Engineer	NRR/DSSA/SPSB	x	x
Donald Harrison	Risk & Reliability Engineer	NRR/DSSA/SPSB	x	
Ken Heck	Operations Engineer	NRR/DIPM/IQMB	x	x
Samuel Lee	Reliability & Risk Analyst	NRR/DSSA/SPSB	x	x
Matthew A. Mitchell	Materials Engineer	NRR/DE/EMCB	x	x
Michael Snodderly	Reactor Systems Engineer	NRR/DSSA/SPSB	x	
Ron Young	Plant Systems Engineer	NRR/DSSA/SPLB		x
Ho Nieh	Reactor Assistant	OCM/RAM	x	
A. H. Gutterman	Legal Counsel to STPNOC	Morgan, Lewis, & Bockius	x	x
Scott Head	Licensing Manager	STPNOC	x	x
Glen Schinzel	Manager, GQA	STPNOC	x	x
A. C. Moldenhauer	PRA Engineer	STPNOC	x	x
Ralph Chackal	GQA Facilitator	STPNOC	x	x
Hans Renner	LIS Recorder	Scientech, Inc.	x	x

## AGENDA

WEDNESDAY, APRIL 4, 2001

### Room OWFN - 10B4

8:00am - 8:05am	Introduction and Opening Remarks
8:05am - 9:00am	Open Item 3.4, Containment Integrity
9:00am - 10:00am	Open Item 3.5, Passive Pressure Boundary Function
10:00am - 10:15am	Break
10:15am - 12:00pm	NRC Comments on STPNOC's Proposed FSAR Section
12:00pm - 1:00pm	Lunch
1:00pm - 3:00pm	Status of Remaining Treatment Open Items (4.2, 8.1, 11.1, 18.1) Considering NRC Comments on Proposed FSAR (Note: Open Items 10.1 and 10.2 will not be discussed - require licensee response)
3:00pm	Meeting Ends
3:00pm - 5:00pm	STPNOC uses room to consider NRC comments to Proposed FSAR

THURSDAY, APRIL 5, 2001

### Room TWFN - 8A1

8:00am - 8:05am	Opening Comments
8:05am - 10:30am	Recap Discussions from April 4, 2001 Feedback from STPNOC on NRC Comments to Proposed FSAR
10:30am - 10:45am	Break
10:45am - 11:30am	Open Item 5.1, Change Control
11:30am - 12:30pm	Lunch

### Room OWFN - 9B4

12:30pm - 4:00pm	Positions to be Presented to ACRS on Resolution of Treatment Open Items (Open Items 4.2, 7.1, 8.1, 10.1, 10.2, 11.1, 13.1, 18.1)
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## Draft Response

### Component Categorization with respect to Late Containment Failure

The STP PRA model describes containment response to a core damage event using four different containment response categories. One of the categories is Late Containment Failure, which makes up approximately 9% of all the containment responses to a core-damaging event. Late Containment Failure is defined as containment failure that occurs 4 hours after vessel breach and is dominated by station blackout scenarios. Approximately 77% of all Late Containment Failures are due to station blackout scenarios.

Most of the important components associated with mitigating Late Containment Failure are also those components that mitigate the station blackout itself. SSCs in the electrical distribution systems are particularly important in mitigating station blackout consequences as well as in recovery actions to restore electric power. Since station blackout scenarios are so important, other SSCs like containment spray and reactor containment fan coolers do not play an important role in mitigating Late Containment Failure. Failure to restore electric power from a station blackout event presumes there will be no SSCs (i.e., containment spray and reactor containment fan coolers will not be available) to mitigate the event, and thus results in late containment overpressurization. This assertion is supported by a component risk ranking analysis based solely on Late Containment Failure scenarios. The results of the analysis demonstrated that there was no change to the risk ranking of any component that has undergone the categorization process.

The following table provides a list of components whose categorization could have been further evaluated based on their contribution to late containment failure. However, there are several important items to note with respect to these components which would have resulted in their being initially properly categorized in the following table.

1. Neither of the systems shown below containing these components has gone through the categorization process. These systems are the 4.16kV AC Class 1E Power (PK) and the 480V AC Class 1E MCC and Distribution Panels (PL).
2. Non-symmetry in the ranking (i.e., Components in train A do not equal train B and/or train C) is due to asymmetries in electrical loads and modeling assumptions. All corresponding components in the other trains are already ranked "high" by the PRA. In each case of non-symmetry the lower ranked component is just below the cutoff threshold while the higher ranked component is just above the cutoff threshold.
3. If these components had gone through the categorization process each of the components below would have been ranked "high" for symmetry reasons. Note, all of the components in the table below are breakers in the class 1E power supply system.

UNIT 1 TAG/TPNS	System	SERVICE_DESC	Current	Late Containment Contribution		
				Rank	RAW	FV
A1PKSG0E1A11	PK	4160V SWITCHGEAR E1A CUB 11	M	H	7.49	1.36E-02
A1PKSG0E1A4	PK	4160V SWITCHGEAR E1A CUB 4	M	H	7.49	1.36E-02
A1PKSG0E1A7	PK	4160V SWITCHGEAR E1A CUB 7	M	H	7.49	1.36E-02
A1PLSG0E1A3A	PL	480V LC E1A CUB 3A	M	H	4.86	6.53E-03
B1PLSG0E1B2E	PL	480V LC E1B CUB 2E	M	H	4.37	1.36E-02
B1PLSG0E1B4F	PL	480V LC E1B CUB 4F	M	H	7.18	5.21E-03
C1PLSG0E1C4D	PL	480V LC E1C CUB 4D	M	H	8.89	6.67E-03

The above breakers are important for accident mitigation, not only for providing electrical power, but also for opening in response to a sequencer actuation. The PRA model assumes that if any necessary breakers do not open, then the function of supplying electrical power is lost. Recovery of this event is not credited in the PRA. Therefore, these breakers are important for accident sequences that involve station blackout scenarios.

The overall conclusion of this analysis is that ranking based on late containment failure would not provide any additional information or insight to the categorization process.

## Attachment 1

**Open Item 3.5:** STPNOC needs to provide sufficient risk-informed justification for application of the categorization process to passive functions (i.e., structural integrity, pressure boundary) of safety-related SSCs. For example, the staff has determined that the categorization process is not sufficiently robust to support the requested exemption from ASME Section XI Inservice Inspection requirements.

### Response:

STPNOC has two risk-informed categorization processes applicable to the pressure boundary and structural integrity functions of SSCs. The first categorization process is the process described in STPNOC's exemption request for plant SSCs. The second is a risk ranking process established in conjunction with the NRC-approved relief request for risk-informed inservice inspection (RI-ISI) for ASME Class 1 piping under NRC Regulatory Guide 1.178, "An Approach for Plant-Specific Risk-Informed Decisionmaking: Inservice Inspection of Piping,"

The RI-ISI risk ranking process is based upon the EPRI methodology for RI-ISI. STPNOC has recently submitted a similar relief request based on this EPRI methodology for risk informing the ISI program for Class 1 socket welded piping and Class 2 piping under Regulatory Guide 1.178. STPNOC currently has no plans to submit a relief request for RI-ISI for Class 3 components.

STPNOC has conservatively categorized the pressure boundary functions of systems under its exemption categorization process. As evidence of the robustness of the exemption categorization process as applied to pressure boundary, STPNOC notes that, based on the categorizations performed to date, the following systems or portions of these systems (as well as the applicable components) are categorized as MSS or HSS for functions related to pressure boundary.

- Chemical & Volume Control
- Air starting system for the Standby Diesel Generator
- Lube oil system for the Standby Diesel Generator
- Feedwater
- Main Steam
- Reactor Coolant
- Residual Heat Removal
- Safety Injection
- Steam Generator Blowdown

Based upon its RI-ISI risk ranking process for ASME Class 1 and 2 piping, STPNOC is proposing two different approaches with respect to its exemption request to exclude LSS and NRS components from the scope of the ISI examination requirements in 10CFR 50.55a(g), depending upon whether the component is Class 1 or 2 or whether it is Class 3.

### STPNOC's Proposed Exemption for ASME Class 1 and 2 Components and Supports

For the exemption request with respect to ISI for Class 1 and 2 components, STPNOC proposes to use the higher of the RI-ISI risk ranking or the categorization determined by the exemption process for the pressure boundary function. In cases where the RI-ISI ranking is Low and the GQA pressure boundary categorization is Low or NRS, the component would be subject to the exemption from the ISI examination requirements in 10CFR50.55a(g). In cases

where either is medium or higher, the component would not be subject to the exemption from the ISI examination requirements in 10CFR50.55a(g). Instead, the component would be subject to either the RI-ISI program, based upon its risk ranking under that program, and/or the ISI examinations under the STPNOC ISI program.

STPNOC notes that its RI-ISI risk ranking process only applies to piping. For purpose of the exemption from the ISI examination requirements in 10CFR50.55a(g) with respect to other components, STPNOC will assign those components a pressure boundary risk that is the same as the risk ranking for the associated section of piping as described above. This methodology is consistent with STPNOC and industry experience that the consequences of pressure boundary failure and the potential degradation mechanisms for components other than piping are the same or less severe than that of the associated piping.

The following matrix summarizes STP's proposal with respect to ISI for ASME Class 1 and 2 components:

		<b>GQA Pressure Boundary Categorization</b>	
		<b>HSS/MSS</b>	<b>LSS/NRS</b>
<b>RI-ISI Risk Rank</b>	High or Medium	The component is not subject to the exemption from ISI examination requirements in 10CFR50.55a(g). Piping is subject to RI-ISI, with a risk rank of high or medium, as applicable. Other components are subject to ISI in accordance with the STPNOC ISI program.	The component is not subject to the exemption from ISI examination requirements in 10CFR50.55a(g). Piping is subject to RI-ISI, with a risk rank of high or medium, as applicable. Other components are subject to ISI in accordance with the STPNOC ISI program.
	Low	The component is not subject to the exemption from ISI examination requirements in 10CFR50.55a(g). Piping is subject to RI-ISI, with a risk rank of low. Other components are subject to ISI in accordance with the STPNOC ISI program.	The component is subject to the exemption from ISI examination requirements in 10CFR50.55a(g) and is outside the scope of ISI.

Since NRC has already determined that the RI-ISI process is sufficiently robust for risk ranking of passive functions (i.e., structural integrity and pressure boundary), and since STPNOC is not proposing (for purposes of the exemption) to categorize piping lower than its RI-ISI risk ranking, there is a sufficient technical justification for STPNOC's proposal to exclude LSS/NRS Class 1 and 2 piping (and supports) and its associated components (and supports) from the scope of the ISI examination requirements in 10CFR50.55a(g) to the extent that they have been risk ranked as low under the RI-ISI program.

STPNOC has performed a comparison of the RI-ISI risk ranking (based on EPRI methodology for RI-ISI) of Class 1 and Class 2 piping against the categorization for the pressure boundary function as determined by the exemption categorization process for the associated systems.

Results show that, with one exception, piping that is LSS or NRS under the exemption categorization process is also risk ranked as low under the RI-ISI methodology. The one exception is on the Auxiliary Feedwater (AFW) system, where portions of the piping are assigned an RI-ISI risk of medium compared to LSS as determined by the exemption categorization process. As indicated by the above matrix, those portions of the AFW system will not be subject to the exemption from the ISI examination requirements in 10CFR50.55a(g).

STPNOC also notes that, to date, it has not categorized the piping under the categorization process described in the exemption request. Until such time as the NRC approves the exemption request and piping is categorized under both processes, the piping (and supports) and its associated components (and supports) will remain under the scope of Section XI or RI-ISI, as applicable - - i.e., it will not be removed from the scope of ISI under 10CFR50.55a(g).

In order to provide additional assurance for Low or NRS systems, STPNOC will perform periodic system pressure tests, up to and including the Section XI equivalent tests. These tests will be performed on systems whose components have been ranked as Low or NRS, based on the higher of the RI-ISI program or the GQA pressure boundary categorization, as described above. Such tests will ensure that the systems are fully intact and that sufficient safety margin is maintained.

Thus, from a risk-informed perspective, STPNOC concludes that combining the exemption categorization process and the RI-ISI risk ranking process adequately evaluates the safety significance of the passive functions, such as pressure boundary and structural integrity, of Class 1 and 2 piping and its associated components.

#### STPNOC's Proposed Exemption for ASME Class 3 Components and Supports

As discussed above, STPNOC is not planning to request relief to extend its RI-ISI risk ranking process to ASME Class 3 components. Therefore, STPNOC cannot use the above matrix for Class 3 components. Instead, STPNOC is proposing that Class 3 components subject to ISI examination requirements in 10CFR50.55a(g) continue to meet these requirements, regardless of their GQA pressure boundary category, until the following evaluation is completed. This evaluation will consist of an abbreviated RI-ISI type analysis and a comparison of the results to the GQA pressure boundary categorization, as detailed below:

- 4) An evaluation of the probability and spatial effects consequences of pipe rupture would be performed as follows:
  - a) For probability determinations, the evaluation would consider the extent to which degradation mechanisms exist that could result in rupture of the piping. Such degradation mechanisms include thermal fatigue, erosion-cavitation, corrosion, and stress corrosion. Water hammer would not be considered as it is not a degradation mechanism and would not be amenable to prevention through timely inspection.
  - b) For spatial effects consequences, STPNOC would take advantage of studies already conducted for areas containing Class 2 piping. The components in those areas were assumed to fail due to flooding from rupture of the Class 2 piping. Based on failure of these components, the consequences on core damage from flooding of each area were determined. Class 3 components subject to ISI examination requirements and located in these areas would be assigned the same consequence category. Any areas containing Class 3 components subject to ISI examination requirements -and that have not been previously evaluated would undergo an evaluation to determine the appropriate

consequence. Class 3 components inside containment are excluded from this evaluation because components inside containment are designed to operate in a harsh environment and any spatial effects from postulated ruptures of Class 3 components inside containment are already bounded by existing analyses.

- c) The probability and consequence evaluations above would be combined to determine a risk rank for the component, as was done under the RI-ISI program.
- 5) The results of the evaluation in 1(c) would be compared to the GQA pressure boundary categorization and the higher of the two used as the risk for ISI examination requirements.
- 6) Class 3 components categorized as Medium or High in (2) would not be exempt from the ISI examination requirements in 10CFR50.55a(g). Class 3 components categorized as Low would be exempt from these requirements. Class 3 components subject to ISI examination requirements that have not been assigned a risk in accordance with the process described in (1) above would continue to meet these requirements.
- 7) In order to provide additional assurance for Low or NRS systems, STPNOC will perform periodic system pressure tests, up to and including the Section XI equivalent tests. These tests will be performed on Class 3 systems whose components have been ranked as Low or NRS, based on the risk results in (2) above. Such tests will ensure that the systems are fully intact and that sufficient safety margin is maintained.

Notwithstanding the specific ISI-related evaluations discussed above, STPNOC provides the following additional justification to support our position that the categorization process is sufficiently robust to support its application to passive functions for Class 3 components, given their lower safety significance.

STPNOC's categorization process evaluates the risk significance of individual SSCs using PRA insights and deterministic insights. All SSCs undergo the deterministic review process, and those SSCs modeled in the PRA also undergo the PRA categorization process. In the deterministic categorization process, the pressure boundary function is explicitly categorized. For each fluid system that has been reviewed under this process, the system function of maintaining pressure boundary has been evaluated for risk significance by the GQA Working Group using the process described in the exemption request. This process includes the assessment of the five critical questions. SSCs whose failure could compromise the pressure boundary function were then assigned the same category as the function.

As detailed in the description of the deterministic process, the critical questions are answered based on the impact and probability of the failure. Operational and historical data has shown that passive failures occur much less frequently than active failures. For example, EPRI report TR-110381, Risk-Based Snubber Inspection and Testing Guidelines, which was referenced in our response to RAI 19, states that dynamic testing has demonstrated that, structurally, ASME-designed valves and piping are inherently robust. This is consistent with historical data and indicates that catastrophic passive failures of ASME systems are highly unlikely. Pressure boundary failures are typically evidenced by small leaks that can quickly be detected, mitigated, and corrected. In addition, EPRI report TR-111880, Piping System Failure Rates and Rupture Frequencies for Use in Risk-Informed In-service Inspection Applications, provides experience data and conclusions that support STPNOC's evaluation of the risk significance of pressure boundary. The low probability of rupture of piping components was taken into account during the categorization of the pressure boundary function and its supporting components.

Class 3 components in systems or portions of systems where the pressure boundary function was categorized as LSS are typically not classified as high energy. For such components, credible leakage would not have a significant impact on system or plant operation. Typically, there are means for make-up to the system. Additionally, reliability in this area has been good. Component pressure boundary failures, when they occur, exhibit themselves primarily as leaks rather than ruptures. These leaks would quickly become evident during routine operator rounds, system engineer walkdowns, or other visual or system performance indication. The probability of component rupture in an ASME Class 3 system is very unlikely, and the probability of such a rupture occurring at the same time as a safety system being demanded to support accident or transient mitigation is even more remote and is not credible. Therefore, there is a sound basis for categorizing the pressure boundary function of most Class 3 components as LSS or NRS.

The exemption categorization process does not explicitly assign a category to the structural integrity function of components. However, consideration of the probability and impact of structural integrity failure is inherent in the component performance and reliability data (both STP and industry) used during the categorization process. Passive failures of selected pressure boundary components are also included in the PRA as initiating events, based on their impact on the plant and the frequency of occurrence. Additionally, spatial interaction analyses for internal flooding scenarios are also included. The PRA results show that internal floods are not dominant scenarios to either core damage or large early release. Furthermore, other types of spatial interactions are not important for Class 3 components. In addition, most Class 3 systems are not high energy systems. For those systems that are not high energy, pipe whip and jet impingement are not a significant concern, and a postulated rupture of the system would not result in a harsh environment. Furthermore, the probability of a rupture of a Class 3 system at the same time as a safety system being demanded to support accident or transient mitigation is very remote and not credible. Finally, Section 3.6.1.3.2 of the Updated Final Safety Analysis Report for STP identifies various design features that are in place to protect other systems from the effects of pipe failures, including separation of piping from other safety systems, use of barriers and shields, and use of piping restraints. Based upon all of the above, it is apparent that, from a risk-informed perspective, the importance of Class 3 components is limited to the pressure boundary function, not structural integrity. Therefore, there is no technical basis for requiring the exemption categorization process to explicitly account for structural integrity failures of passive components.

Finally, as noted above, with one exception involving a portion of the AFW system, the category assigned to the pressure boundary function under the exemption categorization process is the same as or higher than the category assigned to the associated piping under the NRC-approved RI-ISI risk ranking process for STP. This is a further indication of the robustness of the exemption categorization process, as applied to both pressure boundary and structural integrity functions.

Thus, from a risk-informed perspective, STPNOC concludes that its exemption categorization process adequately evaluates the safety significance of the passive functions, such as pressure boundary and structural integrity, of Class 3 components.



## STPEGS UFSAR 13.7

### 13.7 RISK-INFORMED SPECIAL TREATMENT REQUIREMENTS

#### 13.7.1 Introduction

NRC regulations in 10 CFR Parts 21, 50, and 100 contain special treatment requirements that impose controls to ensure the quality of components that are safety-related, important to safety, or otherwise come within the scope of the regulations. These special treatment requirements go beyond normal commercial and industrial practices, and include quality assurance (QA) requirements, qualification requirements, inspection and testing requirements, and Maintenance Rule requirements. STP has been granted an exemption from the special treatment requirements. Table 13.7-1 identifies the regulations from which an exemption was granted and the scope of the exemption. This exemption only pertains to special treatment requirements; it does not change the ~~design and functional requirements for components of 10 CFR Parts 50 and 100 that specify design or functional requirements for SSCs; i.e., the requirements that specify the safety functions to be performed by a system or component (including features to prevent adverse impacts upon the safety function of one SSC due to the failure of another SSC). Also it does not change any design or functional requirements in the other sections of the STP FSAR or requirements of the STP Technical Specifications.~~

STP has a risk-informed process for categorizing the safety/risk significance of components. This process is described in Section 13.7.2. Components with no or low safety significance have been exempted from the scope of most of the NRC regulations that impose special treatment requirements, and instead are subject to normal industrial and commercial practices. Additionally, components with medium or high safety significance are evaluated for enhanced treatment. Components retain their original regulatory requirements unless they have been recategorized using the process described below. The treatment for the various categories of components is described in Section 13.7.3. As part of this process, STP also performs continuing evaluations and assessments, which are described in Section 13.7.4. Finally, STP applies quality assurance to this process, and controls changes to the process, as described in Section 13.7.5.

#### 13.7.2 Component Categorization Process

13.7.2.1 Overview of Categorization Process. The process utilized by STP in categorizing components consists of the following major tasks:

1. Identification of functions performed by the subject plant system.
2. Determination of the risk significance of each system function.
3. Identification of the system function(s) supported by that component.
4. Determination of a risk categorization of the component based on probabilistic risk assessment (PRA) insights (where the component is modeled)
5. Development of a risk categorization of the component based on deterministic insights.
6. Designation of the overall categorization of the component, based upon the higher of the PRA categorization and the deterministic categorization.
7. Identification of critical attributes for components determined to be safety/risk significant.

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The processes for determining the risk categorization and deterministic categorization of a component are described in more detail in Sections 13.7.2.3 and 13.7.2.4.

Based upon these processes, a component is placed into one of four categories: 1) high safety/risk significant (HSS), 2) medium safety/risk significant (MSS), 3) low safety/risk significant (LSS), and 4) non-risk significant (NRS). This categorization process does not, in and of itself, affect the other classifications of the component (e.g., safety, seismic, ASME classification).

The process is implemented by a Working Group comprised of individuals experienced in various facets of nuclear plant operation and reviewed by an Expert Panel. This integrated decision process is described in more detail in Section 13.7.2.2.

**13.7.2.2 Comprehensive Risk Management Process.** The integrated decision-making process used by STP is controlled by procedure. The integrated decision-making process incorporates the use of an Expert Panel and Working Groups. The Expert Panel is comprised of qualified senior level individuals and is responsible for oversight of the program and for reviewing the activities and recommendations of the Working Group. The Working Group is comprised of experienced individuals who apply risk insights and experience to categorize components in accordance with the process described in this Section and make recommendations to the Expert Panel.

The Expert Panel and Working Group have expertise in the areas of risk assessment, quality assurance, licensing, engineering, and operations and maintenance. The combined membership of the Expert Panel and Working Group includes at least three individuals with a minimum of five years experience at STP or similar nuclear plants, and at least one individual who has worked on the modeling and updating of the PRA for STP or similar plants for a minimum of three years.

Procedures control the composition of and processes used by the Expert Panel and Working Group. Procedures also identify training requirements for members of the Expert Panel and Working Group, including training on probabilistic risk assessment, risk ranking, and the graded quality assurance process. Finally, the procedures specify the requirements for a quorum of the Expert Panel and Working Group, meeting frequencies, the decision-making process for determining the categorization of components, the process for resolving differing opinions among the Expert Panel and Working Group, and periodic reviews of the appropriateness of the programmatic control and oversight of categorized components.

**13.7.2.3 PRA Risk Categorization Process.** A component's risk categorization is initially based upon its impact on the results of the PRA. **[COMMENT: No discussion of sensitivity studies included in this section of the categorization process.]**

STP's PRA calculates both a core damage frequency (CDF) and a large early release frequency (LERF). The PRA models internal initiating events at full power, and also accounts for the risk associated with external events.

The PRA configuration control program incorporates a feedback process to update the PRA Model. The updates are segregated into two categories:

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- The plant operating update incorporates plant design changes and procedure changes that affect PRA-modeled components, initiating event frequency updates, and changes in SSC unavailability that affect the PRA model. These changes will be incorporated into the model on a period not to exceed 36 months.
- The comprehensive data update incorporates changes to plant-specific failure rate distributions and human reliability, and any other database distribution updates (examples would include equipment failure rates, recovery actions, and operator actions). This second category will be updated on a period not to exceed 60 months.

The PRA model may be updated on a more frequent basis if an update would result in a significant increase in the CDF.

Only components that are modeled in the PRA are given an initial risk categorization. The PRA risk categorization of a component is based upon its Fussell-Vessely (FV) importance, which is the fraction of the CDF and LERF to which failure of the component contributes, and its risk achievement worth (RAW), which is the factor by which the CDF and LERF would increase if it were assumed that the component is guaranteed to fail. Specifically, PRA risk categorization is based upon the following:

PRA Ranking	Criteria
High	$RAW \geq 100.0$ or $FV \geq 0.01$ or $FV \geq 0.005$ and $RAW \geq 2.0$
Medium (Further Evaluation is Required)	$FV < 0.005$ and $100.0 > RAW \geq 10.0$
Medium	$FV \geq 0.005$ and $RAW < 2.0$ or $FV < 0.005$ and $10.0 > RAW \geq 2.0$
Low	$FV < 0.005$ and $RAW < 2.0$

13.7.2.4 Deterministic Categorization Process. Components are subject to a deterministic categorization process, regardless of whether they are also subject to the risk categorization process using PRA insights. This deterministic categorization process can result in an increase, but not a decrease (from the PRA risk), in a component's categorization.

**[COMMENT: Needs to discuss the application of the RI-ISI methodology for passive pressure boundary function categorization of ASME Class 1, 2, & 3 components.]**

A component's deterministic categorization is directly attributable to the importance of the system function supported by the component. In cases, where a component supports more than one system function, the component is classified based on the highest safety classification of the function supported. In categorizing the functions of a system, the Working Group considers five critical questions regarding the function, each of which is given a different weight. These questions and their weight are as follows:

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<u>QUESTION</u>	<u>WEIGHT</u>
Is the function used to mitigate accidents or transients?	5
Is the function specifically called out in the emergency operating procedures (EOPs) or Emergency Response Procedures (ERPs)?	5
Does the loss of the function directly fail another risk-significant system?	4
Is the loss of the function safety significant for shutdown or mode changes?	3
Does the loss of the function, in and of itself, directly cause an initiating event?	3

Based on the impact on safety if the function is unavailable and the frequency of loss of the function, each of the five questions is given a numerical answer ranging from 0 to 5. This grading scale is as follows:

“0” - Negative response

“1” - Positive response having an insignificant impact and/or occurring very rarely

“2” - Positive response having a minor impact and/or occurring infrequently

“3” - Positive response having a low impact and/or occurring occasionally

“4” - Positive response having a medium impact and/or occurring regularly

“5” - Positive response having a high impact and/or occurring frequently

The definitions for the terms used in this grading scale are as follows:

### Frequency Definitions –

- Occurring Frequently – continuously or always demanded
- Occurring Regularly – demanded > 5 times per year
- Occurring Occasionally – demanded 1-2 times per cycle
- Occurring Infrequently – demanded < once per cycle
- Occurring Very Rarely – demanded once per lifetime

### Impact Definitions –

- High Impact – a system function is lost which likely could result in core damage and/or may have a negative impact on the health and safety of the public
- Medium Impact – a system function is lost which may, but is not likely to, result in core damage and/or is unlikely to have a negative impact on the health and safety of the public

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- Low Impact – a system function is significantly degraded, but no core damage and/or negative impact on the health and safety of the public is expected
- Minor Impact – a system function has been moderately degraded, but no core damage or negative impact on the health and safety of the public
- Insignificant Impact – a system function has been challenged, but no core damage or negative impact on the health and safety of the public

Although some of these definitions are quantitative, both of these sets of definitions are applied based on the collective judgment and experience of the Working Group.

The numerical values, after weighting, are summed; the maximum possible value is 100. Based on the sum, functions are categorized as follows:

<u>SCORE RANGE</u>	<u>CATEGORY</u>
0 – 20	NRS
21 – 40	LSS
41 – 70	MSS
71 – 100	HSS

A function with a low categorization due to a low sum can receive a higher risk classification if any one of their five questions received a high numerical answer. Specifically, a weighted score of 25 on any one question results in an HSS categorization; a weighted score of 15-20 on any one question results in a minimum categorization of MSS; and a weighted score of 9-12 on any one question results in a minimum categorization of LSS. This is done to ensure that a component with a significant risk in one area does not have that risk masked because of its low risk in other areas.

In general, a component is given the same categorization as the system function that the component supports. However, a component may be ranked lower than the associated system function.

General notes are used to document component risk justification, where needed, for similar component types that are treated the same from system to system. Components covered by a general note are evaluated by the Working Group to ensure proper applicability of the note and appropriateness of the risk categorization. The use of general notes is an administrative tool that allows for increased efficiency in the documentation of justifications of large numbers of similar components. General notes are not used for system functions.

13.7.2.5 Defense in Depth and Safety Margins. For the following reasons, the exemption and the categorization process maintain defense in depth and sufficient safety margins:

[COMMENT: Discussion on Containment Integrity as defense in depth may be needed here]

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- Functional requirements and the design **configuration bases** of systems **will not be changed by this exemption. are retained.**
- No existing plant barriers are removed or altered.
- Design provisions for redundancy, diversity, and independence are maintained.
- The plant's response to transients or other initiators is not affected.
- Preventive or mitigative capability of components is preserved.
- There is no change in any of the safety analyses in the UFSAR.
- Existing safety-related LSS and NRS components will not be replaced, absent good cause (e.g., obsolescence or failure). Since the existing safety-related LSS and NRS components were designed, procured, manufactured, and installed in accordance with the existing special treatment requirements, these components have inherent design margins to perform their intended functions that will not be adversely affected by this exemption.
- **Normal commercial and industrial practices** **The treatment processes described in Section 13.7.3** provide an appropriate and acceptable level of assurance that safety-related LSS and NRS components will be able to perform their intended functions.
- The corrective action program is applied to safety-related LSS and NRS components. This program provides reasonable assurance that deficiencies involving safety-related LSS and NRS components will be identified, corrected, and necessary action taken to ensure acceptable performance levels are maintained.

### 13.7.3 Treatment for Component Categories

13.7.3.1 Description of Treatment for Component Categories. The following treatment is provided for the various component categories:

- Safety-Related HSS and MSS Components – **The purpose of treatment applied to safety-related HSS and MSS SSCs is to maintain compliance with NRC regulations and the ability of these SSCs to perform any risk-significant functions consistent with the assumptions in the categorization process.** These components continue to receive the treatment required by NRC regulations and STP's associated implementing programs.

Some safety-related components may be called upon to perform functions that are beyond the design basis or perform safety-related functions under conditions that are beyond the design basis. STP's PRA does not take credit for such functions unless there is basis for confidence that the component will be able to perform the functions (e.g., the functions are subject to special treatment; demonstrated ability of the component to perform the functions under the specified conditions). Additionally, to the extent that the PRA does credit such functions, the PRA assumes a reduced reliability for the function commensurate with the severity of the beyond design basis conditions in question and the special treatment provided to the function. However, if STP should decide to take credit for such functions beyond that described above, STP would use the process described in Section 13.7.3.2 to evaluate the risk-significant functions performed by these components that are not being treated under STP's current programs, and provide enhanced treatment for such functions.

- Non-Safety-Related HSS and MSS Components – **The purpose of treatment applied to non-safety-related HSS and MSS SSCs is to maintain their ability to perform risk-significant functions consistent with the assumptions in the categorization process.** These components will continue to receive any existing special treatment required by NRC regulations and STP's implementing programs. Additionally, the risk-significant functions of these



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components will receive consideration for enhanced treatment. This consideration is described in Section 13.7.3.2.

- Safety-Related LSS and NRS Components – These components receive STP's normal commercial and industrial practices. These practices are described in Section 13.7.3.3.
- Non-Safety-Related LSS and NRS Components – The treatment of these components is not subject to regulatory control.
- Uncategorized Components – Until a component is categorized, it continues to receive the treatment required by NRC regulations and STP's associated implementing programs, as applicable.

13.7.3.2 Enhanced Treatment for HSS and MSS Components. Non-safety-related HSS and MSS components may perform risk-significant functions that are not addressed by STP's current treatment programs.

When a non-safety-related component is categorized as HSS or MSS, STP documents the condition under the corrective action program and determines whether enhanced treatment is warranted to enhance the reliability and availability of the function. In particular, STP evaluates the treatment applied to the component to ensure that the existing controls are sufficient to maintain the reliability and availability of the component in a manner that is consistent with its categorization. This process evaluates the reliability of the component, the adequacy of the existing controls, and the need for any changes. If changes are needed, additional controls are applied to the component. In addition, the component is placed under the Maintenance Rule monitoring program, if not already scoped in the program (i.e., failures of the component are evaluated and Maintenance Rule Functional Failures (MRFF) involving the component are counted against the performance criteria at the plant/system/train level, as applicable). Additionally, as provided in the approved GQA program, non-safety-related HSS and MSS components are subject to the TARGETED QA program. These controls will be specifically 'targeted' to the critical attributes that resulted in the component being categorized as HSS or MSS. Components under these controls will remain non-safety-related, but the special treatments will be appropriately applied to give additional assurance that the component will be able to perform its HSS/MSS function when demanded.

As discussed in Section 13.7.3.1, STP's PRA does not take credit for the beyond-design basis functions of safety-related components, unless there is a basis for confidence that the component will be able to perform the functions. However, if STP should decide to take credit for a risk-significant function in a situation in which existing special treatment does not provide the applicable level of confidence, STP would use the process described above to evaluate enhanced treatment for the function.

These identified processes provide reasonable assurance that HSS and MSS components will be able to perform their safety significant functions. *The validation of functionality of HSS and MSS SSCs (safety-related and non-safety-related) will consist of a documented engineering evaluation to determine what enhanced treatment, if any, is warranted for these SSCs to provide confidence that the applicable risk significant functions will be satisfied. The performance of these SSCs will be monitored sufficiently to assure their ongoing capability to perform their applicable functions credited in the PRA. The design control process will assure*

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*that facility changes affecting the risk-significant functions of these SSCs credited in the PRA will continue to be capable of performing those functions.*

### 13.7.3.3 Normal Commercial and Industrial Practices for Safety-Related LSS and NRS Components

A description of STP's commercial practices is provided below. *The purpose of the treatment practices applied to safety-related LSS and NRS SSCs is to maintain their design basis and functionality under all design-basis conditions.*

13.7.3.3.1 Design Control Process. The Station's Design Control Program is used for safety-related SSCs, including safety-related LSS and NRS SSCs). The Design Control Program complies with 10 CFR Part 50, Appendix B, and is described in the Operations Quality Assurance Plan (OQAP). *The design control process for safety-related LSS and NRS SSCs will maintain and apply the original design inputs and assumptions to maintain the ability of these SSCs to perform their safety-related functions under design-basis conditions. Changes to the design basis of safety-related LSS and NRS SSCs will be controlled following the design control process satisfying 10 CFR Part 50, Appendix B.*

13.7.3.3.2 Procurement Process. *The procurement process for replacement safety-related LSS and NRS SSCs will maintain and apply the original design inputs and assumptions to maintain the ability of these SSCs to perform their safety-related functions under design-basis conditions.* Technical requirements (including applicable design basis environmental and seismic conditions) are *specified satisfied* for items to be procured, which include the original design inputs and assumptions for the item. *As described below, one* or more of the following methods *are will be* used to determine that the procured item can perform its safety-related function under design basis conditions, including applicable design basis environmental *(temperature and pressure, humidity, chemical effects, radiation, aging, submergence, and synergistic effects)* and seismic *(earthquake motion, as described in the design bases, including seismic inputs and design load combinations)* conditions:

- Vendor Documentation - *Vendor documentation should be used when* the performance characteristics for the item, as specified in vendor documentation (e.g., catalog information, certificate of conformance), satisfy *STP's technical the original SSC's design* requirements. *If the vendor documentation does not contain this level of detail, then the design requirements could be provided in the procurement specifications. The vendor's acceptance of the procurement specifications without exception could be used as the basis for confidence that the replacement safety-related LSS or NRS SSC would remain capable of performing its safety-related functions under design basis conditions.*
- Equivalency Evaluation - An equivalency evaluation *could be used when it is sufficient to* determines that the procured item is equivalent to the item being replaced (e.g., a like-for-like replacement). *An equivalency evaluation is sufficient to demonstrate component functionality under design basis harsh environmental conditions for identical components.*
- Engineering Evaluation - *For minor differences, an* engineering evaluation *that* compares the differences between the procured item and original item *and demonstrates that the differences in material, size, shape, stressors, aging*



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*mechanisms, and functional capabilities would not adversely affect the ability to perform the safety related functions of the SSC could be used to establish component functionality under design basis conditions.*

- Engineering Analysis - In cases involving ~~design changes or~~ substantial differences between the procured item and ~~replacement original~~ item, an engineering analysis ~~may~~ *could* be performed to determine that the procured item can perform its safety-related function under design basis conditions. The engineering analysis ~~may~~ *would* be based upon a computer calculation, evaluations by multiple disciplines, test data, or operating experience related to the procured item over its expected life. *Where the differences are determined to result in a design change, STP will following the design control process for safety-related SSCs.*

[COMMENT: Further discussions may be required on the level of detail required for an engineering analysis to address environmental design basis conditions.]

- Testing - If none of the above methods are sufficient, commercial testing *under simulated design basis conditions* would be performed on the component. Margins *and* documentation, ~~and additional assurance~~ specified in NRC regulations would not be required in these tests, since the components are LSS/NRS and do not warrant this additional assurance.

Documentation of the implementation of these methods is maintained. Additionally, documentation is maintained to identify the preventive maintenance needed to preserve the capability of the procured item to perform its safety-related function under applicable design basis environmental and seismic conditions for its expected life.

A Purchase Order is issued to the supplier, which specifies the item to be procured either by catalog identification or procurement specifications, *as applicable*.

STP uses the following commercial national consensus standards in the procurement process, *as necessary* to provide confidence that components can perform their safety-related function:

- X Standards required by the State of Texas to be used in the process.
- X Standards used at STP for *the procurement of SSCs consistent with STP's normal commercial and industrial practices. processes or component attributes that are not subject to NRC special treatment requirements.*

STP does not need to itemize the standards in use at STP or to perform an evaluation of all national consensus standards.

The procurement program provides for the identification and implementation of special handling and storage requirements ~~(if required)~~ to ensure that the item is not damaged or degraded during shipment to the site or during storage on site. These handling and storage requirements consider available recommendations from the vendor. STP may use an alternative to these recommendations if there is a *technical basis that continues to supports the functionality of the safety-related LSS and NRS SSCs. basis for doing so.* The basis does not need to be documented.

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At the time of receipt, the received item is inspected to ensure that the item was not damaged in the process of shipping, and that the item received is the item ordered.

13.7.3.3.3 Installation Process. *The installation process for safety-related LSS and NRS SSCs will be implemented to maintain the ability of these SSCs to perform their safety-related functions under design-basis conditions.* STP uses the following commercial national consensus standards in the installation process, ~~as necessary~~ to provide confidence that components can perform their safety-related function:

- X Standards required by the State of Texas to be used in the process.
- X Standards used at STP for *the installation of SSCs consistent with STP's normal commercial and industrial practices, processes or component attributes that are not subject to NRC special treatment requirements.*

STP does not need to itemize the standards in use at STP or to perform an evaluation of all national consensus standards.

~~Appropriate Post-installation testing is will be performed if the installation could affect an to provide confidence that the installed SSC will perform its safety function satisfactorily in service. SSC's safety-related function.~~ The test verifies that the SSC is operating within expected parameters and is functional. The testing may necessitate that the SSC be placed in service to validate the acceptance of its performance. Testing is not necessarily performed under design basis conditions.

13.7.3.3.4 Maintenance Process. *The maintenance process for safety-related LSS and NRS SSCs will be implemented to maintain the ability of these SSCs to perform their safety-related functions under design-basis conditions through predictive, preventive, and corrective maintenance.* Preventive maintenance tasks are developed for active structures, systems, or components factoring in vendor recommendations. STP may use an alternative to these recommendations if there is a *technical basis that supports the functionality of the safety-related LSS and NRS SSCs. basis for doing so.* The basis does not need to be documented. *For SSCs with a designed life, STP will perform an analysis before the SSC exceeds this life to determine whether the SSC will remain capable of performing its safety-related function(s) beyond its designed life. The service conditions for SSCs with a designed life will be monitored to ensure the basis for the designed life remains valid.*

The frequency and scope of predictive maintenance actions are established and documented based on ~~various considerations such as~~ vendor recommendations, environmental operating conditions, safety significance, and operating performance history. STP may deviate from vendor recommendations *where a technical basis supports the functionality of the safety-related LSS and NRS SSCs. based on specific circumstances and sound business practices.* Such deviations are not required to be documented.

When an SSC deficiency is identified, it is documented and tracked through the Corrective Action Program. The deficiency is evaluated to determine the ~~appropriate~~ corrective maintenance to be performed.

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Following maintenance activities that affect the capability of a component to perform its safety-related function, ~~appropriate~~ post maintenance testing is performed to provide confidence that the SSC is performing within expected parameters.

STP uses the following commercial national consensus standards in the maintenance process, ~~as necessary~~ to provide confidence that components can perform their safety-related function:

- X Standards required by the State of Texas to be used in the process.
- X Standards used at STP for *maintenance of SSCs consistent with STP's normal commercial and industrial practices. processes or component attributes that are not subject to NRC special treatment requirements.*

STP does not need to itemize the standards in use at STP or to perform an evaluation of all national consensus standards.

13.7.3.3.5 Inspection, Test, and Surveillance Process. *The inspection, test, and surveillance process for safety-related LSS and NRS SSCs will be implemented to maintain the ability of these SSCs to perform their safety-related functions under design-basis conditions.*

The Station's inspection and test process is primarily addressed and implemented through the Maintenance process. As stated above, the Maintenance process addresses inspections and tests through corrective, preventive, and predictive maintenance activities. These activities factor in vendor recommendations into the selected approach. STP may use an alternative to these recommendations if there is a *technical basis that supports the functionality of the safety-related LSS and NRS SSCs. basis for doing so.* The basis does not need to be documented.

For ASME pumps and valves, the inspection, test, and surveillance process provides data/information that allows *insights evaluation of operating characteristics sufficient to*

conclude that the component will *perform its safety function under design-basis conditions until the next time operational data/information is obtained likely satisfy its functional requirements.*

STP uses the following commercial national consensus standards in the inspection, test, and surveillance process, ~~as necessary~~ to provide confidence that components can perform their safety-related functions:

- X Standards required by the State of Texas to be used in the process.
- X Standards used at STP for *testing, inspecting, or surveillance of SSCs consistent with STP's normal commercial and industrial practices. processes or component attributes that are not subject to NRC special treatment requirements.*

STP does not need to itemize the standards in use at STP or to perform an evaluation of all national consensus standards.

13.7.3.3.6 Corrective Action Program. The Station's Corrective Action Program is used for both safety-related (LSS and NRS as well as HSS and MSS SSCs) and non-safety-related applications. The Corrective Action Program complies with 10 CFR Part 50 Appendix B, and is described in the OQAP.

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13.7.3.3.7 Management and Oversight Process. *The management and oversight process for safety-related LSS and NRS SSCs will be implemented to maintain the ability of these SSCs to perform their safety-related functions under design-basis conditions.* The Station's management and oversight process is accomplished through approved procedures and guidelines. This process includes independent oversight, line self-assessments, and Maintenance Rule implementation (*plant*, system, or train level for LSS and NRS *components*). In addition, the Graded Quality Assurance Working Group periodically assesses SSC performance.

Procedures provide for the qualification, training, and certification of personnel, *commensurate with the functions they perform.* ~~Experienced personnel may be exempted from prerequisite training.~~ STP considers vendor recommendations in the training, qualification, and certification of personnel. STP may use an alternative to these recommendations if there is a *technical basis that supports the functionality of the safety-related LSS and NRS SSCs.* ~~basis for doing so.~~ The basis does not need to be documented. Additionally, STP uses the following commercial national consensus standards for qualification, training, and certification of personnel, *as necessary* to provide confidence that components can perform their safety-related function:

- X Standards required by the State of Texas to be used in the process.
- X Standards used at STP for *qualification, training, or certification of personnel, consistent with STP's normal commercial and industrial practices.* ~~processes or component attributes that are not subject to NRC special treatment requirements.~~

STP does not need to itemize the standards in use at STP or to perform an evaluation of all national consensus standards.

Documentation, reviews, and record retention requirements for completed work activities are governed by Station procedures.

Procedures identify the types of inspection, test, and surveillance equipment requiring control and calibration, and the interval of calibration. Equipment that is found to be in error or defective is removed from service or properly tagged to indicate the error or defect, and a determination is made of the functionality of the *HSS/MSS safety-related* SSCs that were checked using that equipment.

*Planned changes to, or elimination of, commitments described in the FSAR or other licensing bases documentation that address issues identified in NRC generic communications (i.e., generic letters or bulletins), NRC orders, notices of violation, etc. related to safety-related LSS and NRS SSCs will be evaluated for the effect on the ability of these SSCs to perform their safety-related functions under design basis conditions in accordance with the current NRC endorsed version of NEI 99-04.*

13.7.3.3.8 Configuration Control Process. The Station's configuration control process is controlled through approved procedures and policies. The design control process ensures that the configuration of the Station is properly reflected in design documents and drawings.

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### 13.7.4 Continuing Evaluations and Assessments

[Please clarify that Section 13.7.4 only applies to SSCs that have been categorized and includes all categorized SSCs regardless of categorization]

13.7.4.1 Performance Monitoring. STP has performance monitoring processes for the changes in the special treatment. This monitoring includes the following:

- Maintenance Rule Program – Specific performance criteria are identified at the plant, system, or train level. Regardless of their risk categorization, components that affect MSS or HSS functions will be monitored and assessed in accordance with plant, system and/or train performance criteria.
- Performance Reporting & Identification Database – This database collects both positive and negative indicators from the performance of plant activities, such as corrective maintenance, installation of modifications, and conduct of testing. The Quality organization provides oversight of this database.
- Corrective Action Program - Condition reports document degraded equipment performance or conditions, including conditions identified as a result of operator rounds, system engineer walk-downs, and corrective maintenance activities.

13.7.4.2 Feedback and Corrective Action. STP has feedback and corrective action processes to ensure that equipment performance changes are evaluated for impact on the component risk categorization, the application of special treatment, and other corrective actions. At least once per cycle, performance data is compiled and presented to the Working Group for review, which is performed for each risk-categorized system. Performance and reliability data are generally obtained from sources such as the Maintenance Rule Program and Operating Experience Review.

This process provides an appropriate level of assurance that any significant negative performance changes that are attributed to the relaxation of special treatment controls are addressed in a timely manner. Responsive actions may include the reinstatement of applicable controls up to and including the re-categorization of the component's risk significance, as appropriate.

13.7.4.3 Process for Assessing Aggregate Changes in Plant Risk. The Expert Panel is responsible for assessing and approving the aggregate effect on plant risk for risk-informed applications.

The process used to access the aggregate change in plant risk associated with changes in special treatment for components is based on periodic updates to the station's PRA and the associated PRA risk ranking sensitivity studies. [COMMENT: Only place that the sensitivity studies are mentioned.]

### 13.7.5 Quality Assurance and Change Control for the Risk-Informed Process

#### 13.7.5.1 Quality Assurance for the PRA and Categorization Process.

STP has a PRA configuration control program, which is structured to ensure that changes in plant design and equipment performance are reflected in the PRA as appropriate. The PRA

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configuration control process is controlled by procedures and guidelines that ensure proper control of changes to the models.

13.7.5.2 Regulatory Process for Controlling Changes. Changes affecting Section 13.7 will be controlled in accordance with the following provisions:

- a. **Changes in the Component Categorization Process as described in Section 13.7.2 may be made without prior NRC approval, unless the change would decrease the effectiveness of the process in identifying HSS and MSS components.**
  - b. **Changes in the Treatment of Component Categories as described in Section 13.7.3 may be made without prior NRC approval, unless the change would result in a reduction in the assurance of component functionality.**
  - c. **Changes in the Continuing Evaluations and Assessments as described in Section 13.7.4 may be made without prior NRC approval, unless the change would result in a decrease in effectiveness of the evaluations and assessments.**
  - d. **A report shall be submitted, as specified in 10 CFR 50.4, of each change made without prior NRC approval pursuant to these provisions. The report shall identify each change and describe the basis for the conclusion that the change does not involve a decrease in effectiveness or assurance as described above. The report shall be submitted within 60 days of the date of the change.**
  - e. **Changes to the descriptions of the categorization, treatment, and oversight (evaluation and assessment) processes in Sections 13.7.2, 13.7.3, and 13.7.4 that result in a decrease or reduction in the effectiveness or assurance of these processes as described above shall be submitted to the NRC for prior review and approval.**
- ~~Changes in the Component Categorization Process as described in Section 13.7.2 may be made without prior NRC approval, unless the change would decrease the effectiveness of the process in identifying HSS and MSS components.~~
  - ~~Changes in the Treatment of Component Categories as described in Section 13.7.3 may be made without prior NRC approval, unless the change would result in more than a minimal reduction in the assurance of component functionality.~~
  - ~~Changes in the Continuing Evaluations and Assessments as described in Section 13.7.4 may be made without prior NRC approval, unless the change would result in more than a minimal decrease in effectiveness of the evaluations and assessments.~~
- ~~STP shall submit a report, as specified in 10 CFR 50.4, of each change made without prior NRC approval pursuant to these provisions. The report shall identify each change and summarize the basis for the conclusion that the change does not involve either a decrease/reduction in effectiveness as described above. The report shall be submitted within 60 days of approval of the change.~~



## STPEGS UFSAR 13.7

### 13.7 RISK-INFORMED SPECIAL TREATMENT REQUIREMENTS

#### 13.7.1 Introduction

NRC regulations in 10 CFR Parts 21, 50, and 100 contain special treatment requirements that impose controls to ensure the quality of components that are safety-related, important to safety, or otherwise come within the scope of the regulations. These special treatment requirements go beyond normal commercial and industrial practices, and include quality assurance (QA) requirements, qualification requirements, inspection and testing requirements, and Maintenance Rule requirements. STP has been granted an exemption from the special treatment requirements. Table 13.7-1 identifies the regulations from which an exemption was granted and the scope of the exemption. This exemption only pertains to special treatment requirements; it does not change the requirements of 10 CFR Parts 50 and 100 that specify design or functional requirements for SSCs; i.e., the requirements that specify the safety functions to be performed by a system or component (including **design** features to prevent adverse impacts upon the safety function of one SSC due to the failure of another SSC). Also it does not change any design or functional requirements in the other sections of the STP FSAR or requirements of the STP Technical Specifications.

STP has a risk-informed process for categorizing the safety/risk significance of components. This process is described in Section 13.7.2. Components with no or low safety significance have been exempted from the scope of most of the NRC regulations that impose special treatment requirements, and instead are subject to normal industrial and commercial practices. Additionally, components with medium or high safety significance are evaluated for enhanced treatment. Components retain their original regulatory requirements unless they have been recategorized using the process described below. The treatment for the various categories of components is described in Section 13.7.3. As part of this process, STP also performs continuing evaluations and assessments, which are described in Section 13.7.4. Finally, STP applies quality assurance to this process, and controls changes to the process, as described in Section 13.7.5.

#### 13.7.2 Component Categorization Process

**13.7.2.1 Overview of Categorization Process.** The process utilized by STP in categorizing components consists of the following major tasks:

1. Identification of functions performed by the subject plant system.
2. Determination of the risk significance of each system function.
3. Identification of the system function(s) supported by that component.
4. Determination of a risk categorization of the component based on probabilistic risk assessment (PRA) insights (where the component is modeled)
5. Development of a risk categorization of the component based on deterministic insights.
6. Designation of the overall categorization of the component, based upon the higher of the PRA categorization and the deterministic categorization.
7. Identification of critical attributes for components determined to be safety/risk significant.

The processes for determining the risk categorization and deterministic categorization of a component are described in more detail in Sections 13.7.2.3 and 13.7.2.4.

Based upon these processes, a component is placed into one of four categories: 1) high safety/risk significant (HSS), 2) medium safety/risk significant (MSS), 3) low safety/risk significant (LSS), and 4) non-risk significant (NRS). This categorization process does not, in and of itself, affect the other classifications of the component (e.g., safety, seismic, ASME classification).

The process is implemented by a Working Group comprised of individuals experienced in various facets of nuclear plant operation and reviewed by an Expert Panel. This integrated decision process is described in more detail in Section 13.7.2.2.

**13.7.2.2 Comprehensive Risk Management Process.** The integrated decision-making process used by STP is controlled by procedure. The integrated decision-making process incorporates the use of an Expert Panel and Working Groups. The Expert Panel is comprised of qualified senior level individuals and is responsible for oversight of the program and for reviewing the activities and recommendations of the Working Group. The Working Group is comprised of experienced individuals who apply risk insights and experience to categorize components in accordance with the process described in this Section and make recommendations to the Expert Panel.

The Expert Panel and Working Group have expertise in the areas of risk assessment, quality assurance, licensing, engineering, and operations and maintenance. The combined membership of the Expert Panel and Working Group includes at least three individuals with a minimum of five years experience at STP or similar nuclear plants, and at least one individual who has worked on the modeling and updating of the PRA for STP or similar plants for a minimum of three years.

Procedures control the composition of and processes used by the Expert Panel and Working Group. Procedures also identify training requirements for members of the Expert Panel and Working Group, including training on probabilistic risk assessment, risk ranking, and the graded quality assurance process. Finally, the procedures specify the requirements for a quorum of the Expert Panel and Working Group, meeting frequencies, the decision-making process for determining the categorization of components, the process for resolving differing opinions among the Expert Panel and Working Group, and periodic reviews of the appropriateness of the programmatic control and oversight of categorized components. ***[STPNOC proposed to rewrite Section 13.7.2.2 to be generic in describing the organization implementing the integrated decision-making process. Description of the functional aspects of the integrated decision-making process would be retained.]***

**13.7.2.3 PRA Risk Categorization Process.** A component's risk categorization is initially based upon its impact on the results of the PRA. ***[STPNOC agreed to add a discussion on the sensitivity study that increased the failure rate of LSS SSCs modeled in the PRA. The relation of this sensitivity study to the guidance provided in Regulatory Guide 1.174 would also be discussed.]***

STP's PRA calculates both a core damage frequency (CDF) and a large early release frequency (LERF). The PRA models internal initiating events at full power, and also accounts for the risk associated with external events.



The PRA configuration control program incorporates a feedback process to update the PRA Model. The updates are segregated into two categories:

- The plant operating update incorporates plant design changes and procedure changes that affect PRA-modeled components, initiating event frequency updates, and changes in SSC unavailability that affect the PRA model. These changes will be incorporated into the model on a period not to exceed 36 months.
- The comprehensive data update incorporates changes to plant-specific failure rate distributions and human reliability, and any other database distribution updates (examples would include equipment failure rates, recovery actions, and operator actions). This second category will be updated on a period not to exceed 60 months.

The PRA model may be updated on a more frequent basis if an update would result in a significant increase in the CDF.

Only components that are modeled in the PRA are given an initial risk categorization. The PRA risk categorization of a component is based upon its Fussell-Vessely (FV) importance, which is the fraction of the CDF and LERF to which failure of the component contributes, and its risk achievement worth (RAW), which is the factor by which the CDF and LERF would increase if it were assumed that the component is guaranteed to fail. Specifically, PRA risk categorization is based upon the following:

PRA Ranking	Criteria
High	RAW $\geq$ 100.0 or FV $\geq$ 0.01 or FV $\geq$ 0.005 and RAW $\geq$ 2.0
Medium (Further Evaluation is Required)	FV $<$ 0.005 and 100.0 $>$ RAW $\geq$ 10.0
Medium	FV $\geq$ 0.005 and RAW $<$ 2.0 or FV $<$ 0.005 and 10.0 $>$ RAW $\geq$ 2.0
Low	FV $<$ 0.005 and RAW $<$ 2.0

13.7.2.4 Deterministic Categorization Process. Components are subject to a deterministic categorization process, regardless of whether they are also subject to the risk categorization process using PRA insights. This deterministic categorization process can result in an increase, but not a decrease (from the PRA risk), in a component's categorization.

**[STPNOC agreed to add discussion on the application of the risk-informed inservice inspection categorization methodology for the categorization of the passive pressure boundary function of ASME Class 1, 2, and 3, components.]**

A component's deterministic categorization is directly attributable to the importance of the system function supported by the component. In cases, where a component supports more than one system function, the component is classified based on the highest **safety classification risk categorization** of the function supported. In categorizing the functions of a system, the

Working Group considers five critical questions regarding the function, each of which is given a different weight. These questions and their weight are as follows:

<u>QUESTION</u>	<u>WEIGHT</u>
Is the function used to mitigate accidents or transients?	5
Is the function specifically called out in the emergency operating procedures (EOPs) or Emergency Response Procedures (ERPs)?	5
Does the loss of the function directly fail another risk-significant system?	4
Is the loss of the function safety significant for shutdown or mode changes?	3
Does the loss of the function, in and of itself, directly cause an initiating event?	3

Based on the impact on safety if the function is unavailable and the frequency of loss of the function, each of the five questions is given a numerical answer ranging from 0 to 5. This grading scale is as follows:

“0” - Negative response

“1” - Positive response having an insignificant impact and/or occurring very rarely

“2” - Positive response having a minor impact and/or occurring infrequently

“3” - Positive response having a low impact and/or occurring occasionally

“4” - Positive response having a medium impact and/or occurring regularly

“5” - Positive response having a high impact and/or occurring frequently

The definitions for the terms used in this grading scale are as follows:

Frequency Definitions –

- Occurring Frequently – continuously or always demanded
- Occurring Regularly – demanded > 5 times per year
- Occurring Occasionally – demanded 1-2 times per cycle
- Occurring Infrequently – demanded < once per cycle
- Occurring Very Rarely – demanded once per lifetime

Impact Definitions –

- High Impact – a system function is lost which likely could result in core damage and/or may have a negative impact on the health and safety of the public

- Medium Impact – a system function is lost which may, but is not likely to, result in core damage and/or is unlikely to have a negative impact on the health and safety of the public
- Low Impact – a system function is significantly degraded, but no core damage and/or negative impact on the health and safety of the public is expected
- Minor Impact – a system function has been moderately degraded, but no core damage or negative impact on the health and safety of the public
- Insignificant Impact – a system function has been challenged, but no core damage or negative impact on the health and safety of the public

Although some of these definitions are quantitative, both of these sets of definitions are applied based on the collective judgment and experience of the Working Group.

The numerical values, after weighting, are summed; the maximum possible value is 100. Based on the sum, functions are categorized as follows:

<u>SCORE RANGE</u>	<u>CATEGORY</u>
0 – 20	NRS
21 – 40	LSS
41 – 70	MSS
71 – 100	HSS

A function with a low categorization due to a low sum can receive a higher risk classification if any one of their five questions received a high numerical answer. Specifically, a weighted score of 25 on any one question results in an HSS categorization; a weighted score of 15-20 on any one question results in a minimum categorization of MSS; and a weighted score of 9-12 on any one question results in a minimum categorization of LSS. This is done to ensure that a component with a significant risk in one area does not have that risk masked because of its low risk in other areas.

In general, a component is given the same categorization as the system function that the component supports. However, a component may be ranked lower than the associated system function. **[STPNOC agreed to provide discussion on the basis for lower ranking]**

General notes are used to document component risk justification, where needed, for similar component types that are treated the same from system to system. Components covered by a general note are evaluated by the Working Group to ensure proper applicability of the note and appropriateness of the risk categorization. The use of general notes is an administrative tool that allows for increased efficiency in the documentation of justifications of large numbers of similar components. General notes are not used for **categorizing system functions.**

13.7.2.5 Defense in Depth and Safety Margins. For the following reasons, the exemption and the categorization process maintain defense in depth and sufficient safety

margins: [STPNOC agreed to add insights gained from a sensitivity study that increased the unavailability of LSS SSCs modeled in the PRA associated with maintaining containment integrity at the end of Section 13.7.2.5. STPNOC proposed that this sensitivity study be done once as a demonstration that these SSCs do not have a significant impact on maintaining containment integrity or the protection of public health and safety. The NRC is assessing the adequacy of performing this study one time.]

- **Design and** functional requirements ~~and the design configuration~~ of systems will not be changed by this exemption.
- No existing plant barriers are removed or altered.
- Design provisions for redundancy, diversity, and independence are maintained.
- The plant's response to transients or other initiators is not affected.
- Preventive or mitigative capability of components is preserved.
- There is no change in any of the safety analyses in the UFSAR.
- Existing safety-related LSS and NRS components will not be replaced, absent good cause (e.g., obsolescence or failure). Since the existing safety-related LSS and NRS components were designed, procured, manufactured, and installed in accordance with the existing special treatment requirements, these components have inherent design margins to perform their intended functions that will not be adversely affected by this exemption.
- The treatment processes described in Section 13.7.3 provide an appropriate and acceptable level of assurance that safety-related LSS and NRS components will be able to perform their intended functions.
- The corrective action program is applied to safety-related LSS and NRS components. This program provides reasonable assurance that deficiencies involving safety-related LSS and NRS components will be identified, corrected, and necessary action taken to ensure acceptable performance levels are maintained.

### 13.7.3 Treatment for Component Categories

13.7.3.1 Description of Treatment for Component Categories. The following treatment is provided for the various component categories:

- Safety-Related HSS and MSS Components – The purpose of treatment applied to safety-related HSS and MSS SSCs is to maintain compliance with NRC regulations and the ability of these SSCs to perform **any** risk-significant functions consistent with **the assumptions in** the categorization process. These components continue to receive the treatment required by NRC regulations and STP's associated implementing programs.

Some safety-related components may be called upon to perform functions that are beyond the design basis or perform safety-related functions under conditions that are beyond the design basis. STP's PRA does not take credit for such functions unless there is basis for confidence that the component will be able to perform the functions (e.g., the functions are subject to special treatment; demonstrated ability of the component to perform the functions under the specified conditions). Additionally, to the extent that the PRA does credit such functions, the PRA assumes a reduced reliability for the function commensurate with the severity of the beyond design basis conditions in question and the special treatment provided to the function. However, if STP should decide to take credit for such functions beyond that described above, STP would use the process described in Section 13.7.3.2 to

evaluate the risk-significant functions performed by these components that are not being treated under STP's current programs, and provide enhanced treatment for such functions.

- Non-Safety-Related HSS and MSS Components – The purpose of treatment applied to non-safety-related HSS and MSS SSCs is to maintain their ability to perform risk-significant functions consistent with ~~the assumptions in~~ the categorization process. These components will continue to receive any existing special treatment required by NRC regulations and STP's implementing programs. Additionally, the risk-significant functions of these components will receive consideration for enhanced treatment. This consideration is described in Section 13.7.3.2.
- Safety-Related LSS and NRS Components – These components receive STP's normal commercial and industrial practices. These practices are described in Section 13.7.3.3.

***[COMMENT: STPNOC questioned how LSS/NRS functions of HSS/MSS pieceparts could be treated. Need for additional discussion between NRC and STPNOC.]***

- Non-Safety-Related LSS and NRS Components – The treatment of these components is not subject to regulatory control.
- Uncategorized Components – Until a component is categorized, it continues to receive the treatment required by NRC regulations and STP's associated implementing programs, as applicable.

13.7.3.2 Enhanced Treatment for HSS and MSS Components. Non-safety-related HSS and MSS components may perform risk-significant functions that are not addressed by STP's current treatment programs.

When a non-safety-related component is categorized as HSS or MSS, STP documents the condition under the corrective action program and determines whether enhanced treatment is warranted to enhance the reliability and availability of the function. In particular, STP evaluates the treatment applied to the component to ensure that the existing controls are sufficient to maintain the reliability and availability of the component in a manner that is consistent with its categorization. This process evaluates the reliability of the component, the adequacy of the existing controls, and the need for any changes. If changes are needed, additional controls are applied to the component. In addition, the component is placed under the Maintenance Rule monitoring program, if not already scoped in the program (i.e., failures of the component are evaluated and Maintenance Rule Functional Failures (MRFF) involving the component are counted against the performance criteria at the plant/system/train level, as applicable). Additionally, as provided in the approved GQA program, non-safety-related HSS and MSS components are subject to the TARGETED QA program. These controls will be specifically 'targeted' to the critical attributes that resulted in the component being categorized as HSS or MSS. Components under these controls will remain non-safety-related, but the special treatments will be appropriately applied to give additional assurance that the component will be able to perform its HSS/MSS function when demanded.

As discussed in Section 13.7.3.1, STP's PRA does not take credit for the beyond-design basis functions of safety-related components, unless there is a basis for confidence that the component will be able to perform the functions. However, if STP should decide to take credit

for a risk-significant function in a situation in which existing special treatment does not provide the applicable level of confidence, STP would use the process described above to evaluate enhanced treatment for the function.

These identified processes provide **reasonable (sufficient?) confidence (assurance?)** [Note: the specific terminology used for this concept needs to be agreed to by STPNOC and the NRC.] that HSS and MSS components will be able to perform their **safety risk significant functions**. The validation of functionality of HSS and MSS SSCs (safety-related and non-safety-related) will consist of a documented **engineering technical** evaluation to determine what enhanced treatment, if any, is warranted for these SSCs to provide **sufficient** confidence **(assurance?)** that the applicable risk significant functions will be satisfied. The performance of these SSCs will be monitored sufficiently to assure their ongoing capability to perform their **applicable risk significant** functions **credited in the PRA**. The design control process will assure that facility changes affecting the risk-significant functions of these SSCs **credited in the PRA** will continue to be capable of performing those functions.

#### 13.7.3.3 Normal Commercial and Industrial Practices for Safety-Related LSS and NRS Components

A description of STP's commercial practices is provided below. The purpose of the treatment practices applied to safety-related LSS and NRS SSCs is to maintain their design basis and functionality under **all** design-basis conditions. **[STPNOC has indicated that it will add a statement in this section that discusses full or partial implementation of changes to the treatment granted by the exemptions. The staff agreed that this would be reasonable.]**

**[NOTE: The NRC suggested that the purposes of each of the elements of the treatment process described be rewritten to focus on the purpose of the element in supporting the licensee's overall determination that the LSS and NRS safety-related SSCs will remain capable of performing their safety-related functions.]**

**13.7.3.3.1 Design Control Process.** The Station's Design Control Program is used for safety-related SSCs, including safety-related LSS and NRS SSCs). The Design Control Program complies with 10 CFR Part 50, Appendix B, and is described in the Operations Quality Assurance Plan (OQAP). The design control process for safety-related LSS and NRS SSCs will maintain and apply the **original** design inputs and assumptions to maintain the ability of these SSCs to perform their safety-related functions under design-basis conditions. Changes to the design basis of safety-related LSS and NRS SSCs will be controlled following the design control process satisfying 10 CFR Part 50, Appendix B.

**13.7.3.3.2 Procurement Process.** **~~The procurement process for replacement safety-related LSS and NRS SSCs will maintain and apply the original design inputs and assumptions to maintain the ability of these SSCs to perform their safety-related functions under design-basis conditions.~~ [NRC staff revised proposal for statement of purpose: The purpose of the procurement process for safety-related LSS and NRS SSCs is to procure replacement SSCs that satisfy the design inputs and assumptions to support STP's determination that these SSCs will be capable of performing their safety-related functions under design-basis conditions.]**

Technical requirements (including applicable design basis environmental and seismic conditions) **are specified satisfied** for items to be procured, **which** include the **original** design inputs and assumptions for the item. As described below, one or more of the following methods



will be used to determine that *there is sufficient confidence (assurance?) that* the procured item can perform its safety-related function under design basis conditions, including applicable design basis environmental *(temperature and pressure, humidity, chemical effects, radiation, aging, submergence, and synergistic effects)* [STPNOC suggests this is more detail than is necessary in the FSAR] and seismic *(earthquake motion, as described in the design bases, including seismic inputs and design load combinations)* [STPNOC suggests this is more detail than is necessary in the FSAR and will limit ability to use seismic experience data.] conditions:

- Vendor Documentation - Vendor documentation *should could* be used when the performance characteristics for the item, as specified in vendor documentation (e.g., catalog information, certificate of conformance), satisfy the *original* SSC's design requirements. If the vendor documentation does not contain this level of detail, then the design requirements could be provided in the procurement specifications. The vendor's acceptance of the *procurement specifications without exception could be used as the basis for confidence stated design specifications provides sufficient confidence (assurance?)* that the replacement safety-related LSS or NRS SSC would *remain be* capable of performing its safety-related functions under design basis conditions.
- Equivalency Evaluation - An equivalency evaluation could be used when it is sufficient to determine that the procured item is equivalent to the item being replaced (e.g., a like-for-like replacement). *An equivalency evaluation is sufficient to demonstrate component functionality under design basis harsh environmental conditions for identical components. [To be addressed with the broader question of environmental design conditions.]*
- Engineering Evaluation - For minor differences, an engineering evaluation *that compares could be performed to compare* the differences between the procured item and *the design requirements original item* and *demonstrates determines [?]* that *the* differences *in areas such as*, material, size, shape, stressors, aging mechanisms, and functional capabilities would not adversely affect the ability to perform the safety-related functions of the SSC *could be used to establish component functionality* under design basis conditions.
- Engineering Analysis - In cases involving substantial differences between the procured item and *original item the design requirements*, an engineering analysis could be performed to determine that the procured item can perform its safety-related function under design basis conditions. The engineering analysis would be based *on engineering methods that include upon a computer* calculations, evaluations by multiple disciplines, test data, or operating experience related to the procured item over its expected life. Where the differences are determined to *result in require* a design change, STP will follow *ing* the design control process for safety-related SSCs.

**[COMMENT: Further discussions may be required on the level of detail required for an engineering analysis to address environmental design basis conditions.]**

- Testing - *If none of the above methods are sufficient, commercial* Testing under simulated design basis conditions *would could* be performed on the component. Margins and documentation specified in NRC regulations would not be required in these tests, since the components are LSS/NRS and do not warrant this additional assurance.

***[COMMENT: STPNOC indicated that should none of these methods be appropriate, it would opt to procure a replacement SSCs as a fully qualified component. See 13.7.3.3]***

Documentation of the implementation of these methods is maintained. Additionally, documentation is maintained to identify the preventive maintenance needed to preserve the capability of the procured item to perform its safety-related function under applicable design basis environmental and seismic conditions for its expected life.

A Purchase Order is issued to the supplier, which specifies the item to be procured either by catalog identification or procurement specifications.

STP uses the following commercial national consensus standards in the procurement process to provide confidence that components can perform their safety-related function:

- X Standards required by the State of Texas to be used in the process.
- X Standards used at STP for the procurement of SSCs consistent with STP's normal commercial and industrial practices. ***[STPNOC to merge the bullets into the paragraph keeping the thoughts about the standards of the State of Texas and the standards for procurement used in its normal commercial and industrial practices.]***

STP does not need to itemize the standards in use at STP or to perform an evaluation of all national consensus standards.

The procurement program provides for the identification and implementation of special handling and storage requirements to ensure that the item is not damaged or degraded during shipment to the site or during storage on site. These handling and storage requirements consider available recommendations from the vendor. STP may use an alternative to these recommendations if there is a technical basis that supports the functionality of the safety-related LSS and NRS SSCs. The basis does not need to be documented.

At the time of receipt, the received item is inspected to ensure that the item was not damaged in the process of shipping, and that the item received is the item ordered.

13.7.3.3.3 Installation Process. ***The installation process for safety-related LSS and NRS SSCs will be implemented to maintain the ability of these SSCs to perform their safety-related functions under design-basis conditions. [NRC staff revised proposal for statement of purpose: The purpose of the installation process for safety-related LSS and NRS SSCs is to ensure replacement SSCs are properly installed and tested to support STP's determination that these SSCs will be capable of performing their safety-related functions under design-basis conditions.]*** STP uses the following commercial national consensus standards in the installation process to provide confidence that components can perform their safety-related function:

- X Standards required by the State of Texas to be used in the process.
- X Standards used at STP for the installation of SSCs consistent with STP's normal commercial and industrial practices. ***[STPNOC to merge the bullets into the paragraph***



*keeping the thoughts about the standards of the State of Texas and the standards for installation used in its normal commercial and industrial practices.]*

STP does not need to itemize the standards in use at STP or to perform an evaluation of all national consensus standards.

Post-installation testing will be performed *to the extent necessary* to provide *sufficient* confidence *(assurance?)* that the installed SSC will perform its safety function. *satisfactorily in service.* The test verifies that the SSC is operating within expected parameters and is functional. The testing may necessitate that the SSC be placed in service to validate the acceptance of its performance. Testing is not necessarily performed under design basis conditions.

13.7.3.3.4 Maintenance Process. *The maintenance process for safety-related LSS and NRS SSCs will be implemented to maintain the ability of these SSCs to perform their safety-related functions under design-basis conditions, through predictive, preventive, and corrective maintenance. [NRC staff revised proposal for statement of purpose: The purpose of the maintenance process for safety-related LSS and NRS SSCs is to establish the scope, frequency, and detail of maintenance activities necessary to support STP's determination that these SSCs will remain capable of performing their safety-related functions under design-basis conditions.]* Preventive maintenance tasks are developed for active structures, systems, or components factoring in vendor recommendations. STP may use an alternative to these recommendations if there is a technical basis that supports the functionality of the safety-related LSS and NRS SSCs. The basis does not need to be documented. For SSCs with a designed life, STP will *perform an analysis before the SSC exceeds this life to determine whether have a technical basis to have sufficient confidence (assurance?)* that the SSC will remain capable of performing its safety-related function(s) *beyond before exceeding* its designed life. *The service conditions for SSCs with a designed life will be monitored to ensure the basis for the designed life remains valid. [STPNOC indicated that the discussion on designed life is not consistent with the NRC's position to discuss what the process will do, but describes how to do the activity. Resolution of the details in this subsection may require further discussions on monitoring service conditions to address environmental design basis conditions.]*

The frequency and scope of predictive maintenance actions are established and documented *based on various considerations such as considering* vendor recommendations, environmental operating conditions, safety significance, and operating performance history. STP may deviate from vendor recommendations where a technical basis supports the functionality of the safety-related LSS and NRS SSCs. Such deviations are not required to be documented.

When an SSC deficiency is identified, it is documented and tracked through the Corrective Action Program. The deficiency is evaluated to determine the corrective maintenance to be performed.

Following maintenance activities that affect the capability of a component to perform its safety-related function, post maintenance testing is performed to *the extent necessary to* provide *sufficient* confidence *(assurance?)* that the SSC is performing within expected parameters.

STP uses the following commercial national consensus standards in the maintenance process to provide confidence that components can perform their safety-related function:

- X Standards required by the State of Texas to be used in the process.
- X Standards used at STP for maintenance of SSCs consistent with STP's normal commercial and industrial practices. *[STPNOC to merge the bullets into the paragraph keeping the thoughts about the standards of the State of Texas and the standards for maintenance used in its normal commercial and industrial practices.]*

STP does not need to itemize the standards in use at STP or to perform an evaluation of all national consensus standards.

13.7.3.3.5 Inspection, Test, and Surveillance Process. *The inspection, test, and surveillance process for safety-related LSS and NRS SSCs will be implemented to maintain the ability of these SSCs to perform their safety-related functions under design-basis conditions. [NRC staff revised proposal for statement of purpose: The purpose of the inspection, test, and surveillance process for safety-related LSS and NRS SSCs is to obtain operational data or information to support STP's determination that these SSCs will remain capable of performing their safety-related functions under design-basis conditions.]* The Station's inspection and test process is primarily addressed and implemented through the Maintenance process. As stated above, the Maintenance process addresses inspections and tests through corrective, preventive, and predictive maintenance activities. These activities factor in vendor recommendations into the selected approach. STP may use an alternative to these recommendations if there is a technical basis that supports the functionality of the safety-related LSS and NRS SSCs. The basis does not need to be documented.

For ASME pumps and valves, the inspection, test, and surveillance process provides data/information that allows *insights evaluation of operating characteristics sufficient to conclude that the component will perform its safety function under design-basis conditions until the next time operational data/information is obtained likely satisfy its functional requirements. [STPNOC and the staff do not agree on the need for or the outcome required of this process for ASME pumps and valves. Further discussion is required to resolve this issue.]*

STP uses the following commercial national consensus standards in the inspection, test, and surveillance process to provide confidence that components can perform their safety-related functions:

- X Standards required by the State of Texas to be used in the process.
- X Standards used at STP for testing, inspecting, or surveillance of SSCs consistent with STP's normal commercial and industrial practices. *[STPNOC to merge the bullets into the paragraph keeping the thoughts about the standards of the State of Texas and the standards for testing, inspecting, or surveillance used in its normal commercial and industrial practices.]*

STP does not need to itemize the standards in use at STP or to perform an evaluation of all national consensus standards.

13.7.3.3.6 Corrective Action Program. The Station's Corrective Action Program is used for both safety-related (LSS and NRS as well as HSS and MSS SSCs) and non-safety-related

applications. The Corrective Action Program complies with 10 CFR Part 50 Appendix B, and is described in the OQAP.

13.7.3.3.7 Management and Oversight Process. *The management and oversight process for safety-related LSS and NRS SSCs will be implemented to maintain the ability of these SSCs to perform their safety-related functions under design-basis conditions. [NRC staff revised proposal for statement of purpose: The purpose of the management and oversight process for safety-related LSS and NRS SSCs is to control the implementation of the treatment processes, assess the effectiveness of the implementation of the treatment processes, and evaluate proposed changes to commitments to support STP's determination that these SSCs will remain capable of performing their safety-related functions under design-basis conditions.]*

The Station's management and oversight process is accomplished through approved procedures and guidelines. This process includes independent oversight, line self-assessments, and Maintenance Rule implementation (plant, system, or train level for LSS and NRS components). In addition, the Graded Quality Assurance Working Group periodically assesses SSC performance.

Procedures provide for the qualification, training, and certification of personnel. STP considers vendor recommendations in the training, qualification, and certification of personnel. STP may use an alternative to these recommendations if there is a *technical basis that supports the functionality of the safety-related LSS and NRS SSCs basis for continued effective training of personnel.* The basis does not need to be documented. Additionally, STP uses the following commercial national consensus standards for qualification, training, and certification of personnel to provide confidence that components can perform their safety-related function:

- X Standards required by the State of Texas to be used in the process.
- X Standards used at STP for qualification, training, or certification of personnel, consistent with STP's normal commercial and industrial practices. *[STPNOC to merge the bullets into the paragraph keeping the thoughts about the standards of the State of Texas and the standards for qualification, training, or certification of personnel used in its normal commercial and industrial practices.]*

STP does not need to itemize the standards in use at STP or to perform an evaluation of all national consensus standards.

Documentation, reviews, and record retention requirements for completed work activities are governed by Station procedures.

Procedures identify the types of inspection, test, and surveillance equipment requiring control and calibration, and the interval of calibration. *Measuring and test* equipment that is found to be in error or defective is removed from service or properly tagged to indicate the error or defect, and a determination is made of the functionality of the *safety-related [STPNOC to look at flexibility provided in Generic Letter 91-18 in addressing degraded or non-conforming conditions as it affects operability/functionality for low risk significant SSCs.]* SSCs that were checked using that equipment.

Planned changes to, or elimination of, commitments described in the FSAR or other licensing bases documentation that address issues identified in NRC generic communications (i.e., generic letters or bulletins), NRC orders, notices of violation, etc. related to safety-related LSS and NRS SSCs will be evaluated for the effect on the ability of these SSCs to perform their

safety-related functions under design basis conditions in accordance with ~~the current an~~ NRC endorsed ~~commitment change process. version of NEI 99-04.~~

13.7.3.3.8 Configuration Control Process. The Station's configuration control process is controlled through approved procedures and policies. The design control process ensures that the configuration of the Station is properly reflected in design documents and drawings.

#### 13.7.4 Continuing Evaluations and Assessments

13.7.4.1 Performance Monitoring. STP has performance monitoring processes ~~for the changes in the special treatment. This monitoring that~~ includes the following:

- Maintenance Rule Program – Specific performance criteria are identified at the plant, system, or train level. Regardless of their risk categorization, components that affect MSS or HSS functions will be monitored and assessed in accordance with plant, system and/or train performance criteria.
- Performance Reporting & Identification Database – This database collects both positive and negative indicators from the performance of plant activities, such as corrective maintenance, installation of modifications, and conduct of testing. The Quality organization provides oversight of this database.
- Corrective Action Program - Condition reports document degraded equipment performance or conditions, including conditions identified as a result of operator rounds, system engineer walk-downs, and corrective maintenance activities.

13.7.4.2 Feedback and Corrective Action. STP has feedback and corrective action processes to ensure that equipment performance changes are evaluated for impact on the component risk categorization, the application of special treatment, and other corrective actions. At least once per cycle, performance data is compiled and presented to the Working Group for review, which is performed for each risk-categorized system. Performance and reliability data are generally obtained from sources such as the Maintenance Rule Program and Operating Experience Review.

This process provides an appropriate level of assurance that any significant negative performance changes that are attributed to the relaxation of special treatment controls are addressed in a timely manner. Responsive actions may include the reinstatement of applicable controls up to and including the re-categorization of the component's risk significance, as appropriate.

13.7.4.3 Process for Assessing Aggregate Changes in Plant Risk. The Expert Panel is responsible for assessing and approving the aggregate effect on plant risk for risk-informed applications.

The process used to assess the aggregate change in plant risk associated with changes in special treatment for components is based on periodic updates to the station's PRA and the associated PRA risk ranking sensitivity studies. ~~[STPNOC indicated it will address sensitivity study in categorization section of FSAR.]~~

## 13.7.5 Quality Assurance and Change Control for the Risk-Informed Process

### 13.7.5.1 Quality Assurance for the PRA and Categorization Process.

STP has a PRA configuration control program, which is structured to ensure that changes in plant design and equipment performance are reflected in the PRA as appropriate. The PRA configuration control process is controlled by procedures and guidelines that ensure proper control of changes to the models.

13.7.5.2 Regulatory Process for Controlling Changes. Changes affecting Section 13.7 will be controlled in accordance with the following provisions:

**[COMMENT: Proposed changes made by STPNOC noted below will require review of NRC legal staff.]**

- a. Changes ~~in the~~ **to Section 13.7.2, "Component Categorization Process" as described in Section 13.7.2** may be made without prior NRC approval, unless the change would decrease the effectiveness of the process in identifying HSS and MSS components.
- b. Changes ~~in the~~ **to Section 13.7.3, "Treatment of Component Categories" as described in Section 13.7.3** may be made without prior NRC approval, unless the change would result in a reduction in the assurance of component functionality.
- c. Changes ~~in the~~ **to Section 13.7.4, "Continuing Evaluations and Assessments" as described in Section 13.7.4** may be made without prior NRC approval, unless the change would result in a decrease in effectiveness of the evaluations and assessments.
- d. A report shall be submitted, as specified in 10 CFR 50.4, of ~~each~~ changes made without prior NRC approval pursuant to these provisions. The report shall identify each change and describe the basis for the conclusion that the change does not involve a decrease in effectiveness or assurance as described above. The report shall be submitted within 60 days of the date of the change.
- e. Changes to ~~the descriptions of the categorization, treatment, and oversight (evaluation and assessment) processes in~~ Sections 13.7.2, 13.7.3, and 13.7.4 that ~~result in a decrease or reduction in the effectiveness or assurance of these processes as described above~~ **do not meet the criteria of Sections 13.7.5.2.a through c** shall be submitted to the NRC for prior review and approval.



*United States*  
*Nuclear Regulatory Commission*

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# **SOUTH TEXAS PROJECT REQUESTED EXEMPTIONS FROM SPECIAL TREATMENT REQUIREMENTS**

## **ADVISORY COMMITTEE ON REACTOR SAFEGUARDS TREATMENT OPEN ITEMS**

***John A. Nakoski***  
*Senior Project Manager, STP Units 1 and 2*  
*Division of Licensing Project Management*  
*Office of Nuclear Reactor Regulation*

**April 6, 2001**

# **SOUTH TEXAS PROJECT RISK INFORMED EXEMPTION REQUEST**

## **TIMELINE**

- **7/13/99** *Exemption Request Submitted*
- **8/31-9/1/99** *Meeting on Exemption Requests*
- **10/5-6/99** *Meeting on Exemption Requests*
- **1/18/00** *Request for Additional Information Issued*
- **4/10-11/00** *Meeting on Categorization*
- **6/20-21/00** *Meeting on Treatment*
- **7/19/00** *Draft Review Guidelines Issued to STP*
- **7/24-25/00** *Meeting on Commercial Practices*
- **8/31/00** *Revised STP Exemption Request Submitted*
- **11/15/00** *Draft Safety Evaluation Issued*
- **12/7/00** *ACRS Briefing on Draft Safety Evaluation*
- **12/6 & 8/00** *Meeting on Draft SE Open Items*
- **1/24/01** *Response to Draft SE Open Items Submitted*
- **2/14-15/01** *Meeting on Open Item Resolution*
- **2/21/01** *ACRS Subcommittee Meeting on Categorization*
- **4/4-5/01** *Meeting on Open Item Resolution*
- **TBD** **Open Items from Draft SE resolved**
- **4/6/01** **ACRS Committee Meeting on Treatment**
- **5/1/01** **Preliminary Final Safety Evaluation Due to EDO**
- **5/10/01** **ACRS Committee Meeting on Safety Evaluation**
- **5/15/01** **Commission Paper Due to the Commission**
- **6/5/01** **Commission Briefing**
- **6/19/01** **Issue Final SE and Exemptions**

# STATUS OF STPNOC EXEMPTION REVIEW

## 16 Open Items and 2 Confirmatory Items (☛ treatment open items)

### ✓ 6 Closed

- ▶ Open Item 3.1 (Importance Measure Equations for Common Cause Failure)
- ▶ Open Item 3.2 (Fussell-Vesely Importance Measure Criteria)
- ▶ Open Item 3.3 (Qualification of Integrated Decisionmaking Panel Members)
- ☛ Open Item 7.1 (Revised QA Program Description)
- ☛ Open Item 13.1 (Scope of Maintenance Rule Exemption Request)
- ▶ Open Item 3.6 (Use of General Notes in Categorization Process)

### ✓ 7 Can Close Based on Agreement on FSAR Details

- ☛ Open Item 4.1 (FSAR Description of Treatment Processes for HSS/MSS SSCs)
- Open Item 4.2 (Detail in FSAR on Treatment Processes)
- Open Item 11.1 (Exemption from Qualification Requirements of IEEE 279) (partial closure, see OI 8.1)
- Open Item 18.1 (Exemption from 10 CFR Part 100, Appendix A, Seismic Requirements)
- ▶ Confirmatory Item 4.1 (Areas of Inconsistency in Submittals)
- ▶ Confirmatory Item 4.2 (Follow NRC Endorsed NEI Guidelines on Controlling Commitments)
- ▶ Open Item 5.1 (Controlling Changes to the Exemption Implementation Processes)

### ✓ 2 Have Success Path for Resolution (Agreement in Principal & Licensee Response Required)

- ▶ Open Item 3.4 (Categorization Process Consideration of Containment Integrity)
- ▶ Open Item 3.5 (Categorization Process Application to Passive Pressure Boundary Function)

☛ Open Items 10.1 and 10.2 (Repair/Replacement and ISI of ASME Code Components) Require Agreement in Principal on Success Path & Revised Licensee Response

☛ Open Item 8.1 (Exemption from 10 CFR 50.49 Environmental Qualification Requirements) Requires further Internal Review



## **OVERVIEW OF TREATMENT PROCESSES STPNOC EXEMPTION REQUEST**

### **Approach for staff review of STPNOC's Treatment Processes:**

1. The design basis would not change.
2. The functional capability of low safety significant SSCs would be maintained for design basis conditions, although at a lower level of confidence than for high safety significant SSCs.
3. The FSAR would include a high level description of the program on treatment for low safety significant SSCs. The FSAR would describe **what** the program would be, but not **how** the program would be implemented. The FSAR is the licensing basis for exemptions.

**The staff's finding regarding treatment is whether the licensee's treatment processes include the necessary elements, if effectively implemented, for the licensee to conclude that it has confidence that LSS and NRS SSCs will be capable of performing safety-related functions under design basis conditions. This finding is necessary to support the assumptions in categorization regarding the capability of the SSCs to remain functional.**

## **PERFORMANCE BASED ASPECTS OF TREATMENT**

- **Degree to which treatment processes are performance based varies**
- **Environmental and Seismic Qualification are not Performance Based (under either existing or proposed treatment)**
- **Areas such as Inservice Testing can be Performance Based**

## **TREATMENT OPEN ITEMS**

### **Open Item 4.1 - FSAR Description of Treatment Processes for HSS/MSS SSCs**

**Resolution:** Staff to work with STPNOC to ensure necessary elements of enhanced treatment process (relies on approved GQA Program) applicable to HSS/MSS SSCs included in STP FSAR.

### **Open Item 4.2 Detail in FSAR on Treatment Processes**

**Resolution:** Staff to work with STPNOC to specify necessary Elements in the FSAR of commercial processes and practices at STP for use as the basis for STPNOC to conclude LSS and NRS SSCs will be capable of performing safety-related functions under design basis conditions.

- ✓ Design Control Process; Procurement Process; Installation Process; Maintenance Process; Inspection, Test and Surveillance Process; Corrective Action Program; Management and Oversight Process; and Configuration Control Process.
- ✓ Specific wording in the FSAR on these elements still being developed through cooperative effort between NRC and STPNOC.

## **TREATMENT OPEN ITEMS** (con't)

### **Open Item 7.1 - Revised QA Program Description**

**Resolution:** STPNOC has submitted an acceptable revision to its Operating QA Program.

### **Open Item 8.1 - Exemption from 10 CFR 50.49 EQ Requirements**

**Resolution:** STPNOC has provided sufficient basis on why it requested exemption from 10 CFR 50.49. Resolution of Open Item 4.2 necessary to establish elements in FSAR for exemption from 10 CFR 50.49.

- ✓ Design Requirements - temperature and pressure, humidity, chemical effects, radiation, aging, submergence, and synergistic effects.
- ✓ Documentation, margins, and methods for confirming capability of LSS and NRS SSCs to remain functional under design basis environmental conditions to be implemented consistent with elements of treatment and oversight processes described in FSAR.
- ✓ Staff working internally to align on details needed in FSAR regarding procuring replacement SSCs considering environmental design basis conditions.

### **Open Items 10.1 and 10.2 - Repair/Replacement and ISI of ASME Code Components**

**Resolution:** Pending. Need revised licensee response following February 14 - 15, 2001, meeting.

## **TREATMENT OPEN ITEMS** (con't)

### **Open Item 11.1 - Exemption from Qualification Requirements of IEEE 279**

**Resolution:** Licensee provided adequate basis on why it requested exemption. Resolution of OI 8.1 and 18.1 provide basis for closing this item.

### **Open Item 13.1 - Scope of Maintenance Rule Exemption Request**

**Resolution:** Licensee clarified that it was not seeking an exemption from the requirements of 10 CFR 50.65(a)(4).

### **Open Item 18.1 - 10 CFR Part 100, Appendix A, Seismic Requirements**

**Resolution:** STPNOC has provided sufficient basis on why it requested exemption from Sections VI.(a)(1) & (2) from Appendix A to 10 CFR Part 100. Resolution of Open Item 4.2 necessary to establish elements in FSAR for exemption from 10 CFR Part 100.

- ✓ Requirement to retain - SSCs designed for earthquake motion, as described in the design bases, including seismic inputs and design load combinations.
- ✓ Methods for confirming capability of LSS and NRS SSCs to remain functional under design basis seismic conditions to be implemented consistent with elements of treatment and oversight processes described in FSAR.

## **REMAINING ITEMS**

### **Confirmatory Item 4.1 - Areas of Inconsistency in Submittals**

**Resolution:** Staff SE to provide findings on elements of treatment program that can maintain design basis and functionality if effectively implemented. Inconsistencies will be identified and discussed in SE to allow STPNOC to resolve for effective implementation of these elements.

### **Confirmatory Item 4.2 - NEI Guidelines on Controlling Commitments**

**Resolution:** STPNOC confirmed its commitment to adhere to the NRC endorsed NEI 99-04. Staff to work with STPNOC to clarify its commitment.

### **Open Item 5.1 - Controlling Changes to the Exemption Implementation Processes**

**Resolution:** Processes upon which the NRC will base its findings will be controlled by:

1. Require processes to be described in the STP FSAR.
2. Require STPNOC to implement a change control process seeking prior NRC approval of changes that would decrease the effectiveness of categorization in identifying HSS/MSS SSCs, reduce the assurance of SSC functionality, or decrease the effectiveness of the evaluations and assessments as described in the STP FSAR.
3. Require report within 60 days of changes made without prior approval.
4. Changes to the STP FSAR description that result in a decrease or reduction if effectiveness or assurance be submitted for prior approval.